

THE UNIVERSITY OF CALGARY

AIDS AND PSYCHOSOCIAL CARE:  
A SINGLE-SYSTEM ANALYSIS

by

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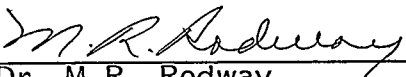
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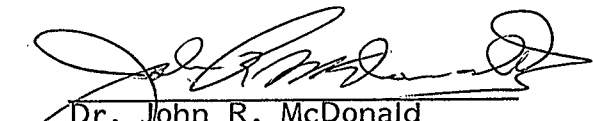
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THE UNIVERSITY OF CALGARY

FACULTY OF GRADUATE STUDIES

The undersigned certify that they have read, and recommend to the Faculty of Graduate Studies for acceptance, a thesis entitled, "AIDS and Psychosocial Care: A Single-System Analysis" submitted by Mary Irene Orgnero in partial fulfillment of the requirements for the degree of Master of Social Work.

  
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## ABSTRACT

Acquired immune deficiency syndrome (AIDS) is a universal health threat that has no known cure. Persons suffering from AIDS (PWAs) face extreme levels of stress in all levels of their lives. As a result, psychosocial treatment is a critical aspect of total care. This exploratory study, then, systematically examines the hypothesis that Heimler's Human Social Functioning (HSF) is a treatment model that would provide effective psychosocial care to PWAs.

The methodology employed to test the hypothesis was a single-system analysis, specifically the ABA design. The study was replicated with seven subjects, five of whom were homosexually oriented, one a bisexual male and one a female intravenous drug user. Four subjects completed the study, two died during the treatment phase and one withdrew during the first Phase A.

The instruments used to measure the extent of the subject's psychosocial needs across the three phases of the design included the Heimler's Scale of Social Functioning (HSSF) and a self-anchored scale. The self-anchored scale was specifically designed to measure the intensity of subjective feelings and perceptions of memory and body-image changes that had been noted to occur by other authors concerned about the psychosocial aspects of AIDS. The feelings were: anger, guilt, anxiety, independence and sinfulness.

The results, for the subjects who completed the study, indicate that the treatment was effective at, or greater than, the predetermined level of statistical significance. More specifically, findings revealed that PWAs experience stressors that permeate all dimensions of their lives: physical, emotional, intellectual, social and spiritual. The treatment method under study was able to address and alleviate concerns arising in these dimensions.

Limitations of the study, implications for the social work profession and for future research are considered.

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## CHAPTER ONE

### INTRODUCTION

Will AIDS patients ever reach a stage of acceptance and peace? Yes, the same is true as with all other terminally ill patients. If they receive and give themselves enough permission to express their anguish and other fears, their sense of impotence against a vicious killer virus and against a society that discriminates, judges, blames . . . (Kubler-Ross, 1987, pp.10-11).

Acquired Immune Deficiency Syndrome (AIDS) is a relatively new viral disease that is viewed by society as one of the most dangerous public threats of our times. To date there is no cure; consequently, it is a terminal illness. Persons with AIDS (PWAs) do not, as a rule, die quickly, rather they "waste away" over a period of one to two years (Lamke & Marquardt, 1987). Moreover, it has been reported (Saturday Night, 1988; The San Francisco Chronicle, cited by Seigal, 1988) that a few PWAs have survived four or more years following diagnosis. Therefore the side-effects of a chronic illness becomes an added concern. In this light, a health care plan that focuses on every aspect of the PWA, not just the physical consequences of the disease, is crucial.

Thus, a holistic approach is required, which, necessarily, involves the expertise of many professional caregivers amongst whom the social worker plays a prominent role. Psychosocial health-care is critical in addressing the unique needs of this relatively young population. In order to identify and respond to these needs, this exploratory study systematically examines the hypothesis that Heimler's Social Functioning

(Heimler, 1967) is a treatment model that would provide effective psychosocial care to PWAs.

### Historical Background

To understand the psychosocial impact of an AIDS diagnosis on an individual and his/her significant others, a brief history of the disease is in order.

Beginning in 1979-1980 in the United States healthy, homosexually-oriented young men began to die as a result of the development of rare tumors and unusual systemic infections. Studies by the Centers for Disease Control (CDC) in the United States, revealed that these persons had suddenly and inexplicably lost their natural defences to infection (Cahill, 1983; Cantrell, 1986). They had an illness for which modern medicine had neither a name nor a cure, as a result it was labelled Gay Related Immune Disease (GRID). It soon became evident, however, that the disease was not restricted to the gay population and, due to persistent pressure from these groups and other citizens concerned about the sociopolitical outcome of such a stigma, the disease was renamed AIDS (Cantrell, 1986; Furstenberg & Olson, 1984). Nevertheless, a stigma lingers because risk groups engage in behaviours that our society, in general, considers a deviation from the normal. Hence, they are held in low social esteem.

Although anyone can contract AIDS there are some that are at greater risk because of specific behaviours that facilitate the transmission (explained later) of the virus. Homosexual and bisexual men are the group at highest risk. For the most part research has focused on these groups (Batchelor, 1984; Massie, Tross, Prince, Holland &

Redd, 1987; Williams & Hopps, 1988). Intravenous drug users are the next major risk group. Heterosexual partners of infected persons are also at high risk. Recipients of blood or blood products, before the screening for the virus became mandatory, were included in the risk category. Today, the probability of contracting the infection through these means is low, approximately 460 out of three to four million each year (Ward, 1988). Nevertheless, those requiring blood or blood products, for example, hemophiliacs, still face a risk because of the "window" periods that exists between initial virus entry and antibody formation (Larke, 1988). Children born of mothers infected with the virus are a risk group of special concern because, due to ill health and the resultant frequent separations, parental bonding and the achievement of developmental tasks are often compromised (Bennett, 1987; Lewert, 1988).

#### Disease Implications for the Individual

AIDS has a mortality rate of more than 80 percent within two years of diagnosis (Buckingham & Rehn, 1987). Furthermore, the prolonged physical disability experienced by PWAs impact on every area of his/her life: physiologic, social, emotional, spiritual and intellectual. For example, bodily changes occur due to rapid, pronounced weight loss and/or cancerous skin discolorations which, in turn, affect the person's perception of his/her body image. A "good physique" is a highly valued attribute in our society but is even more valued by gay men, consequently, such bodily changes negatively affect their self-esteem (Lamke & Marquardt, 1987). Additionally, there are times when physical fatigue, exacerbated by pain and opportunistic infections, reduces the

PWAs ability to pursue necessary self-care activities such as personal hygiene. Thus, their sense of control over the most intimate tasks is greatly decreased which not only magnifies low self-esteem but evokes a sense of helplessness. Generally, physical disability precludes gainful employment, consequently, economic independence, social roles and relationships, associated with one's employment, also are lost. According to Heimler (1967, 1982) people tend to equate a sense of personal worth to meaningful employment. Therefore, loss of employment adds to their perceptions of low self-esteem and helplessness, and again, the result becomes a sense of hopelessness.

Moreover, social relationships in general are jeopardized as a result of contagion risks which have been blown to panic causing proportions in some areas by media coverage (Rosner, 1987; Lamke & Marquardt, 1987). For many PWAs intimate relationships with lovers, friends and family members have been disrupted not only as a result of the fear of contagion, but, also, as a result of homophobia (Phair, 1988). For example, the fear of ostracism by neighbours, friends, co-workers and employers influences the behaviour of relatives and significant others (Stulberg & Buckingham, 1988) which often leads to rejection of the PWA and/or the person testing positive (PTP). In addition, many parents feel responsible for their son's sexual orientation (Newmark & Taylor, 1987; Stulberg & Buckingham, 1988), therefore, the subsequent guilt, if unresolved, can lead to family discord and/or isolation of the PWA.

Consequently, the PWA is like a dislodged buoy tossed thither and yon by the seas of his/her emotions: fear of living, fear of dying, fear of rejection, anxiety, guilt, grief for self and others, anger at self and others and loneliness are some of these emotions. Also, facing mortality



at a stage of their development, when expectations of productiveness are usually at their greatest, evokes a spiritual turmoil that can lead to self-destruction and/or other destructive actions. For example, drug abuse and suicide attempts are frequent (Miller, 1986; Moynihan, Christ & Gallo-Silver, 1988) as is the willful spread of the virus (Calgary Herald, 1988).

Neurological complications experienced by the PWA affect cognitive processes. Their intellectual dimension is impaired in terms of decreased concentration, forgetfulness and confusion. AIDS Dementia Complex is common in the advanced stages of the disease (Massie et al., 1987; Buckingham & Van Gorp, 1988). Although neuropsychological symptoms are typically more pronounced in the end-stage of the disease, they can appear as the first signs of AIDS and the majority of AIDS patients develop some neurological complications (Massie et al., 1987).

In this light, then, the AIDS problem permeates all levels of society: the individual, the family, the community, our institutions, etc. According to Kubler-Ross (1987) AIDS is the ultimate challenge; this remains to be seen. But, it is clear that the challenge requires a team effort involving many professional care-givers including the physician, the nurse, the priest, the psychologist, the psychiatrist, the school teacher and the social worker.

#### Implications for Social Work

As a result of the AIDS epidemic social workers are facing challenges never before encountered: for example, the incidence of AIDS is highest amongst groups commonly looked upon as deviant and public reaction has ranged from open hostility (physical abuse reported in the

Calgary Herald, 1987) to outright expressions that AIDS is a sign of God's wrath for the sin of sexual perversion (New York Times, 1983; Newsweek, 1983; MacLean's, 1987). More recently the United States Surgeon General (quoted in the Calgary Herald, July 23, 1988) states that a wave of American public retribution against groups whose problems are seen as of their own doing could spread to AIDS victims by the end of the decade when the annual health bill for the disease reaches five billion dollars. Although most academic publications allude to the existence of homophobia, the popular press gives examples of open hostility and, therefore, is a better gauge of public opinion in general.

As a consequence, there is a need for the social worker to be active to insure that the legal and personal rights of these minority groups are not undermined. Moreover, in Calgary and other places, cuts in the health-care budget are alarming to the extent that the special biopsychosocial needs of PWAs may be neglected. Therefore, social workers must keep accurate records of their observations/experiences in order to document and publicize obstacles to treatment and/or gaps in services.

As well, the lack of pharmacological, immunological and medical interventions emphasizes the need for psychosocial care because during the disease process PWAs are bombarded with both internal and external stressful experiences which, in turn, undermine the immune system, the system already under attack from the virus. In this light, a social work treatment aimed at alleviating excessive stress would also serve as a protective measure for the immune system which, in turn, may increase the quantity and quality of the PWA's life.

Thus, the challenge for social workers is to assist the client in coping with the various stressors by:

- 1) providing services in an accepting, responsive and non-threatening manner (Leukefeld & Fimbres, 1987);
- 2) protecting the rights of PWAs and PTPs if discrimination, in terms of quarantine and/or violation of confidentiality, is threatened (Ryan, 1987);
- 3) distributing accurate information on the disease, its transmission mode and its prevention, as well as information on available medical, financial, legal and psychosocial resources (Macks, 1987); and
- 4) providing comprehensive psychosocial supports that will help the PWAs/PTPs, their families, lovers, spouses, children and friends (Newmark & Taylor, 1987; McDonald, 1987).
- 5) providing a holistic format of psychosocial treatment.

Therefore, objective assessment of the psychosocial performance of this population, as well as an effective method of treatment, would add to the general knowledge on how humans perform activities of daily living, in particular, on how PWAs manage their daily tasks. In addition, social work practice stands to be enhanced by such findings; for instance, it is suggested that social workers practicing at an individual, at a family or at a community level will benefit from knowing the psychosocial functioning of AIDS clients because these needs are significant in the treatment of the individual, his/her significant others and the community in which they reside. As well, through publication of observations and experiences, other professionals in the care-giving field will benefit from such knowledge.

Moreover, such knowledge may be useful in the development of social policies that pertain to the health-care system, the community, the school, the workplace and other social institutions (McDonald, 1987). For example, our health-care system has limited monetary budgets.

Therefore, alternative treatments, such as an effective psychosocial intervention, that would alleviate the PWA's vulnerability to feelings of helplessness and, subsequently, his/her reliance on physicians and medical prescriptions, may be more cost effective. Information from research on life stress (Conant, Friedland & Jaffe, 1987; Martin & Vance, 1984; Siegal, 1988; Simonton & Matthews-Simonton, 1985) supports the position that psychosocial intervention, in terms of stress management, can reverse or delay some disease outcomes.

In addition, policy-making activities must consider methods of infection control. To date, the focus is on education aimed at behavioural changes. The psychotherapeutic relationship obtained in treatment situations is ideal, not only for instigating behavioural changes but, also, for monitoring and reinforcing the desired behaviours.

Policies and governmental initiatives that protect the rights and needs of PWAs are critical. Discriminatory actions against PWAs from neighbours, co-workers, employers and/or professional caregivers are, generally, shared with the clinician, who, in turn, can lobby for desired changes. As well, adequate income has to be secured to insure that the basic needs of food, clothes and shelter are met. Therefore, knowledge of psychosocial issues with respect to the psychosocial functioning of the PWAs, has implications for policy-making activities that consider human rights, human needs and ethical/legal concerns that arise as the human race strives to cope with the public health crisis caused by the AIDS virus.

In conclusion, AIDS is a global concern that has the potential for changing our social fabric. For example, Mann, of the World Health Organization, stated at the Fourth International Conference on AIDS

that it is more likely that AIDS will change the world before the world changes AIDS (Larke, 1988). Social workers have a vital role to play, both in halting the spread of the disease and improving the quality of life for the PWAs/PTPs and his/her significant others. Therefore, an objective, systematic study of the efficacy of a psychosocial treatment would confirm and/or add to the present knowledge base on the psychosocial needs of and appropriate interventions for this growing population. However, before discussing a treatment model and its underlying theories, a review of the literature is proposed.

The next chapter discusses the medical and psychosocial aspects of AIDS as outlined in the literature.

## CHAPTER TWO

### LITERATURE REVIEW

This chapter discusses the medical and psychosocial aspects of AIDS: the virus, its classification, acquisition, transmission and prevention. Then, psychosocial issues and themes revealed by the literature are presented.

#### Medical Aspects

The discovery of the AIDS virus is credited to Dr. Luc Montagnier of the Pasteur Institute in Paris and Dr. Robert Gallo of the National Cancer Institute in the United States. Today, the virus is most frequently known as the Human Immunodeficiency Virus or HIV, however, occasionally the term HTLV-III/LAV is seen in the literature, a combination of the original names given to it by its discoverers.

Simply put, HIV attacks T-cell lymphocytes, specialized blood cells that are vital in the body's defence against infectious organisms (Tortora & Anagnostakos, 1984). It attacks "its host with a virulence rarely seen in an infectious disease" (Conant et al., 1987). Although antibodies are produced by the immune system, they are not protective, therefore, the hope for a vaccine is dim at this time (Larke, 1988). However, antibodies are indicative of an active infection, that is, it can be transmitted to others (Cantrell, 1986). Antibodies have been found in blood, semen, saliva, tears, vaginal secretion and breast milk (Lamke & Marquardt, 1987).

Two tests have been developed to detect the HIV antibody: enzyme-linked immunosorbant assay (ELISA) and Western Blotting. The ELISA

test is considered the most sensitive while the Western Blotting is the most specific; generally, both tests are used to confirm a diagnosis (Conant et al., 1987; Loveless, 1987).

#### Classification of HIV

HIV infection results in a range of illness states that are categorized by the Centres for Disease Control for surveillance purposes. Canada follows the guidelines set up by the United States and both countries are influenced by the World Health Organization (WHO). Categories are:

- Category I      Refers to persons with infection that produce mononucleosis-like symptoms and who have tested positive for the HIV (PTPs - Persons Tested Positive).
- Category II      Includes asymptomatic PTPs.
- Category III     Refers to PTPs presenting with persistent generalized lymphadenopathy (PGL).
- Category IV      Has approximately five sub-groups:
  - A - Constitutional disease which refers to prolonged immunodeficiency-related illnesses.
  - B - Neurologic disease which includes cognitive impairment, motor disturbances and dementia.
  - C - Secondary infections that are specifically outlined in the CDC definitions for AIDS (indicator diseases).
  - D - Secondary cancers, the most common of which is Kaposi Sarcoma.
  - E - Other conditions.

Persons in category IV, for the most part, are classified as having AIDS (PWAs) and persons from this category comprise the sample for the study.

## Acquisition and Transmission of HIV

Since the identification of AIDS in the United States, 93 percent of all reported cases have been in men, 6.6 percent in women and 0.4 percent in children. Seventy percent of all male cases have involved homosexual or bisexual men, 15 percent have involved intravenous drug abusers, 2 percent have involved those with hemophilia or coagulation disorders and 2 percent have involved heterosexual partners of HIV-infected persons. Female intravenous drug abusers account for 51 percent of all female cases of AIDS. Twenty-seven percent of women with AIDS are heterosexual partners of HIV-infected males and 10.4 percent have hemophilia or a coagulation disorder or have received blood transfusions. Disease acquisition cannot be identified for 3 percent of AIDS cases (CDC update, 1986). Because of careful monitoring, the risks of HIV transmission through blood/blood product transfusions have been greatly reduced but not eliminated (Conant et al., 1987; Ward, 1988). HIV infection is transmitted through three specific routes: sexual contact with an infected partner, parenteral exposure through infected blood products, shared needles in intravenous drug abuse, prenatal and perinatal transmission from mother to fetus/infant (Cantrell, 1986; Conant et al., 1987).

Although the virus has been isolated in a number of body fluids transmission of the virus through these fluids have not been demonstrated nor has the spread of the virus through casual contact, insect bites or water been documented (Lamke & Marquardt, 1987). According to Conant and associates (1987) there is no risk of spreading AIDS among non-sexual contacts within a household if elementary infection control procedures are observed because, outside the body, the virus is



fragile and is readily destroyed by detergent or household bleach. More recently, this position has been confirmed by Sanders (1988). Nevertheless, the number of PWAs continues to grow, likewise the number of PTPs. However, the American CDC (1982, 1985) and other scientists at the Fourth International Conference on AIDS (Calgary Herald, 1988) argue that large numbers of HIV carriers live in our society who are ignorant of their potential for spreading this lethal virus.

According to CDC projection studies (Loveless, 1987), by the year 1991, the estimated number of Americans with AIDS will be over ~~one~~ million. In Canada, reported cases (Federal Centre for AIDS, [FCA], March 21, 1988) amounted to 1,622 with 886 dead as of March 1988, while an estimated cumulative total of 6,974 is projected, using the polynomial model, by the year 1991. In Alberta, as of the end of June 1988, a cumulative total of 111 cases of AIDS has been reported, sixty of whom reside(d) in Calgary. The size of the problem in Canada may not equal that in the U.S., nevertheless, it behooves caregivers in general, social workers in particular, to aggressively strive to halt the progression of the AIDS epidemic.

### Prevention

It is widely accepted, at this time, that education is the best, if only, option available to halt and/or reverse the AIDS epidemic (Grant & Anns, 1988; Larke, 1988; Turner, McLaughlin & Shrum, 1988; Shernof & Palacios-Jimenez, 1988; Williams & Hopps, 1988). In response to the seriousness of the threat, agencies, centres, coalitions, networks, etc. have evolved globally, supported by public and private fund, and whose special mandates are to educate and/or to provide support. Education is

offered to the general public, to professional caregivers, to special interest groups and to high risk groups through a variety of means; for example, popular media, pamphlets, telephone hot-lines, presentations, seminars, conferences and "drop-in" programs.

Evidence of the success of these educational initiatives is seen in the reduction of the estimated figures in the high risk category, homosexual and bisexual men (Fourth International Conference on AIDS, Calgary Herald, 1988). In addition, reports (McKusick, 1985; Winkelstein, Samuel, Padian, Wiley, Lang, Anderson & Levy, 1987) indicate that unsafe sexual behaviours have been decreased by homosexual males at greatest risk, those with multiple partners. Through personal communication, the writer has learned that other high risk behaviours such as drug abuse in general, is not so prevalent in gay clubs, bars or other meeting places in the major cities in Canada.

Although information is easily acquired this infection continues to spread; for example, the number of heterosexuals and intravenous drug abusers diagnosed has increased (Fourth International AIDS Conference, 1988). Efforts are being made to reach intravenous drug abusers, especially in Canada and the U.S., by sending trained teams into areas where this population congregate for the purpose of demonstrating and teaching sterilization methods and for making sterile supplies available (Larke, 1988).

The heterosexual population, however, presents a major problem because many see AIDS as a disease restricted to the aforementioned fringe groups in our society (Larke, 1988; Phair, 1988), therefore, lifestyles remain unchanged. Although the Minister of Education in Alberta reports that human sexuality education programs in the schools

include information on AIDS, the disease, its transmission and prevention, not every child receives this information as parental consent is required (Betowski, 1988). The writer suggests that this could well be true for university students as well because, during AIDS Education Week at The University of Calgary (1988), very few students demonstrated interest, either by asking questions or taking available literature on AIDS. Those who sought information were: student nurses, student teachers, student social workers and two graduate students from biology and biochemistry who supervised laboratory work that involved human blood.

In this light, then, social workers have a unique opportunity to provide critical leadership in meeting the challenge posed to control the infection because of their roles as clinician, advocator, educator, consultant and researcher. In order to enhance these roles, an adequate knowledge base of both medical and psychosocial aspects are crucial (Buckingham, 1987; McDonald, 1987).

### Psychosocial Aspects

AIDS research has resulted in an outpouring of publications, most of which relate to the medical aspects (Batchelor, 1984; Coates Temoshok & Mandel, 1984; Schwartz, 1987). Many writers in the health care field, however, acknowledge that psychosocial concerns are a major source of stress for the PTP or PWA and his/her significant others and must be considered in the overall treatment regime. Also, a review of the literature reveals that an interdisciplinary treatment approach is preferred for this disease, as in the treatment of any life-threatening disease. Therefore, psychosocial counselling is employed to some extent

by many professionals involved in client health care, for example, physicians, nurses, pastors, psychiatrists, psychologists and social workers.

Although newspaper and magazine stories focused on the psychosocial issues of AIDS, few scientific articles addressing this aspect were published prior to 1984. According to Batchelor (1984) only one article appeared in a national scientific journal and that article was published by a colleague and himself. Limited surveys about the national impact of AIDS were undertaken but are not easily located (Horstman & Carfagni, 1983, 1984; McKusick, 1983; Puchall & Van Ness [1983] cited by Batchelor, 1984). Therefore, information on the psychosocial functioning of this population tended to be anecdotal and/or inferential.

Other publications (Coates et al., 1984; Martin & Vance, 1984) drew on prior research done on the effects of stress on the immune system and established theories of illness and wellness to propose models for assessing and treating psychosocial issues arising as a result of this disease. Even today relatively few systematic studies have been located by the writer.

Dilley, Ochitil, Perl and Volberding (1985) describe three psychological themes observed in AIDS patients who were admitted to a large city hospital. Their population consisted of eleven homosexual and two bisexual males. The method employed to determine these themes included a review of available medical and psychosocial histories, semi-structured interviews and mental status examinations. The first theme noted marked uncertainties surrounding the etiology, course and treatment of the disease which, in turn, cause the patient to feel anger and resentment towards their caregivers and to engage in passive/ aggressive type

behaviours. The second theme involved social isolation both within the hospital and other social networks. The high mortality rate, together with the communicable nature of the disease, were believed to be the reasons for isolation. The third theme observed was guilt. It was suggested that patients experienced their illness as "just punishment" for their sexual orientation and blamed themselves for their circumstances.

Salisbury (1986) offers an additional psychological consequence of this illness, that of low self-esteem. She argues that as the disease progresses the patient becomes more and more dependent on others because of the decline in physical well-being and subsequent fatigue. Thus, the person's self-esteem is pervasively assailed at the physical, social and psychological dimensions. Furthermore, she recommends that the psychosocial goal of patient care should be twofold: firstly, patient acceptance of the diagnosis, and secondly, patient maintenance of control over his/her life.

Other nursing professionals (Bennet, 1987; Bohm, 1987; Flaskerud, 1987; Graham & Cates, 1987; Kaylor, 1988; Reed, Wise & Mann, 1984; Wells, 1987) report that care based on the understanding of humanitarian needs is critical, therefore, examination of personal values and attitudes is essential as this disease "respects neither territorial boundaries nor sexual orientation." They suggest that caregiving involves dealing with crises, grief, anxiety, depression, fear and despair, as well as issues such as discrimination, rejection and economic loss.

In discussing the psychosocial implications of this disease, Lamke and Marquardt (1987) state that these patients live in an uncertain world filled with anger, denial, isolation and loss. They are angry at

themselves for contracting the infection, they are angry at health personnel for not providing a cure, they are angry at the media for exploitation and at friends (often family members) for rejection.

Denial is in accordance with the emotional stages experienced by the terminally ill described by Kubler-Ross (1969, 1987). Batchelor (1984) posits that all PWAs experience these stages and, therefore, these stages should be the focus of intervention.

In addition to the loss of friends and family, the progressive debilitation and generalized fatigue associated with this illness causes patients to lose their means of financial support and, as a result, housing and medical coverage (Lamke & Marquardt, 1987). Moreover, these writers suggest that progress made towards public acceptance of homosexuality has been halted, and in some communities, the social stigma has increased. Other studies (Gillon, 1987; Kelly, St. Lawrence, Smith, Hood & Cook, 1987; Reed, Wise & Mann, 1984) supported by the writer's professional experience, reveal the existence of social stigmatization amongst caregivers as well.

Authors from the social work profession (Buchingham & Rehm, 1987; Furstenberg & Olson, 1984; Jones, 1987; Lopez & Getzel, 1984; Mack, 1987; Mack & Turner, 1986; McDonald, 1987; Moynihan & Christ, 1987; Moynihan et al., 1988; Plotkin & Domanski, 1987; Rounds, 1988; Vass, 1987) agree that AIDS is a multidimensional phenomenon that concerns not just matters of biology, physiology or of medicine and medical technology. They posit that the AIDS situation serves to pinpoint the fact that every health condition (wellness, illness and disability) is at once a physical, psychological, social, economic and political phenomenon. Although they acknowledge that the social work profession cannot

address all the dimensions of the AIDS situation, they argue that social workers are uniquely equipped to play a vital part. For instance, social work tasks involve caring for the psychosocial needs of persons with AIDS, their significant others, their health caregivers, as well as activities at the community and policy-making levels.

Physicians (Abrams, 1986; Conant et al., 1987; Frierson & Lippman, 1987; Massie et al., 1987; Rosner, 1987; Schofferman, 1986; Truax, 1987; Zuger, 1987) also recognize the need for psychosocial care in the overall treatment of AIDS. They suggest that stress may accelerate AIDS because of its adverse effects on the immune system. They agree with the above writers that diagnosis of AIDS and its subsequent processes place heavy demands on the coping capacities of the person. They confirm that, at this time, these people are faced with the consequences of a terminal illness; that is, they will probably suffer considerable physical pain, debilitation, bodily change and, possibly, physical disfigurement. Moreover, the age of these patients (median age of 35 years) makes coping with this diagnosis particularly difficult, not only for that person but also for family, friends and caregivers because death is rare in this developmental stage of the life-cycle. As a result, again, it is reported that many respond with denial of the diagnosis, anger, guilt, depression and suicidal ideation.

Confidentiality, or rather the lack of it, is another source of stress for the HIV infected persons, insofar as those at greatest risk for contracting the infection are homosexual males and/or intravenous drug abusers. Therefore, fear of negative public reactions may cause the individuals not only to deny the diagnosis but to prevent them from

coming forward for treatment (Gill, 1988; Conant et al., 1987; Rowe et al., 1988; Williams & Hopps, 1988).

Kaplan, Johnson, Bailey and Simon (1987) support the above authors in their statement that subjective distress and the subsequent physiological responses influence the course of the disease in terms of its undesirable effects on the immune system--the system already weakened by the HIV. Also, they note the limitations in the existing literature which acknowledge the need for dealing with psychosocial issues, for the purpose of reducing distress, in the overall treatment plan but fail to do so in a systematic manner. For example, a few studies were found (Christ & Weiner, 1985; Dilley et al., 1985) that examined PWAs systematically, through the review of medical and psychosocial histories, semi-structured interviews, mental state examinations, interviews and surveys in the search of psychosocial themes for the purpose of determining a more effective overall treatment for AIDS patients. Also, Mandel (1986) implies that research is an ongoing matter for members of the "Biopsychosocial AIDS Project" at the University of California; nevertheless, the writer could not locate such studies.

In this light, then, an exploratory study designed to examine the psychosocial functioning of this population with the main focus on intervention is justified. Furthermore, it is proposed that the Heimler Social Functioning Model is well suited for such a study because it is both a diagnostic and intervention method. Research indicates that the HSF has been used successfully in palliative care (Allison, Rodway & Gripton, 1983) extended to cancer patients; in identifying psychosocial predictors of out-patient medical utilization (Burnell, 1988); in evaluating psychosocial stress and dysfunction in persons scheduled for initial



assessment for psychotherapy in a medical centre (Burnell & Norfleet, 1982); in identifying problems in daily living and the efficacy of counselling (Burnell & Taylor, 1982). In addition, this method was used to assess and monitor the social functioning of artificial kidney patients (Holcomb & McDonald, 1973); it was used to obtain information with respect to attributes of individuals and/or environment that elicit suicidal behaviour (Harrison, 1980) and lastly, it helped to identify coping patterns that contribute to illness (Bates, 1988).

A review of the literature, then, reveals that PTPs/PWAs face a complex set of psychosocial needs and issues as they struggle to confront the impact of the diagnosis on their lives. It is posited that psychological responses and coping patterns are similar to those seen in persons with other life-threatening illnesses, such as cancer and heart disease. However, social, cultural and political issues complicate the person's adaptation to the diagnosis because of public opinions regarding sex, homosexuality in particular, death, drugs and the drain on the health-care budget.

Permeating the literature, regardless of the professional orientation of contributors, are themes of uncertainty, anxiety, denial, depression, anger, passive-aggressive behaviours, guilt, social isolation, rejection, loss of self-esteem, various losses and various fears. Interventions are addressed at alleviating these themes through crisis management, stress management, group therapy and individual therapy.

In conclusion, there are many ways of alleviating despair, but first and foremost caregivers need to acknowledge that healing occurs at levels other than the physical, such as at the emotional, social, cognitive and spiritual levels. The next chapter briefly outlines influential

concepts and theories relevant to individual functioning and the healing process.

## CHAPTER THREE

### UNDERLYING CONCEPTUALIZATIONS AND THEORIES

Although there are many theories and conceptualizations of personality, development, adaptation and social functioning congruent with the HSF approach only a few will be discussed. The nature of this study has influenced this choice, insofar as it relates to illness/wellness states in people. Therefore, theories and concepts related to palliative care, stress and holism are considered appropriate. This chapter, then, outlines the theories of Heimler's Human Social Functioning, Palliative Care, Stress and Holism. Also, their relationship to the social work code of ethics is noted.

#### Human Social Functioning

Heimler (1967, 1975) developed a theory and method of counselling referred to as Human Social Functioning (HSF), which is based primarily on his own life experiences, both as a social worker and a prisoner of war. Basically, HSF holds that there are five major areas of both satisfaction and frustration; change in any area is reflected in other areas, that is, there is a dynamic interaction of all areas at any given time. The treatment focus is on areas of concern that are identified by the client. Overall, this is a client-centered, short-term treatment method that aims at creating a cognitive change which, in turn, facilitates positive self-initiated actions.

The HSF approach to psychotherapy offers a structure which includes an initial interview to determine the client's needs and goals, the Heimler Scale of Social Functioning (HSSF) for measuring levels of

satisfaction and frustration and to determine coping capacity, and other techniques which may be applied to individuals, couples and small groups. Six structural principles, however, permeate all techniques (Pratt, 1987). The principles serve as a framework for practice that extends to the clinician an opportunity to engage in a creative (yet scientific) exercise whereby he/she provides the structure, the client provides the content; the result of which is a meaningful portrait for the client drawn from his/her life experience.

### The Structural Principles

1. The satisfaction/frustration balance infers that satisfaction and frustration are part and parcel of the human condition. Satisfaction facilitates the flow of energy while frustration tends to block or impede the energy flow. The individual, then, seeks a balance. There are occasions, however, when the burden of frustration becomes so overwhelming that the person loses sight of existing satisfactions, consequently he/she is helpless to initiate any action which will reduce the despair associated with such helplessness. A sense of despair/helplessness has been emphasized in the AIDS literature. This principle, therefore, would provide a general framework within which the clinician could help the PTP/PWA to obtain a clearer view of his/her situation in that self-awareness is facilitated. The HSSF would reveal present levels of functioning or coping, in terms of satisfaction or frustration, which can be quantified and compared with established norms.
2. The process of externalization: The HSF philosophy suggests that the route to self-awareness often starts with others.

Externalization refers to drawing what is inside to the outside; that is, thoughts that are reverberating inside the mind are brought into the open by writing, drawing or talking, either to another person or into a tape-recorder. The purpose is to create a situation whereby the PTP/PWA dialogues between him/herself and his/her experience. The process of externalization is facilitated by the use of skills such as funnelling, summarizing and mirroring.

3. Funnelling, summarizing and mirroring: The clinician helps the client to achieve self-awareness through active listening. No interpretations are made nor does the social worker need to fully understand the client's statements; what is important is that the client understands that the worker hears what he/she is saying. The funnelling, summarizing and mirroring elements of active listening permit the PTP/PWA to reflect on what he/she is saying, hence his/her experience is not only externalized but also brought into focus.
4. The subjective focus: As already stated, except for the reading of the scales, the PTP/PWA decides the interview content, the meaning elicited from the content and the action(s) warranted. The social worker maintains the structure and process to ensure that the client makes sense of his/her experience and, subsequently, takes appropriate action to foster desirable change (for the person and society). In addition, the subjective focus acknowledges the uniqueness of the individual insofar as the person knows his circumstances better than anyone else.
5. Belief in action: This principle holds that the client has the ability to find meaning in his/her life experience and to take action that

will effect change, thus, the healing process is initiated insofar as a sense of control is restored.

6. The peer relationship: A peer relationship is a salient feature of HSF that provides a framework within which the clinician and the PTP/PWA can use each other in a therapeutic partnership that is nonjudgemental and not obscured by the customary social distance of a professional/client relationship. This attribute is, therefore, a major asset in consolidating a trusting link with persons that fear societal retribution such as PTP/PWAs as neither their coping defences nor their confidentiality are threatened.

It follows, therefore, that HSF is an intervention well suited to addressing the psychosocial concerns of PTPs/PWAs because it identifies existing levels of frustration and satisfaction in the main areas of daily living, thus, many hours are not wasted attempting to disclose needs and concerns. In this way, both the PWA/PTP and the agency benefit. As well, HSF is congruent with social work values that foster self-determination, respect for individual differences, the rights to confidentiality and privacy and the dignity and worth of the PTP/PWA. Moreover, it is a responsible, ethical approach to effect our commitment to the PTP/PWA and to society as counsellors, facilitators, educators and researchers. In essence, it reflects the principles and practices of therapy focused on the terminally ill.

### Palliative Care

The principles and practices of palliative care (Saunders, 1976, 1987) are in agreement with those of HSF. That is, both approaches emphasize helping persons achieve a fundamental balance between frus-

tration/helplessness and satisfaction/self-determination. Allison, Gripton and Rodway (1983) found in their study of terminally ill cancer patients that Heimler's Scale of Social Functioning, which serves both as a diagnostic and treatment instrument, to be:

An efficient and non-demanding procedure for identifying those aspects of a client's functioning that were the locus of greatest stress; and for directing the social worker's effort to help the client exert a greater measure of independence and control over his or her life (p.42).

In addition, the authors of the above study propose that HSF is a suitable model to address social issues and emotional concerns associated with death and dying. They argue that HSF integrates the concepts proposed by Butler (1979) and Pilsecker (1975) which address the benefits of a "life-review" in understanding how the past influences the present and how the present changes one's perception of the past; this, in turn, results in cognitions and actions that improve the quality of life in the present and the outlook for the future. The author's professional experience confirms these observations. As well, the above study noted that HSF fits the positions of Mount (1974) and Saunders (1978) who stressed the importance of accepting the defence mechanisms that dying persons use, which is in agreement with HSF's Subjective Focus Principle noted above. Overall, the findings of the study indicate that HSF counselling reduced the prevailing sense of helplessness and lack of control recorded in the beginning phase in five out of seven cancer patients.

Palliative care refers to the provision of services to persons for whom treatment aimed at cure is no longer feasible but for whom improved quality of remaining life is the main concern. Care is designed to meet the physical, emotional, intellectual, social and spiritual needs of

the dying person and their significant others (Holy Cross Hospital, 1986). These services include: the reduction and/or the control of distressful physical symptoms, psychotherapy for both client and significant others, encouragement and assistance to maintain interests and hobbies, encouragement to utilize community services such as group psychotherapy, relaxation programs, etc., and lastly, provision of spiritual support as requested. Palliative care, therefore, requires a multidisciplinary approach.

In her article, "Hospice for Aids Patients," Dame Cicely Saunders (1987) states:

The Principles of the Hospice movement, ever more effective symptom control and communication at all levels, . . . should not only apply to patients with far advanced cancer, but should be the basis of care and treatment of patients with any terminal illness (p.7).

However, questions have been raised regarding the appropriateness of hospice care for PWAs (Pollatsek, 1987; Saunders, 1987) where hospice refers to a special care facility for the terminally ill and dying (Garfield, 1978; Saunders, 1976). The issues of concern seem to center around the difference in the average ages of PWAs and cancer patients, the communicable nature of the HIV and the opportunistic infections that identify PWAs, the alternate lifestyles of PWAs and, of course, lack of resources/funding. These concerns suggest that PWAs have special needs that require special skills and no one professional has all the skills to meet all the needs.

AIDS is a terminal illness. PWAs must confront specific social and psychological tasks in their efforts to deal with dying and death (Kubler-Ross, 1987; Mcleod, Smith, & Willoughby, 1986; Moynihan et al.,



1988). Social workers, offering palliative care to this population, must take into account the disease process and its effect on body-image, therefore, self-esteem; the developmental stage of the individual which is more in tune with productivity than death, consequently, denial, anger, depression, guilt and suicidal ideation are some of the emotions evoked (Miller, 1986; Moynihan et al., 1988); the social context of the disease whereby the PWA may experience social isolation from loved ones and peers because of fear of contagion and/or rejection by family and friends because of social views on homosexuality, drug abuse and prostitution (Dilley et al., 1985; Kubler-Ross, 1987), and lastly, relatedness with God or other metaphysical being is questioned in terms of AIDS being seen as a punishment for sin (Dilley et al., 1985; New York Times, 1983).

In essence, the goal of palliative care for PWAs is directed towards achieving self-acceptance and a sense of control which, in turn, requires self-awareness. HSF will be able to meet these requirements because its basic principles are grounded in helping the client to get a clearer view of his/her situation, in terms of satisfaction/frustration levels in the present, so that he/she may take appropriate positive action to effect change. In addition, the HSSF measures the levels of satisfaction and frustration in all dimensions, for example, work/hobbies/interests, financial situation, friendships, primary and/or secondary family relationships, intrapersonal situation, perceptions of physical health, moods, escape routes/habits and the meaning of life as well as other aspects of a global outlook on life which may be linked to the spiritual dimension. Further, the results may be compared with established norms which are

kept current, thus, art and science are combined to promote self-awareness and a sense of personal control.

The externalization process facilitates ventilation of fears such as those of dying/death and fear of abandonment, as well as grief for the numerous losses, the most important of which is that of life itself. In doing so, new realizations and answers may be recognized. This process may be compared with Beck's (1976, 1979) cognitive therapy which posits that "modification of cognitions leads to changes in affect and behavior." However, Beck's cognitive therapy is directive while HSF is non-directive, yet structured and focused. HSF, also, encourages self-determination and, in doing so, recognizes the uniqueness of the individual, insofar as no interpretations are made but intervention is geared to the special needs of the individual in his/her present situation. In effect, HSF motivates the client to take action that will reduce the frustration or stress in his/her life while at the same time perceptions of satisfaction will be increased. The peer relationship enhances the client's ability to problem-solve and to maintain an acceptable measure of control in his/her life in spite of illness. The nature of this relationship is valued not only because it is nonjudgemental but, also, it demonstrates compassion and caring, in that two people come together to help each other. Thus, Saunder's (1976) poignant inference "suffering is intolerable only when nobody cares" and which also is paramount in the literature on AIDS in terms of fears of isolation and rejection, will not come to pass.

In the final analysis, just as the distress of birth can be eased through the assistance of a skilled professional so can the anguish of dying for the PWA and his/her significant others be eased through the

timely and appropriate intervention of a knowledgeable, caring social worker.

### Stress Theory

Stress theory and its relationship to illness is the focus of an emerging field of research called psychoneuroimmunology which appears appropriate in addressing the psychosocial aspects of AIDS (Massie, Tross, Price, Holland & Reid, 1987). Psychoneuroimmunology is the study of psychological behavioural and environmental stress factors that regulate immunity and immunologically resisted diseases such as infections, or diseases related to immunologic abreaction such as allergies (Coates, Temoshok & Mandel, 1984).

Cannon (1932, 1935) was the first to apply the concept of stress as a causative factor of disease. In developing his ideas of homeostasis, when it could be said that the body state is in balance, he describes the strains and stresses that result when pressure is placed on specific mechanisms that are necessary to maintain a balance.

Wolff (1950, 1953) carried the concept of stress further by defining it as an internal force that is produced by external forces or loads. Thus, stress is viewed as an interaction between the individual's internal and external environment. Moreover, he argues that the person's past experiences are major factors in determining his/her response to stress. Also, Wolff suggests a "protective reaction pattern" which refers to a complex reaction of the body to rid itself of stress that threatens its integrity. He noted that the same stress reaction could be initiated by symbolic and/or physical threats. Further, he states that the reaction

pattern is demonstrated in changes in feelings, body processes and behaviour.

Selye (1956), in "The Stress of Life," agrees with both Wolff and Cannon when he defines stress as a "nonspecific response of the body to any demand made upon it" and the body's adaptive responses are activated in an attempt to bring about homeostasis. For example, infection causes the body to produce antibodies which, generally, overcome the infectious organism, thus, homeostasis is effected. Selye believes that the ability to adapt is probably the most unique characteristic of life, insofar as one's ability to adapt allows for the complexities of life, homeostasis and resistance to stress.

An ecological perspective to social work practice, that fits the above positions, is that of The Life Model (Germain, 1979, 1984; Germain & Gitterman, 1980) which centers on three core concepts: adaptedness, stress and coping. This approach views human functioning and development, including wellness and illness, as outcomes of continuous exchanges between the individual, the social environment and the cultural context. The exchanges, therefore, serve as feedback loops or "transactional processes" in which internal and external messages about the outcomes of the transactions are intellectually processed by the person and, thus, shape continuing transactional processes. For example, efforts to cope with the stress of the illness, AIDS, feeds back to influence the PWA's perception of the stressful demands and the efficacy of the coping mechanisms engaged in to meet the demands. The result serves as a guide in future efforts to deal with stress. Also, coping can be enhanced by interventions that facilitate transactions/-

exchanges that promote personal growth in the individual and a more benevolent environment, such as HSF.

In this sense, then, the concept of adaptedness or person-environment fit (Germain, 1984) may be compared with the concept of homeostasis (Cannon, 1935; Selye, 1976). Germain (1984) adds that physiological, cognitive, emotional, social and cultural processes are involved in seeking and maintaining adaptedness. Stress, in contrast to adaptedness, presents a poor person-environment fit and arises when the person makes a conscious or subconscious appraisal of discrepancy between the demand and his/her personal and environmental resources for meeting the demand when it is important to do so. Other writers (Coyne & Lazarus, 1980; Lazarus & Launier, 1978) have distinguished between two basic life demands: harm or loss and threat. Harm or loss refers to past or present damage such as serious illness, injury or disability while threat alludes to the anticipation of inevitable or threatened harm or loss in the future. In this light, the PWA/PTP struggles to cope with matters of harm and loss in the present as well as future threats of harm and loss.

Coping, in the Life Model, also expresses a person-environment relationship and its effectiveness depends on both personal and environmental responses (Germain, 1984). For example, the subjective experience of stress evokes coping responses--the special adaptations called upon to deal with the stressful demands. As stated earlier, these affect all dimensions of the person. For instance, in the case of PTPs/PWAs, the literature previously reviewed acknowledges that physiological disabilities are expressed by fatigue, generalized pain, cancers and lowered resistance to opportunistic infections; likewise, emotions such as

anger, guilt and depression are evident; cognitive or intellectual processes are affected and the result is demonstrated in behaviours such as denial of the diagnosis, blaming the physician for being unable to provide a cure, and suicidal tendencies as well as memory deficits and dementia; social disruptions have also been reported in terms of rejection by significant others including lovers, family members and members of the gay community. And, in consideration of the above, the PWA loses the usual opportunities of his/her developmental stage to be productive which, in turn, affects his/her perception of life's meaning and his/her relationship to God.

The Life Model (Germain, 1979) concepts, therefore, essentially agree with those of HSF (Heimler, 1975, 1985) and palliative care (Kubler-Ross, 1987; Saunders, 1978) in that stress/frustration/helplessness, although part and parcel of the human condition, can be such that the ill person may become overwhelmed; thus, his/her coping ability is undermined. At this time, an intervention, for example HSF, is beneficial to increase the person's self-awareness of internal and external resources/satisfactions/self-discovery and self-acceptance which, in turn, contributes to perceptions of control over his/her life. Moreover, the philosophy of holism permeates the above theories and concepts.

### Holism

The holistic model of health care is not only compatible with concepts and theories integral to HSF, palliative care and life-stress, it also upholds social work and the code of ethics on which social work practice is grounded, namely the dignity, worth and uniqueness of the individual and his/her right to self-determination.

The holistic model has been influenced by Chinese and Indian thought, and by the more recent theories of humanism and existentialism (Gordon, 1980). This approach views the person as a complex whole affected by many variables at any given time. Even though these variables each exert a specific influence, each variable alters the person's relationships with other influential forces. Thus, it is more meaningful to view the client in terms of his/her relationships rather than examine his/her various aspects in isolation. Moreover, holism views the total person as being more than the sum of his/her dimensions or parts.

Five major concepts are accepted premises of holistic health care (Flynn, 1980; Gordon, 1985; Gordon, Jaffe & Bresler, 1984; Pelletier, 1977, 1979). Primarily, each person is considered to be multidimensional; one's physical, emotional, intellectual, social and spiritual dimensions are in constant interaction with each other and with the environment. Therefore, a physical disability such as a compromised immune system has repercussions in all dimensions, as well as in the environmental coping patterns of the individual. Secondly, a person's environment makes a significant contribution to the nature of his/her existence. Thus, the person-environment fit, espoused by Germain (1979, 1984) is a crucial factor in determining the quality of life experience/stress in both wellness and illness. Thirdly, each person experiences growth, development and change across his/her life-span. In each stage of development the individual experiences and confronts different issues. That is, each person progresses through the stages of life, from childhood to old age, with particular needs and issues affecting the person at different times. As well, it is best to keep in mind that growth and development in any one stage affects later stages and

behaviour during the life cycle. Fourthly, stress and adaptation are primary factors affecting the health status. Any dimension may be a source of stress and stress in any one dimension has an impact on the whole person. Therefore, a person's ability to cope with stressful events is a significant factor in that person's experience of wellness and/or illness. Since individuals perceive and respond to stress differently, their various dimensions are affected differently. Consequently, what contributes positively to the health of one person may be detrimental to the health of another.

Lastly, ultimately, the individual is responsible for the directions and lifestyles, including health statuses of wellness and illness, that he/she chooses. That is, each individual is an active participant in the maintenance of an optimal health status. Holism, therefore, does not support the notion that a good health care system makes people healthy (Pelletier, 1979). Each behaviour a person engages in may be seen as a move towards or away from good health.

Several principles evolve from the preceding concepts that are in agreement with HSF, palliative care and life-stress. These are:

1. Each client is viewed as unique and the health status of the client can be meaningfully considered only in the overall context of that person's life. For example, the context within which wellness and illness is respected includes personal, familial, social and cultural influences.
2. Illness may be used as an opportunity, insofar as a person is often able to realize a significant meaning or message in his/her illness and, as a result, experience growth and change. This is also true for persons with terminal illness (Siegal, 1988). A person can cope



with illness with renewed meaning in their lives and higher levels of functioning.

3. The client/practitioner relationship is an integral part of the healing process, therefore, both persons must be willing to pursue self-awareness and self-responsibility. The healing relationship is a partnership rather than a client/practitioner interaction.
4. Emphasis on health care permits the client to use the health care system as a consultant, as opposed to an authority on his/her health status.

The code of ethics for the Canadian Association of Social Workers (Ramsay, [ed.], 1983) states that the profession's philosophy is founded on humanitarian, egalitarian ideals:

Social workers believe in the intrinsic worth and dignity of every human being and are committed to the values of acceptance, self-determination and respect of individuality (p.2, column 3).

This is consistent with the philosophy of holism. Indeed, both philosophies, social work and holism, support psychosocial care that urges:

Helping people develop individual and collective social problem-solving skills; enhancing self-determination and adaptive and developmental capacities of people; advocating, promoting, and acting to obtain a socially just distribution of societal resources; and facilitating social connections between people and their societal resources (Code of Ethics, p.2, column 3).

In conclusion, this chapter examined concepts and theories underlying the proposed treatment model. The principles and practices of HSF and palliative care were compared as well as their relationship to the philosophy of holism as it pertains to health-care. The notion of stress was explored in terms of its contribution to illness and perceptions of

helplessness. Finally, it was posited that these concepts meld well with the social work Code of Ethics.

The next chapter looks at Methodology: the study design, the subjects, the instruments and the procedures.

## CHAPTER FOUR

### METHODOLOGY

In this chapter, concepts are defined and the design is described. The subjects, the agency, the instruments and the procedure are outlined. Lastly, ethical issues and study limitations are considered.

As postulated in the previous chapter, an individual is multidimensional, therefore, measuring any single aspect of a person in the absence of others is difficult; that is, variation in each part of the system results in variation in other aspects of the system. Thus, it is argued that change in social functioning will create change in all aspects of an individual's performance. Moreover, as indicated by the literature on AIDS, PWAs and PTPs are bombarded by stressors/frustrations that undermine their ability to perform well.

With this in mind, the purpose of the following study is to investigate the efficacy of a social work treatment model, HSF, for the psychosocial care of persons that fit category four of the definition for the virus infection status, that is PWAs and persons with AIDS related illnesses. The HSSF will be utilized to examine strengths and weaknesses pertinent to various dimensions of their functioning.

It is hypothesized, therefore, that HSF is an intervention that will cause positive changes at the .05 level of significance, in the psychosocial behaviour of this population, while the null hypothesis states that the no change will occur as a result of the treatment. In this light, then, the target for change is psychosocial functioning. In essence, the independent variable is HSF and the dependent variable is psychosocial functioning.

## Definition of Variables

### Psychosocial Functioning

Psychosocial functioning is defined by the HSSF in terms of measures of satisfaction and frustration perceived by the client in the present. Satisfaction is seen as the person's subjective perception that he/she is making good use of his/her potential, while frustration is regarded as his/her inability to transform his/her potential into satisfactory life experiences. Integral to this position is the idea that, at any given time, there cannot be satisfaction without some frustration nor frustration without some satisfaction. The goal of treatment, therefore, is to seek an acceptable satisfaction/frustration balance. Norms have been developed for the scale that permits a numerical statement of the balance existing between satisfaction and frustration which is referred to as the coping index (Bates, 1988; Coleman, 1984; Pratt, 1987). Thus, the dependent variable is defined by the coping index.

### Human Social Functioning

Before defining the independent variable, it is important to elucidate that clinicians practicing this treatment approach undergo intensive theoretical and experiential training which leads to the authorized use of the HSSF. HSF is a short-term treatment that focuses on activating the individual's wish for self-help (Heimler, 1967; Heimler, 1985). Healing is promoted in the client through the close examination of his/her areas of frustration and satisfaction, which, in turn, puts him/her in a position to implement change aimed at creating an acceptable balance. A protocol has been formulated that suggests an initial interview to determine the client's concerns and goals. If a second interview is required, the scale

is administered to facilitate the identification of frustration/satisfaction areas. Subsequent interviews, using a variety of HSF strategies, address the client's strengths and weaknesses as revealed by the scale and/or related problems until such time that the client feels in command of his/her life.

### Experimental Designs

The traditional extensive analysis research paradigm is the one which is most typical of psychosocial research. This paradigm focuses upon the average performance of aggregates or groups of individuals rather than on the performance of individuals. The investigator randomly selects subjects from a representative population and randomly assigns each subject to a treatment or nontreatment condition, thus, by random selection of subjects, random assignment of subjects to either the treatment group or the control group and by averaging results extraneous or spurious variance is presumed to be controlled. Therefore, the researcher can state with considerable confidence that the treatment caused change or no change.

The fact that the average subject behaves in a certain way does not mean that any one individual subject within that group has actually performed in that fashion (Chassan, 1979). This, then, constitutes a substantial problem in the context of treatment for psychosocial problems experienced by an individual. Indeed, many writers (Barlow, 1981; Barlow & Hersen, 1984; Bloom & Fischer, 1982; Chassan, 1967, 1979; Fischer & Hudson, 1983; Gingerich, 1983; Gottman & Markham, 1978; Greenberg, 1980; Kiesler, 1966; Kazdin, 1982; Safran et al., 1988; Sandell, 1987; Strupp & Hadley, 1973) in the clinical field have commented

on the inadequacy of the traditional research model and recommended that it be replaced or supplemented with intensive analysis procedures.

In contrast, the intensive analysis research paradigm, developed from the case study and refined by behaviouralists, studies the performance of individual subjects in detail by the continuous monitoring of the target problem(s) before, during and following treatment. That is, the researcher "manipulates" the treatment or independent variable in order to study the effects of its removal on the target problem or dependent variable. In this light, the subject serves as his/her own control insofar as his/her measurements recorded before, during and following treatment are compared to observe change (Bloom & Fischer, 1982). It is true, however, that alternative explanations may be offered for the perceived change in the dependent variable other than the effects of the independent variable (Kratockwill, 1978), therefore, controlling for internal validity is essential so that a valid statement may be made with respect to the efficacy of the independent variable. In essence, a treatment is valid to the extent that the researcher is sure that it caused the observed change.

Internal validity is claimed when the researcher controls for extraneous variables such as history, maturation, reactivity, instrumentation, attrition, statistical regression and multiple intervention interference (Bloom & Fischer, 1982; Chassan, 1979; Kazdin, 1980).

As well, design replication supports internal validity and permits guarded statements with respect to external validity (Bloom & Fischer, 1982; Kazdin, 1982). However, some authorities (Bloom, 1983; Edgington, 1984) emphasize that generalizability cannot be claimed if the

randomization concept is excluded from the design. With this caution in mind, the writer considered randomly assigning subjects to varying lengths of treatment but discarded the ideas because of practical and ethical considerations. Other writers (Bloom & Fischer, 1982; Chassan, 1979; Kazdin, 1982) posit that study replication, either direct (same researcher) or systematic (different researchers) that produce similar results over three or more systems is fair proof of external validity.

The characteristics of single system experimental designs that contribute to valid inferential statements include repeated measures of the dependent variables across all phases of the experiment. Phases refer to specific time periods. For example, in the ABA design of this study, phase A refers to the initial time period when baseline data are systematically collected to determine the frequency or intensity of the dependent variable. This should be long enough to demonstrate data stability. Phase B represents the time when the independent variable is introduced while, at the same time, measurement of the dependent variable is continued. The second Phase A refers to a time period when the treatment is withdrawn while monitoring is pursued. Ideally, all phases should be equal. Therefore, valid inferences may be drawn from the observation of variance levels and trends reflected in the repeated measures recorded for all phases.

Careful specification of variables also contribute to valid inferences. That is, detailed specification of all variables that occur, or are likely to occur, during the study is important. For example, definition of the independent and dependent variables, the client and clinician characteristics as well as specific goals and objectives (Bloom & Fischer, 1982). Therefore, it is critical to hold variables constant so that a functional

relationship can be established between the independent and dependent variables. Also, such clear specification of the conditions surrounding the research is important for future replications.

Another noteworthy feature of single-system experimental design is its intrinsic flexibility (Bloom & Fischer, 1982). For example, if the desired positive change is not occurring in response to the treatment, steps may be taken to correct and/or enhance the interventions.

### The Study Design

The proposed method for testing the above hypothesis is that of the experimental single-system design, more specifically, the ABA design. The ABA design is considered experimental in the sense that the independent variable is manipulated (Bloom & Fischer, 1982) and the data records for the phases ABA are considered controls, insofar as variance observed across the phases are compared for differences (Bloom & Fischer, 1982; Chassan, 1979; Kazdin, 1980, 1982). However, the randomization concept, another assumption of experimental designs, is not incorporated in the design because of the nature of the sample.

This design is considered appropriate because it permits the researcher to make cause/effect statements with respect to the independent variable, yet, each subject receives the benefits of the above variable; that is, there are no placebo/control subjects. In addition, the representative population is small, for example, at the time of the study's commencement the population available for recruitment to the study amounted to sixteen. Moreover, many of them were in the final stages of the disease. Therefore, to employ the traditional group/-control design appeared unethical and limited. On the other hand, the



single-system approach enabled the researcher to accept subjects to the study over a period of time; that is, since each subject is a complete system, replication of the study on subsequent subjects could be carried out as they were referred to the researcher. Thus, given the small representative population together with the nature of the subject's health, the single system design is the most appropriate. Furthermore, study replication facilitates qualified statements with respect to generalization.

The ABA design is, also, appropriate because it involves one researcher, there is one major target problem and there is one intervention. For example, inter-observer variance is not a threat to internal validity, and because there is one independent and one dependent variable, the ABA design is the most apt. Additionally, this design is appropriate as it permits the subject to continue with other sources of potential therapy, such as support groups, "buddy" systems, etc. because benefits from these resources would, most likely, be evident in the baseline data. Therefore, change observed in measurements during the B phase, is assumed to be the result of the independent variable. Nevertheless, it is possible that these support systems may enhance the independent variable or vice versa, which, in turn, could result in type I error (Kazdin, 1982). However, it is suggested that baseline data measures the effects of pretreatment psychosocial influences and without the manipulation of the independent variable, the baseline data would remain more or less the same. Therefore, if treatment enhances other therapeutic resources, the enhancement is still the result of the treatment and is, therefore, regarded as change caused by the independent variable.

As well, this design is appropriate because the subject's progression/regression is monitored on a continuous basis which puts the researcher in a position whereby he/she may take steps, at any time, to ensure that the subject is not harmed in any way. Thus, in the final analysis, the single-system approach to research, in particular the ABA design, was chosen because it permitted the study to be combined with ethical and accountable clinical practice. For example, the ethical dilemma of subjecting clients to a questionable course of treatment and/or to the iatrogenic effects of treatment is avoided.

#### Ethical Issues

Since single system design suggests equal phase lengths and the lengths are determined by baseline data stability, which could involve weeks, critical concerns may arise if the initial assessment reveals a crisis situation for the subject. The ethical question is, then, should the researcher continue to collect baseline data or instigate treatment immediately? As well, withdrawal of treatment too soon to fit the phase length may cause ethical concerns. With a view of addressing such issues proactively the study did not make the phases, ABA, equal. It is important to note that the subject's needs were given priority over research design considerations during all phases.

Additionally, ethical considerations, relevant to this study, involve the sensitive nature of the data collected, that is, subjects are requested to provide information of a sensitive and private nature related to their physical, emotional, social, cognitive and spiritual functioning at a very distressful time in their lives.

Therefore, the researcher has taken every possible precaution to ensure that: subject participation was voluntary and no special benefits, except for the treatment, was offered; subjects were free to withdraw from the study at any time without penalties; confidentiality was assured by the assignment of numbers to records, to which only the subject, the researcher and her supervisor had access, a contract (see Appendix B) was drawn up and signed by both subject and researcher which included the above.

#### Limitations of the Study

The major limitation, with respect to this research, is the assumption that data on the target problem will return to baseline levels following the withdrawal of the independent variable. This assumption may be pertinent from a behavioral perspective where the intervention is aimed at specific behavior control for the purpose of prediction, but it is not relevant where intervention focuses on permanent change through a shift in the subject's cognitive processes (Bloom & Fischer, 1982; McCullough, 1984b; Safran et al., 1988). For example, the thrust of HSF is to activate self-help behaviours in the subject. Therefore, more subtle psychosocial variables cannot be controlled by the presence, or absence, of a specific independent variable in the same way that behavioural operants are.

A second limitation of concern, in the study, is the premise that fairly rapid increase/decrease in the target problem is an indicator of treatment efficacy (Bloom & Fischer, 1982). However, in reality, positive change may be slow in this population because of the multiple stressors that invade all their dimensions. The tendency to deny their

diagnosis may affect the data, especially in the baseline phase. Lastly, PWAs in this study may experience opportunistic infections that result in their demise.

A third limitation is that of interactive effects, typical of multiple treatments (Bloom & Fischer, 1982). Although this study involves the administration of one treatment by one clinician, the subjects participate in many other activities such as medically prescribed drug therapy, group therapy, relaxation therapy and visual imagery.

A fourth limitation, that has already been mentioned, is that of randomization. Because of the nature of their illness and the small population, it was impossible and unethical to consider either random selection or assignment.

A fifth limitation lies in the paucity of available statistical analysis tests (Bloom & Fischer, 1982; Kazdin, 1982; Safran, 1988). For example, these authors argue that the traditional statistical tests designed for group studies are not appropriate for the analysis of data pertaining to single systems. Indeed, in the clinical field, there are many differences of opinion among the specialists in this area with respect to statistical and logical considerations for this type of research design (Bloom & Fischer, 1982). For example, some postulate that clinical significance, by way of visual analysis of data, is what is most important while others retort that statistical analysis of data is crucial to be confident in making outcome statements and to prevent the occurrence of type II error. Moreover, Bloom & Fischer (1982) acknowledges that there are not a large body of exemplars available for modelling purposes.

A sixth limitation that must be acknowledged is that of the researcher and clinician being one and the same person. Although some

authorities on intensive research paradigms (Bloom & Fischer, 1982; Kendall, 1982) argue that, in clinical practice, the clinician should also be the researcher in order to avoid the contamination that could arise as a result of personality differences between the researcher and the clinician and differences in opinions with respect to the analysis of data. Nevertheless, Bloom and Fischer (1982) caution that there is always a risk that the researcher, doubling as a clinician, may be, unwittingly, biased in a direction that would confirm his/her hypothesis. To address this limitation, at least partially, the data are statistically analyzed. Also, it is important to point out, as has been noted above, that the administration of this treatment requires authorization and special training, therefore, for practical and economical reasons, the researcher is also the clinician.

Another limitation, relevant to the study, concerns the use of the primary objective measure, HSSF, as both a treatment method and measuring instrument. To address the threats to internal validity that this presents the HSSF was completed on alternate weeks during Phase B when the items indicating the source(s) of frustration became the focus of treatment. During the baseline and withdrawal phases the responses to items were not discussed with the subject.

The last limitation of concern involves the subjects' participation in the study with respect to his/her completing the self-anchored scale daily. Although the subject was asked to complete the scale at a specific time and in a specific manner, the researcher cannot be sure that this occurred and, furthermore, the researcher was not aware of every environmental happening that occurred which could influence change in

the dependent variable, for instance, telephone conversations with friends, family, etc.

### The Subjects

The sample consisted of six males and one female, all of whom volunteered to be in the study. Five were diagnosed as having AIDS and two as having AIDS related illnesses. Their ages ranged from 25 to 39 years, the average being 28.6 years. Subjects were recruited by the support coordinator of AIDS Calgary Agency. Four subjects were unemployed, three were engaged in part-time employment although for one of the subjects this employment was of a volunteer type. All the male subjects contracted the infection as a result of sexual behaviours related to their homosexual orientation. One male was of a bisexual orientation. The female subject contracted the virus as a result of intravenous drug use. The education level of the subjects ranged from grade 10 to post-graduate university-level education. All subjects, except for one, were receiving financial support in the form of AISH (Assured Income for the Severely Handicapped). Furthermore, all subjects participated in support group and buddy system activities, however, some utilized these supports more than others. One male subject had been married but was divorced. Two subjects lived with their lovers in a monogamous relationship while the others were single.

In order to take part in the study, the subjects' health had to permit adequate participation, at least in the beginning. An acceptable health status was defined as a mental health status that did not reflect marked neurological complications such as memory loss, confusion, etc. and a physical health level that permitted the client to make his/her way

to the Agency. For example, he/she was not too sick or disabled by fatigue to travel. The health status was determined by the agency representative who advertised the study through verbal communication with the PWA group and a written notice of the study intent was prominently displayed in the Agency.

A letter from the researcher (Appendix A) and a copy of the contract (Appendix B) was available, in unsealed envelopes, for interested persons. Those wishing to participate contacted the researcher. No remuneration or promises of benefits were offered other than the treatment. Still, subject recruitment presented some difficulties other than their uncertain state of health and the relatively small population from which to recruit. For example, the fear of violation of confidentiality appeared to be a major concern for all potential subjects while others felt that their situation was too hopeless to look for change of any kind. That is, they relied entirely on medical technology for answers that were not forth-coming.

Three subjects did not complete the study. One subject attended the initial interview but did not appear at subsequent interviews due to memory impairment. He has since died. The other two subjects died during the B phase of their program.

### The Agency

The AIDS Calgary Agency's primary mandate is to provide public education and awareness of the disease, its transmission and its prevention. The agency also provides emotional and practical support to people living in Southern Alberta who are directly or indirectly affected by AIDS. It is a non-profit organization whose services, for the most part,

are provided by trained volunteers. For example, since the end of June 1987 to the end of May 1988, the agency has responded, by way of volunteers, to 709 requests for educational presentations on AIDS from various groups within the general public; during AIDS Awareness Week information booths were set up in major public thoroughfares such as City Hall, shopping centres and the university. Support is offered at an individual and group level. For example, trained volunteers act as "buddy-systems" and provide practical and emotional support to PWAs. Three different support groups meet weekly, the PWA group, the PTP group and the Significant Other group. At this time, 183 clients use the agency's services. These consist of PWAs, PTPs and worried persons from the high-risk categories. Also, the agency is developing a library which includes articles, books, audio and video tapes and other publications pertinent to AIDS. Weekly, the agency offers an open house for anyone interested in learning about or doing research on AIDS.

### The Study Instruments

The primary objective measure used in data collection was the HSSF. This is a standardized scale that has well-developed norms for comparison purposes (Heimler, 1975). The HSSF data was supplemented by a subjective measure developed by the researcher.

The HSSF is comprised of 55 questions which are divided into three parts: a satisfaction or positive index, a frustration or negative index and a synthesis scale. The positive index consists of five main life areas: work/interests, financial status in terms of comforts and a sense of security, friendships, family (primary and secondary) and intraper-



sonal. The negative index, also, is comprised of five areas: energy (blockage or paralysis of), health, personal influence, mood and habits. Each area, within both the positive and negative indices, has five related questions that are answered either yes, perhaps, or no (perhaps refers to sometimes, I don't know or I am not sure). These responses are scored four, two or zero respectively. The synthesis scale provides a capsule view of a person's feelings and thoughts of his/her past, present and future life and can be used as a check on the present life situation as evidenced in the positive and negative indices.

The interpretation of the scale reflects the numerical values calculated for the three indices that comprise the scale and the results are compared with norms that are kept updated as a result of ongoing research on the validity and reliability of the scales. The analyses considers the positive/satisfaction mean, the negative/frustration mean, and their relationship to each other, that is, the coping index. The swing within each index is calculated insofar as the existing difference between the yeses and perhaps are compared with the norms. The sum of the synthesis scores is compared with the satisfaction mean to determine a relationship. Extreme scores are examined to assess best and worst functioning levels and, then, each area is further analyzed in detail for specific problems that require immediate attention and recurring themes, related to problem areas, are noted for the purposes of addressing all concerns and needs of the subject.

The choice of this instrument seemed appropriate because it serves as both an assessment tool and as part of the intervention process. It is inevitable that the response to the questions focuses the subject's attention on problem areas which, in turn, facilitates the healing

process. So, in order to make good use of this situation, the HSSF revelations are deliberately used to consolidate self-awareness. For example, the subject may be asked, "what does it mean to you when you say that your life has a meaning of two out of a scale of 1 - 20; or, can you think of ways that would increase life's meaning for you?; or, tell me how you would institute these changes?" It is true, however, that this procedure presents a threat to internal validity but during the baseline phase, when the scale was completed weekly, the subject was asked not to analyze questions for meaning but, instead, to answer them as they felt in the here and now. During the withdrawal phase the same procedure was encouraged.

As well, the 55 questions present a projection of the PWAs unique subjective life-experiences on the physical, emotional, social, cognitive, and spiritual dimensions; that is, it looks at life in its totality. Most importantly, the scale is not threatening to the individual insofar as no secrets are kept from the subject in terms of results and it takes approximately five to seven minutes to complete. Moreover, completing the scale is an exercise that provides the subject with an opportunity to examine how past and present events influence the present and perhaps the future in terms of quality as opposed to quantity of life.

Furthermore, this scale was developed for use with single-systems, therefore, it is considered stable enough for repeated measures, especially if they are not too close in terms of time as is the case in this study. Moreover, all items directly measure the target problem and, because the scale is repeated at reasonable intervals, the risk of boredom, which may cause error, is, also, reduced.

Lastly, the HSSF has demonstrated acceptable validity and reliability; validity coefficients have been reported that range from 0.47 to 0.80 and a reliability range of 0.51 to 0.84 (Griswold, 1977; Rodway, 1977). As noted above, the use of valid, reliable instruments is critical to maintain internal validity in single system experimentation. It is acknowledged that validity and reliability co-efficients of instruments used for repeated measures should, ideally, be greater than 0.80 (Bloom & Fischer, 1982) but, at this time, the number of instruments designed for single-system research is limited, especially instruments related to social functioning. With this limitation in mind, in terms of instrument decay and/or reactivity, this scale was completed on alternate weeks except for the baseline phase when it was done weekly.

The second instrument, alluded to above, was a self-anchored scale that measured intensity of feelings on a scale of 1 to 9, from least to greatest (Appendix C). The selection of these feelings which included anger, guilt, anxiety, sense of independence, feelings of sinfulness, memory changes and extent to which body image has changed, was influenced by psychosocial themes noted in the literature. Some of these items are self-explanatory but others require clarification, that is, anger towards caregivers, guilt and sin. Caregivers include lovers, family members, politicians, the media and health-care professionals. Usually, the subject indicated who caused his/her anger. Guilt refers to remorse with respect to the failure to practice "safer sex" and also for the likelihood that the subject transmitted the infection to others. Sinfulness or the extent to which the subject felt a good person refers to whether he/she feels that AIDS is a punishment for sins.

Self-anchored scales refer to instruments that are constructed for the purpose of measuring the intensity of specific constructs of interest to the researcher or clinician (Bloom & Fischer, 1982). These instruments are self-anchored in the sense that the client anchors the intensity of his/her feelings, experienced in the here and now and records the appropriate number on the scale. These scales, then, are useful subjective measures when objective measures are unavailable (Bloom & Fischer, 1982).

The purpose of devising this scale was to augment, on a daily basis, the findings on HSSF and to measure areas that HSSF did not directly tap.

In addition, as noted above, the choice was influenced by psychosocial themes revealed by the literature, therefore, were based on the best available information. According to Bloom & Fischer (1982) "best information" refers to a measure that provides the most valid, reliable, useful and direct information. Further, Bloom and Fischer (1982) suggest that a customized approach to measurement may get at problems/situations that no other measure can. Lastly, the subject was permitted to take an active part in his/her own evaluation insofar as he/she responded to the questions on a daily basis. Admittedly, this increases the possibility for high reactivity (Bloom & Fischer, 1982; Thomas, 1978); nevertheless, the same scientists argue that the subjective nature of the measure represents the most accurate portrayal of the circumstances, the thoughts and the feelings of that individual. In recognition of its lack of scientific precision and to increase its reliability and validity, as outlined by Bloom and Fischer (1982), the need for honesty

and accuracy was stressed, clear guidelines were given about when and how to record the intensity of the concepts outlined in the scale.

### Procedure

When a volunteer contacted the researcher, expressing an interest in participating in the study, an appointment was set for an interview. During the initial interview the study conditions, outlined in the contract, were thoroughly reviewed and signed by both parties when the subject agreed to be involved in the study. Then, the researcher explained her holistic approach to care and a diagram portraying an individual's multidimensionality was given to the subject (Appendix D). Thus, the need for various professionals, in terms of total care, were acknowledged. Nevertheless, the researcher noted all therapeutic activities in which the subject was engaged and requested that she should be informed if the subject received treatment from a psychiatrist, psychologist, social worker or other clinician during the course of the study. The reasons for the request were explained. In this way threats to internal validity due to history and multiple interventions were considered. Likewise, the underlying structural principles of HSF were explained (see Theory Concepts).

Confidentiality was defined as outlined in the contract. Additionally, permission was sought to inform a significant other, or someone of the subject's choice, should suicidal ideation become a concern requiring intervention beyond the researcher's ability.

Finally, the scales and their purpose were explained after which the HSSF was administered and a week's supply (7) of self-anchored scales were given to the client with specific instructions to complete the scale

at night before retiring and not to reread or think too much about the meaning of the questions. An appointment was set up to meet with the same researcher, at the same time, on the same day and in the same place for the following week; thus, threats to internal validity were considered.

At the beginning of the second interview the HSSF was administered, self-anchored scales collected and more issued, thereafter, the subject was given some time, fifteen to thirty minutes, either to ask questions relevant to the study or to ventilate feelings or thoughts.

Following the administration of the scale on the third interview, the HSF method was applied. Interviews lasted approximately one and one-half hours. After the baseline data were collected, the HSSF was completed on alternate weeks while daily measures of the self-anchored scale continued. Thus, phase A of the study involved two weeks, phase B approximately twelve weeks and phase A, the withdrawal phase, four weeks. The withdrawal phase occurred after mutual agreement on the subject's readiness, by both researcher and subject. During this phase, the subject continued to collect data on a daily basis and the HSSF was completed by the researcher over the telephone, at an appointed time, two weeks later. This choice was mutually agreed upon because it appeared the best route to prevent the withdrawal phase becoming an extension of the B phase. The researcher considered having the subject complete the scale at home, however, this resolution was discarded because of the inconvenience of returning it to the researcher and, moreover, the scale is copyrighted.

On completion of the last Phase A, a terminal interview occurred during which completed scales were collected, the HSSF completed and

subjective views of the study benefits and deficits were discussed. As well, all subjects agreed to contact the researcher for maintenance treatments of HSF when and if they needed it. In this way, then, ethical concerns regarding treatment withdrawal/termination are taken into account.

It is seen, then, that during the procedure every effort was made to consider ethical concerns and internal validity issues of reactivity, history and instrument decay. Other validity threats such as maturation, attrition, statistical regression and multiple treatment effects were not overlooked. For example, maturational effects, in terms of physical change, is not relevant to this sample because the average age was 28.6 years. Besides, the expected physical change is deterioration rather than maturation. However, psychological maturation is expected to occur because the efficacy of the treatment relies on cognitive changes that, in turn, leave lasting behavioral changes. Attrition did occur but this was involuntary, that is, it was not due to low motivation or dissatisfaction with the treatment but with the death of the subjects.

The statistical regression threat is not considered a major issue with this sample because extreme scores are expected due to the nature of their illness, insofar as the multiple stressors experienced by the subjects are not likely to decrease unless effective treatment is initiated. The multiple treatment effect was controlled for inasmuch as no new treatment activity was commenced after the study began. For example, all the subjects were receiving medical attention, all attended a support group and all had a "buddy" support person in progress prior to the commencement of the study. Therefore, change in measure should reflect, for the most part, the HSF outcome.

In conclusion, this chapter focused on the methodology of the study. The research question was restated and the major concepts were defined. The design was outlined, the subjects and instruments were described and the procedure was drafted. The next chapter will address the results of the study.



## CHAPTER FIVE

### RESULTS

#### Analysis and Evaluation of Results

This chapter presents the data analysis for each of the seven subjects in the sample. The interpretation of the HSSF (Heimler, 1975) is summarized, HSSF scores are graphed for the purpose of clinical and statistical analyses. Likewise, the self-anchored scales are analyzed visually and statistically for significance. Table 1 describes the relevant characteristics of the subjects in terms of referral source, age, sex, education, marital, employment and economic status, mode of disease transmission, diagnosis, drug treatment for AIDS, presence of support systems and, finally, where the HSF treatment was given. This table serves as both a guide for the purpose of replication and for demonstrating the homogeneity of the sample.

TABLE I  
DEMOGRAPHIC DATA OF SAMPLE

#	RECRUITED BY	AGE	SEX	EDUC. LEVEL	MARITAL STATUS	MODE OF TRANS.	EMPLOYM. STATUS	ECONOM. STATUS	DIAGNOSIS	DRUG TREATM.	SUPPORT SYSTEMS	HSF SETTING
1	AIDS Calgary	39	M	grade 12	divor.	bisexual behav.	unemp.	AIDS	AIDS related illness	experim. drug for AIDS	psychiat. 2 buddies support group	agency hosp.
2	AIDS Calgary	32	F	univ. post-grad. level	single	IV drugs use	part-time	salary	AIDS	experim. drug for AIDS	buddy A.A. group PWA	agency hosp.
3	AIDS Calgary	24	M	some univ. credits	single	homo-sexual behav.	part-time	salary AISH	AIDS	experim. drug for AIDS	buddy parents	agency U of C
4	AIDS Calgary	24	M	3 years univ.	single	homo-sexual behav.	part-time vol.	AISH	AIDS	experim. drug for AIDS	buddy PWA group	agency hosp.
5	AIDS Calgary	29	M	grade 12 plus tech. dip.	monog. rel.	homo-sexual behav.	unemp.	AISH	AIDS	experim. drug for AIDS	partner PWA group	agency
6	AIDS Calgary	29	M	grade 10 plus job trained	monog. relat.	homo-sexual behav.	unemp.	AISH	AIDS	no	partner PWA group	agency
7	AIDS Calgary	23	M	grade 10	single	homo-sexual behav.	unemp.	AISH	AIDS related disease	no	PWA group	agency

### Profile for Subject #1

#### Personal data.

This relatively well-nourished 39-year-old man looks younger than his years and represents the only bisexually oriented subject in the study. He is divorced and is the father of two children whom he sees regularly although they were in foster care at his entry to the study. This subject also represents one of the two cases in the study that have been diagnosed as having AIDS-related illnesses. He participates in an experimental drug research program on AIDS. He is unemployed and receives a government pension for the handicapped (AISH). He has completed a grade 10 education level. He attends the PWA support group weekly, he has two buddies and sees a psychiatrist every two weeks. He was referred by AIDS Calgary and interviews took place in the agency except for when he was hospitalized. He contracted the disease through homosexual behaviours.

### Analysis of the HSSF

#### Phase A (Baseline).

The baseline data is transformed to obtain a mean of means for the purpose of conducting a summary analysis using the Heimler interpretation format. In comparing the data with those of the norms it is seen that this subject's satisfaction level is just below the borderline that suggests good functioning while the frustration index upholds this position. The coping index suggests that this subject could benefit from counselling or other form of support. The swing within both the positive and negative indices suggests that this subject is experiencing

greater uncertainty than what is expected in terms of the sources of both his satisfactions and frustrations.

In addition, during the times of his best functioning levels of satisfaction and frustration are such that this subject manages his life well, that is, in absence of evidence to the contrary. However, at times of his worst levels of functioning he would benefit from counselling or some other form of support.

The synthesis scale suggests a very optimistic outlook on life, however, when viewed in relation to the mean of the positive index, it is seen that this outlook is overly optimistic if not unrealistic. Overall, then, it is assumed that this subject would benefit from HSF counselling.

#### Phase B.

In light of the deterioration in scores obtained during the fourth interview (second treatment) a brief interpretation of the scale is justified. Perceptions of satisfaction are now overwhelmed by those of frustration. Satisfaction is within a range which indicates that the person is in need of intensive treatment and, perhaps, residential care. Frustration levels support this position and the coping index reveals his score to be in the range seen in psychiatric patients. It is also noteworthy that the synthesis measures dropped too, but are within a range that suggests, in terms of its relationship to levels of satisfaction, the subject is now in touch with reality. Based on the information obtained from the scale and the subject's request (see conditions of the contract) a staff member of the Agency contacted his psychiatrist who admitted him to a psychiatric unit of a general hospital for observation mainly because of indications of serious suicidal ideation. No new treatments

were prescribed and the subject was discharged after three weeks at his own request and with his psychiatrist's permission.

A brief summary of the last measures in Phase B suggests that this subject has adequate satisfaction and frustration for good functioning and the coping index supports this position. His outlook in life remains very optimistic but, viewed in relation to the satisfaction mean, he appears to be in touch with reality. Further, HSSF outcomes for the withdrawal phase indicate that this situation is maintained. Therefore, overall, the interpretation suggests that the independent variable caused some change (see Appendix E-1/Profile #1 for further analysis).

#### Visual Analysis

An inspection of the baseline phase (Figure A-1) reveals an increasing trend in the synthesis scores which suggest improvement is occurring. The satisfaction measures decrease somewhat in the second entry but show a noticeable increase in the last entry for this phase. Again, the trend suggests improvement. The measures representing frustration show a marked decreasing trend which supports the suggestion that improvement is occurring from the first contact.

The first records in Phase B (which should have occurred the following week but, due to the decline in the subject's psychosocial health, was completed before application of the second treatment) reveal that perceptions of frustration have increased sharply while those of satisfaction and outlook of life plunge alarmingly.

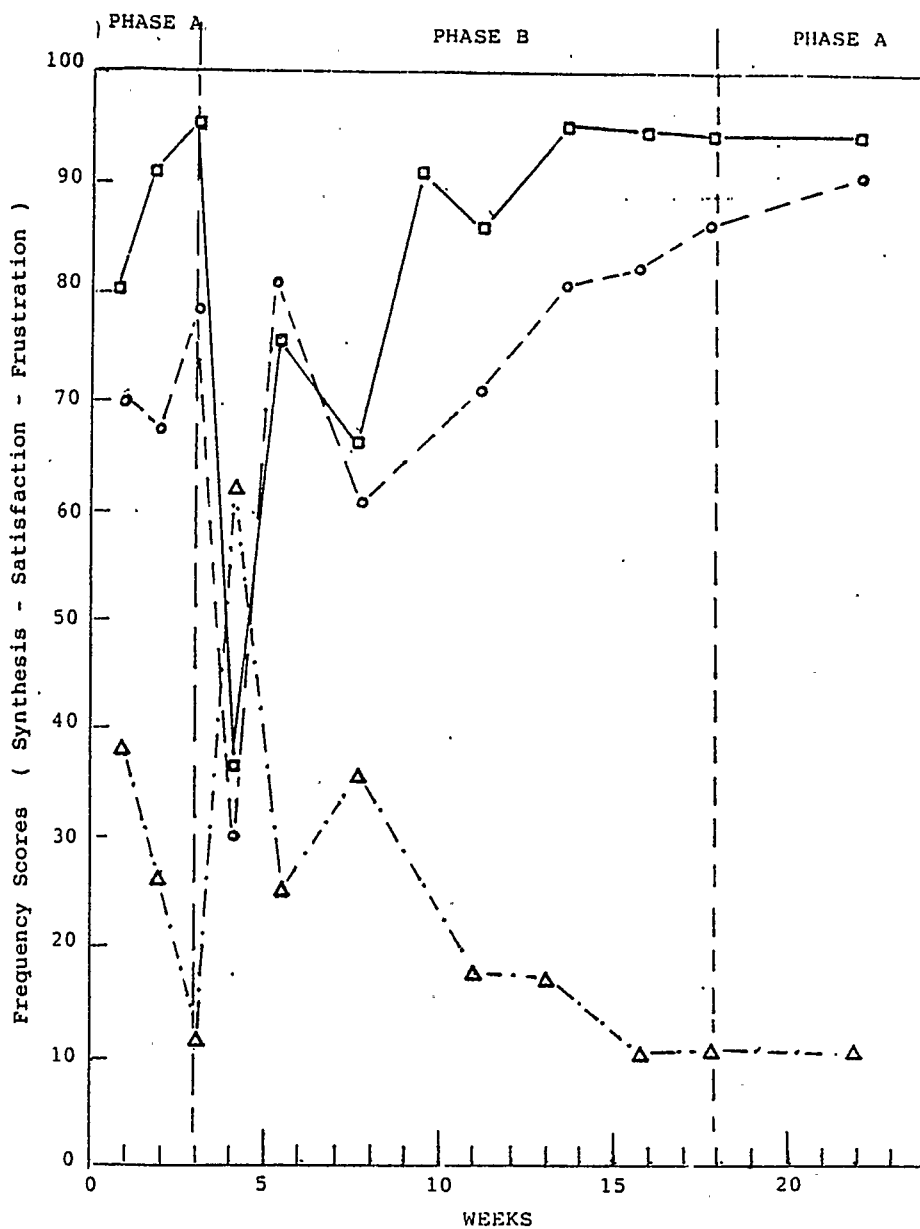


Figure A-1 Graph showing the extent of the subject's perceptions of satisfaction, frustration and synthesis across phases A, B and A.

LEGEND  
 □: Synthesis  
 ○: Satisfaction  
 △: Frustration

This immediate and marked change, then, suggests that the treatment has caused deterioration of the subject's functioning. But, subsequent measures of both satisfaction and synthesis scores show noticeably

increasing trends in the desired direction which is maintained when treatment is withdrawn. At the same time frustration scores drop and continue to do so, except for one score, until they stabilize in the zone that suggests good functioning in the absence of evidence to the contrary. Further, this position is maintained during the withdrawal phase.

The visual analysis of the data, therefore, presents difficulties in determining the efficacy of the independent variable because baseline data suggests that the desired outcome is already in progress before treatment initiation. Therefore, with the goal of addressing type II error and examining the data for significance, a statistical analysis is conducted.

#### Statistical Analysis.

Statistical analysis of the dependent variable (Figure B-1) utilizing the Proportion/Frequency method (see Appendix G-1 for test description and justification of its use) indicates that a statistically significant change occurred at the .05 level of probability as a result of the application of the independent variable.

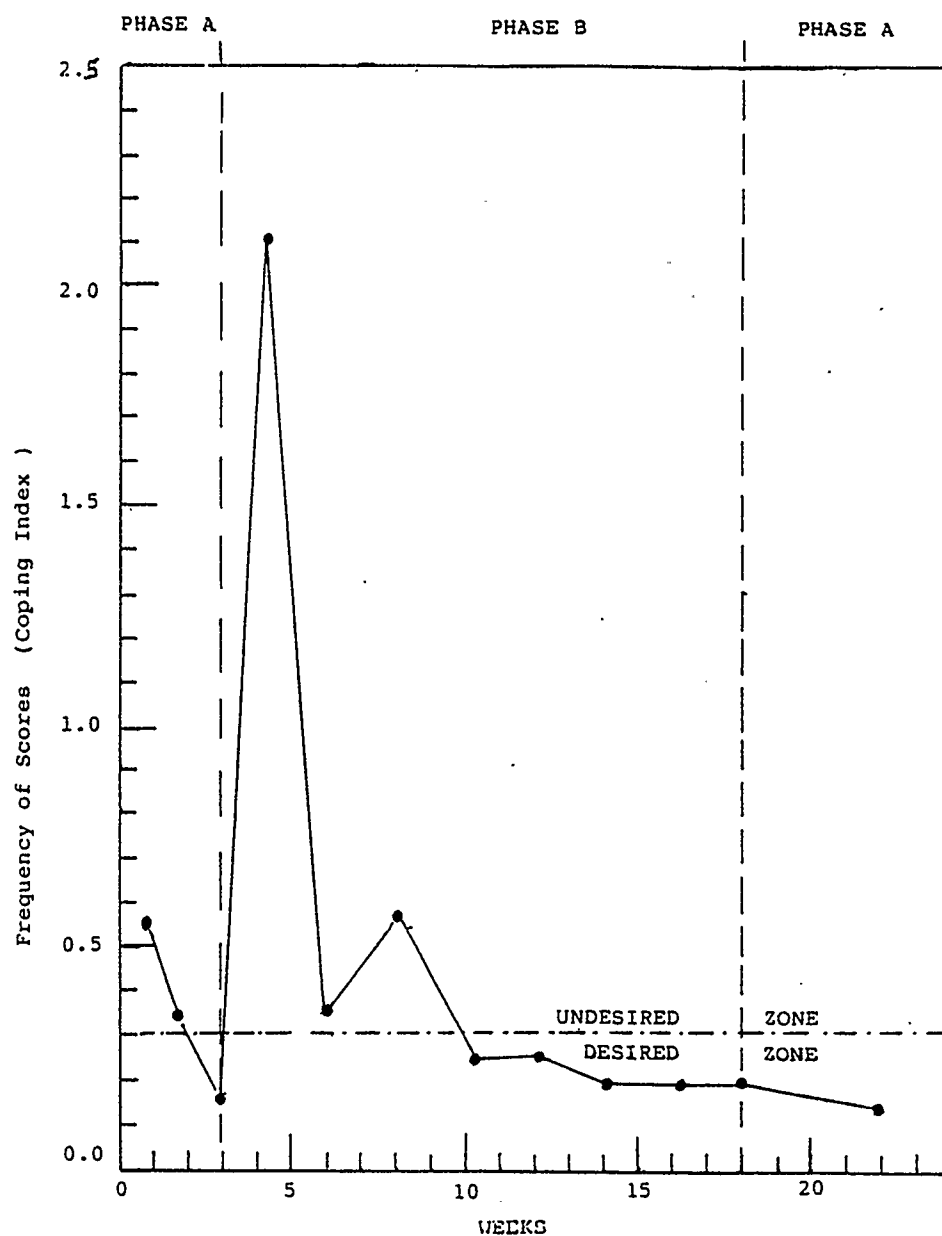


Fig. B-1 Graph showing the proportion/frequency approach: the desired and undesired zones.

### Analysis of the Self-Anchored Scale

#### Visual Analysis.

Figure C-1 shows the computerized, graphic representation of the data obtained from the self-anchored scale for the subject. The items



remain in the same numerical order as is seen in the scale (Appendix C), however, their verbal descriptions are reduced for reproduction convenience. Thus, "extent of anger towards physicians" becomes "anger-1" and is situated in the top panel, "extent of anger towards

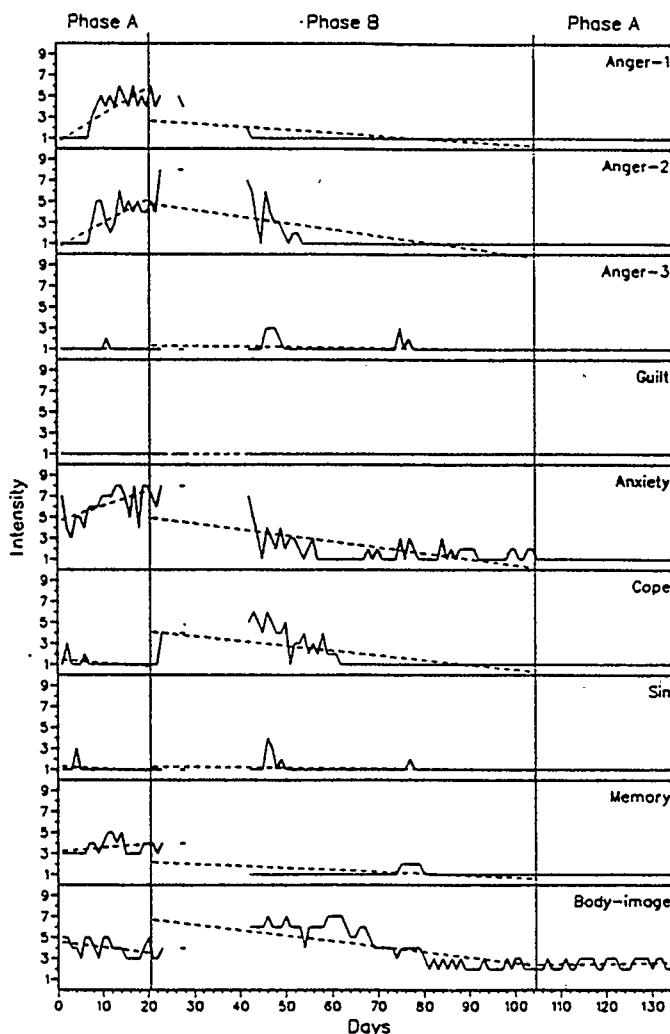


Fig. C - 1 Graphic illustration of the daily data obtained from the self-anchored scale. The interrupted lines represent the levels/trends occurring across the phases.

caregivers" is renamed "anger-2" and is in the second panel from the top. This order continues to panel 6 where the item "extent to which you feel independent" is changed to the word "cope" and panel 7 contains an abbreviated form for item seven in the scale. That is, "extent

to which you feel a good person" is changed to the word "sin." The order is maintained in this manner until the ninth or final item corresponds to the ninth or bottom panel in Figure C-1. The interrupted line denoting the magnitude and/or rate is the "line of best fit." The technique used is linear regression by the method of least squares (Weinberg & Schumaker, 1974). This format is maintained for all subjects.

#### Phase A (Baseline).

Visual analyses of the data for anger-1, anger-2 and anxiety show that a marked increasing trend is occurring in this phase. The interrupted line demonstrates the direction and boldness of the slope. The data for memory also shows an increasing trend but it is not so pronounced. The data recorded for anger-3, cope and sin, show very little variation while that of guilt suggests that this item is irrelevant for this subject. In addition, scores for items anger-3, cope and sin are low indicating these are not problematic for this phase. The data for body image shows an overall variance that tends towards a slight decreasing trend as is evidenced by the direction of the interrupted line.

#### Phase B.

In the beginning of this phase, the deteriorating trend continues in the data recorded for anger-1, anger-2, anxiety and memory, while data for anger-3, guilt, sin and body image remain approximately the same. This is followed by a period for which no data are recorded and this corresponds to the time when the subject was hospitalized. Overall, the data for the remainder of this phase, for the items of concern

(anger-1, anger-2, anxiety and memory) indicate that a decreasing trend occurs until it stabilizes and this stability is maintained during the second Phase A. It is noteworthy that the data for "cope" and "body image" show a noticeable increase when data recordings reoccur in Phase B and then decrease again until stabilizations occurs at a score low enough to indicate that the problem is minimal. Moreover, this position continues during the withdrawal phase.

To summarize, visual analysis of variance occurring between Phases A and B suggests that change in the desired direction occurred for the items that were viewed as problematic because their scores indicated greater intensity which showed an increasing trend during baseline recordings. This trend, however, reversed in Phase B. Although this is in agreement with the HSSF findings, definite conclusions cannot be drawn because data was not entered consistently during Phase B.

#### Statistical Analysis.

The autocorrelation tests (Box & Jenkins, cited in SPSSX User Guide, 1986) were conducted on all relevant items (see Appendix H-1) and the data were found to be independent except for the first three lags in anger-1 and the first lag in anger-2. Therefore, the assumption that data must be independent before statistical significance tests are conducted is met. The t-test statistic was applied to the data to determine whether a significant difference exists between the means of Phases A and B and Phases A and A. The results (Figure D-1), which compare Phases A and B indicate that a significant difference (greater than the preset probability level of .05) is obtained for anger-1,

anger-2, anxiety, cope and memory while a significant difference was not obtained for anger-3, guilt, sin and body M (body image).

GROUP 1 - GROUP		EQ	1.				
GROUP 2 - GROUP		EQ	2.				
SEPARATE VARIANCE ESTIMATE							
VARIABLE		NUMBER OF CASES	MEAN	STANDARD DEVIATION	T VALUE	DEGREES OF FREEDOM	1-TAIL PROB.
-----							
ANGER1							
	GROUP 1	20	3.3000	1.867			
	GROUP 2	68	1.2941	1.023	4.61	22.46	0.000
-----							
ANGER2							
	GROUP 1	20	3.0000	1.747			
	GROUP 2	68	1.8235	1.876	2.60	33.00	0.007
-----							
ANGER3							
	GROUP 1	20	1.0500	0.224			
	GROUP 2	68	1.1471	0.497	-1.24	71.47	0.10
-----							
GUILT							
	GROUP 1	20	1.0000	0.000			
	GROUP 2	68	1.0000	0.000	0.00	0.00	.5
-----							
ANXIETY							
	GROUP 1	20	6.1500	1.599			
	GROUP 2	68	2.1765	1.860	9.40	35.55	0.000
-----							
COPE							
	GROUP 1	20	1.1500	0.489			
	GROUP 2	68	1.8971	1.488	-3.54	84.86	0.001
-----							
SIN							
	GROUP 1	20	1.1000	0.447			
	GROUP 2	68	1.1029	0.462	-0.03	31.89	0.49
-----							
MEMORY							
	GROUP 1	20	3.6000	0.754			
	GROUP 2	68	1.2794	0.770	12.04	31.59	0.000
-----							
BODYM							
	GROUP 1	20	4.0500	0.826			
	GROUP 2	68	4.1618	1.724	-0.40	57.52	0.34

Figure D-1 The t-test results where group 1 refers to phase A and group 2 to phase B.

In comparing the means of baseline and withdrawal phases (Figure E-1) the t-tests support the position that the significant differences obtained as a result of treatment have been maintained except for cope.

GROUP 1 - GROUP	EQ	1.				
GROUP 2 - GROUP	E2	3.				
SEPARATE VARIANCE ESTIMATE						
VARIABLE	NUMBER OF CASES	MEAN	STANDARD DEVIATION	T VALUE	DEGREES OF FREEDOM	1-TAIL PROB.
-----						
ANGER1						
GROUP 1	20	3.3000	1.867	5.51	19.00	0.000
GROUP 2	31	1.0000	0.000			
-----						
ANGER2						
GROUP 1	20	3.0000	1.747	5.12	19.00	0.000
GROUP 2	31	1.0000	0.000			
-----						
ANGER3						
GROUP 1	20	1.0500	0.224	1.00	19.00	0.160
GROUP 2	31	1.0000	0.000			
-----						
GUILT						
GROUP 1	20	1.0000	0.000	0.00	0.00	1.000
GROUP 2	31	1.0000	0.000			
-----						
ANXIETY						
GROUP 1	20	6.1500	1.599	14.41	19.00	0.000
GROUP 2	31	1.0000	0.000			
-----						
COPE						
GROUP 1	20	1.1500	0.489	1.37	19.00	0.09
GROUP 2	31	1.0000	0.000			
-----						
SIN						
GROUP 1	20	1.1000	0.447	1.00	19.00	0.16
GROUP 2	31	1.0000	0.000			
-----						
MEMORY						
GROUP 1	20	3.6000	0.754	15.42	19.00	0.000
GROUP 2	31	1.0000	0.000			
-----						
BODYM						
GROUP 1	20	4.0500	0.826	7.61	28.35	0.000
GROUP 2	31	2.4839	0.508			

Figure E-1 The t-test results where group 1 refers to phase A and group 2 to withdrawal phase A.

### Subjective Evaluation

This subject felt that the treatment helped him to understand himself and to motivate him in seeking his life's ambition. The subject's progress was confirmed by his physician (AIDS Specialist) who commented on the subject's increased confidence in his coping ability. It is posited, therefore, through the visual and statistical analyses of data over the phases that positive change occurred at a statistically significant level.

### Profile of Subject #2

#### Personal data.

This single, 32-year-old, part-time employed woman represents the only female in the sample. She differs, also, in that she contracted the virus through intravenous drug abuse while the other subjects contracted the disease through sexual behaviours. As well, she had completed post-graduate education at the university level while the others had not. She was receiving experimental drug treatment for AIDS. She had a buddy and attended the PWA support group. She was not receiving any income other than from her part-time work. At the time of entry to this study, the subject was newly diagnosed as having AIDS. The negative health symptoms she experienced were considered to be related to drug withdrawal symptoms. She had stopped taking drugs approximately three months before through the assistance of an Alcoholics Anonymous (AA) program and she was still actively engaged in group activities. She was referred to the study by AIDS Calgary Agency. Treatment was applied in the agency and in hospital.

### HSSF Interpretation

#### Phase A (Baseline).

A summary analysis of the data, according to the Heimler model, indicates that there is not enough satisfaction in this subject's life to cope well and this is exacerbated by unusually high levels of frustration. The balance suggests an overload of frustration; for example, according to the established norms a mean negative score greater than 30 percent of the mean satisfaction score indicates a crisis situation. Moreover, she is uncertain of the sources of satisfaction in her life. On

the other hand, her perception of frustrations in her life is at a level which indicates that she is very sure as to the sources of her frustrations.

The synthesis index reveals a very pessimistic global outlook which, viewed in relation to her perceptions of satisfactions, indicates that she is in touch with reality. Additionally, even at times of her best levels of functioning, her satisfaction/frustration balance reveals that she is experiencing frustration overload. In essence, according to the HSSF, this subject requires intensive psychosocial support, therefore, treatment was introduced after completion of the scale during the second interview instead of the third. (See Appendix E-2, Profile #2 for further analysis.)

#### Visual Analysis.

Satisfaction, frustration and synthesis scores (Figure A-2) show that baseline scores do not vary greatly, however, a marked deterioration occurs in the third week, Phase B, which coincides with the subject's admission to hospital and commencement of an experimental drug treatment regime for AIDS. The next scores, delayed for three weeks due to poor physical health and during which time HSF was maintained for half-hourly sessions three times a week, shows that perceptions of satisfaction have increased somewhat while those of frustration have decreased noticeably and the synthesis, or global view of life, has increased sharply. Scores for two weeks later show similar measures. Although the first scores in Phase B reveal a marked deterioration and one set of measures are missing, the general data trend suggests a significant change in the direction expected.



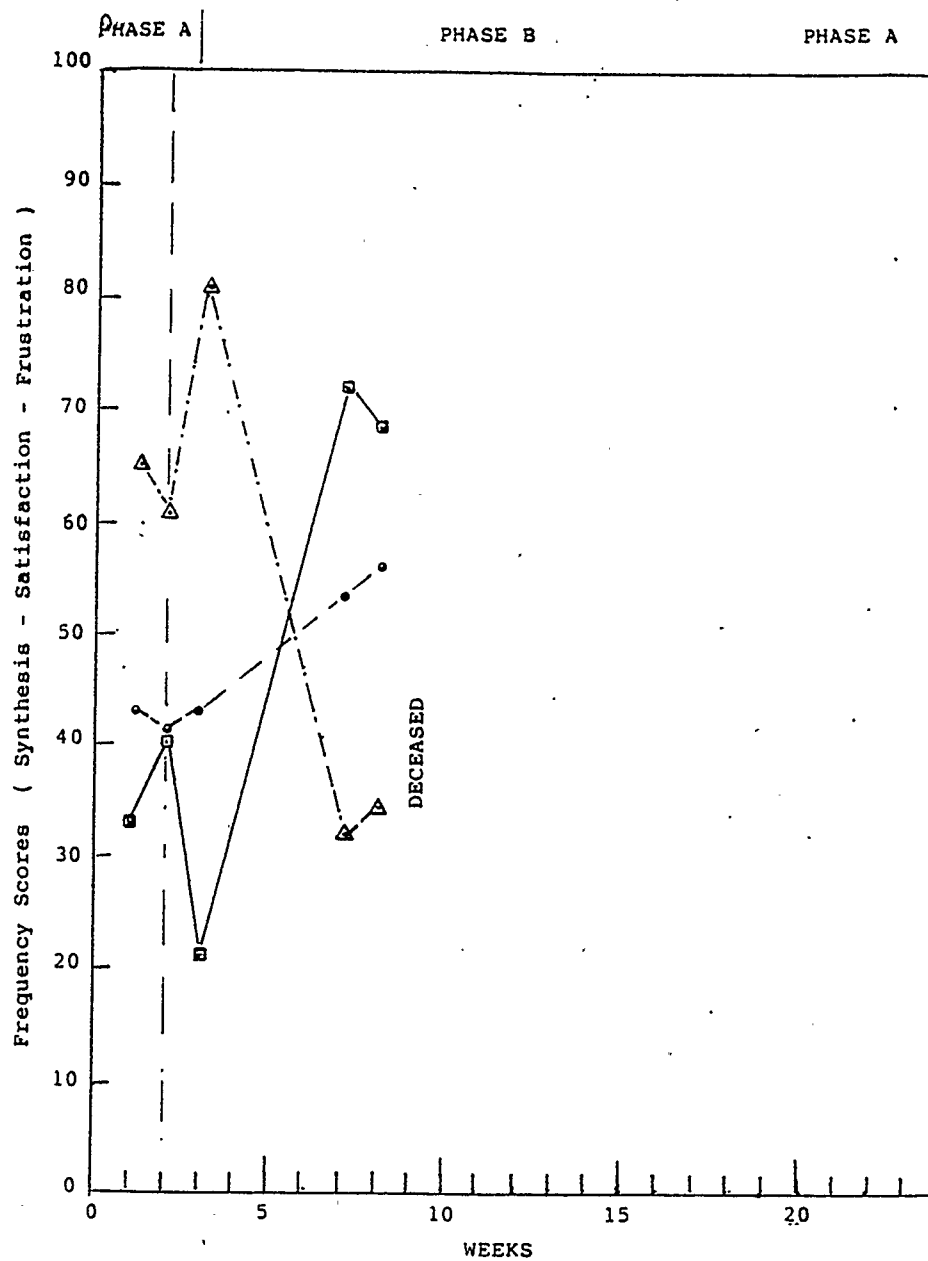


Figure A-2 Graph showing the extent of the subject's perceptions of satisfaction, frustration and synthesis across phases A, B and A.

LEGEND  
 □: Synthesis  
 ○: Satisfaction  
 △: Frustration.

### Statistical Analysis.

Statistical analysis was performed on the coping index (Figure B-2) which reflects the satisfaction/frustration balance; that is, the dependent variable.

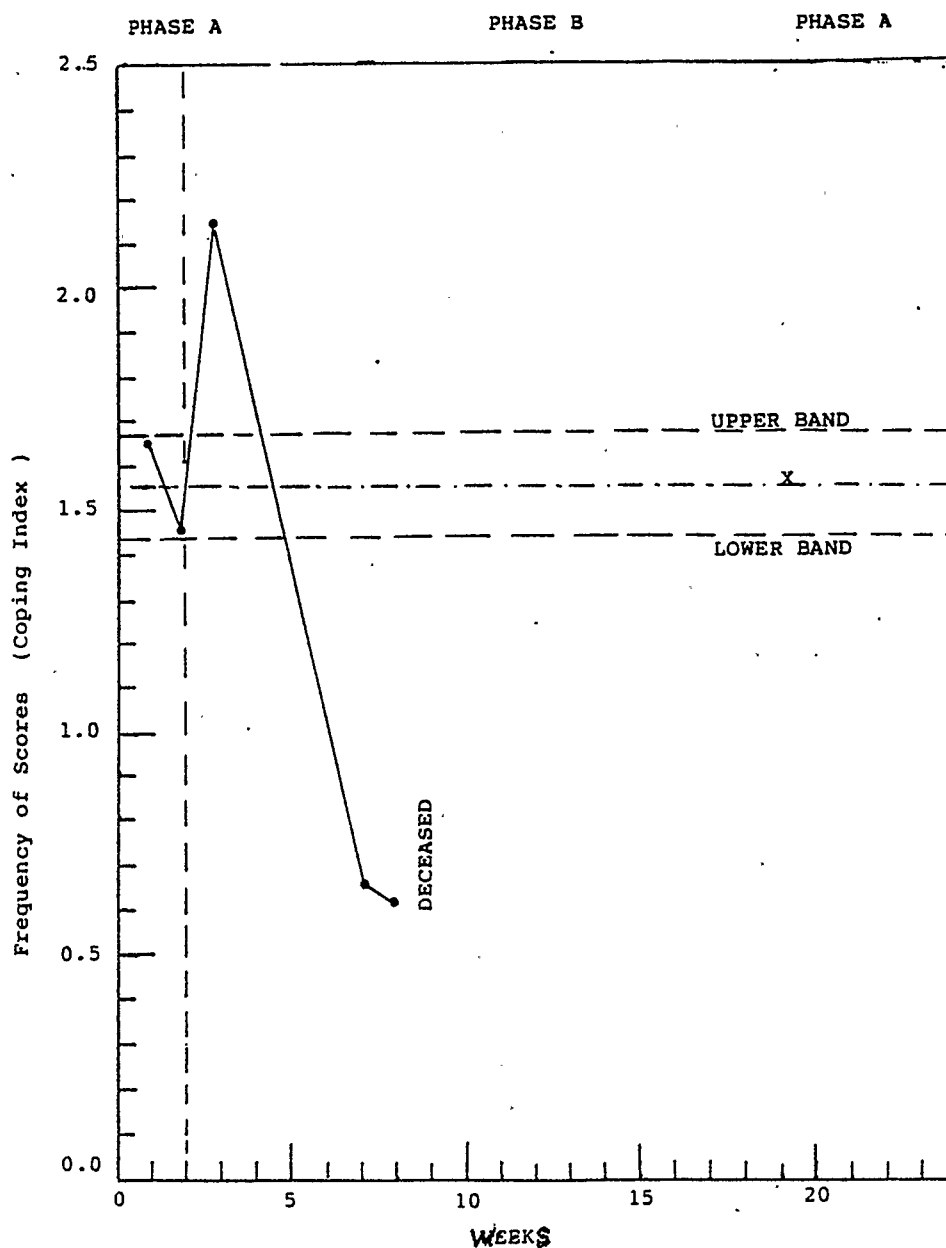


Figure B-2 Graph showing the two standard deviation bands above and below the mean (The Shewart Chart)

The two-standard deviation band approach (Shewart, 1931 cited by Bloom & Fischer, 1982) was calculated (Appendix F-2) and the results suggest that change in the desired direction is statistically significant at the 0.05 level. (For a description of the Shewart chart and reasons for the choice, see Appendix G-2.)

Although visual and statistical analyses suggest that the HSF was effective, it must be stressed that all phases were not complete and that Phase A had only two data points, therefore, it was impossible to check for data independence, an assumption of this approach.

#### Analysis of the Self-Anchored Scale

##### Visual Analysis.

##### Phase A (Baseline).

Inspection of data (Figure C-2) recorded for all items of this scale, with one exception, reveal high score levels. This indicates that the subject is experiencing considerable stress as a result of the intensity of her feelings with respect to the items. Moreover, the trend, indicated by the interrupted line, is increasing in the direction which reflects a heightening of the intensity of her feeling. The exception refers to the memory item for which there are no records because this item did not apply to the subject at that time.

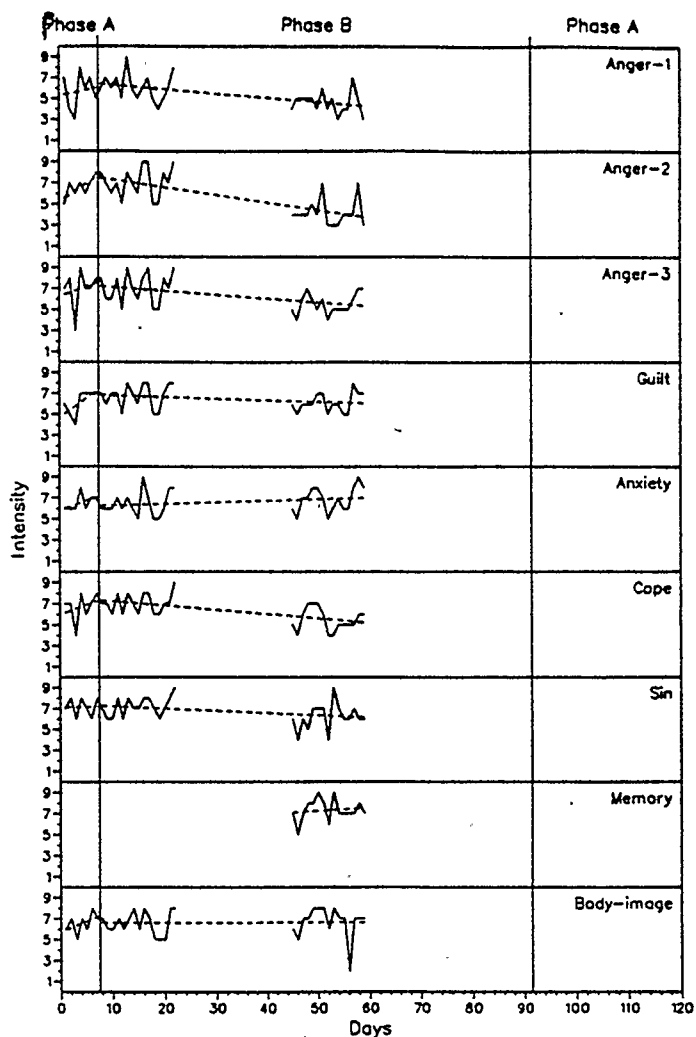


Fig. C-2 Graphic illustration of the daily data obtained from the self-anchored scale. The interrupted lines represent the levels/trends occurring across the phases.

#### Phase B.

Although the data are incomplete for this phase, and overall, the scores remain high, the line indicating the slope of the data suggests that desired change is occurring in all items except for anxiety and body-image. Anxiety shows an increasing trend but the slope of the line is less than what is noted in the baseline; that is, a shift in magnitude is noted. The data for body image reveal a leveling, however, the

high score indicates that the subject is very concerned about her body image. It is noted that in Phase B the subject starts to record data for memory. This indicates that the subject did not perceive any change in her memory until after she was admitted to hospital for treatment of opportunistic infections.

In summary, visual analysis indicates that slight change occurred in the desired direction following the application of treatment in most of the items. However, the fact that her memory is seen to deteriorate, her level of anxiety to increase and her body image to remain a major source of concern, no definite conclusion can be drawn with respect to visual analysis alone. Further, statistical analysis was not conducted on the data because, due to incomplete data and phases, results would be erroneous.

#### Subjective Evaluation

At the end of each interview, subjects were asked for their subjective opinion with respect to the treatment. This subject felt that the treatment helped her to get to know and to accept herself. In turn, she became more accepting of others and, overall, she felt more in control of her very stressful situation. Thus, the positive HSSF results are supported by the consumer's opinion.

### Profile for Subject #3

#### Personal Data.

This subject presented as a very slim, tired-looking and sad young man who contracted AIDS as a result of sexual behaviours related to his homosexual orientation. He first learned, eight months before, that he had the HIV when he was admitted to hospital suffering from a type of pneumonia which is recognized as "an indicator disease" of full-blown AIDS. This subject did not participate in support groups because he found them "depressing." However, he had a "buddy" with whom he felt comfortable except for issues pertaining to confidentiality. In addition, he had a very supportive family, supportive to the extent that the subject felt overly protected. Interviews occurred in The University of Calgary except for the first three interviews which took place at the agency. The reason for the change of location was because the subject perceived that the agency violated his confidentiality. Also, this subject is self-employed on a part-time basis to supplement his governmental pension for the handicapped (AISH). He is receiving an experimental drug treatment for AIDS.

### Analysis of the HSSF

#### Phase A (Baseline).

A summary analysis of the mean, according to established norms (Heimler, 1975), indicates that satisfaction levels are such that this subject would definitely benefit from professional counselling as scores, although at the upper border, fall into that category. Levels of frustration support the proposition that counselling is indicated because these levels exceed the expected levels suggested by the norms, for

satisfactory functioning. The Coping Index, or the Satisfaction//Frustration Balance suggests that this subject falls in a category level that requires counselling or other form of support. In addition, the level of uncertainty experienced by this subject, with respect to his perceptions of sources of satisfaction and frustration, extend well beyond the norms.

The synthesis scales, however, suggests a very optimistic outlook on life. But, when viewed in relation to the satisfaction scale, this outlook is unrealistic. Even at his best levels of functioning, this subject would benefit from support of some kind while during his worst levels of functioning the coping index suggests that intensive counselling, if not residential care, is required. In the final analysis, the HSSF interpretation of baseline measures reveals that this subject is definitely in need of counselling.

For the purpose of comparison, a Heimler interpretation of the HSSF scores during the second Phase A suggests that levels of satisfaction remain in the category requiring support, however, the score is in the upper range. Perceptions of frustration, on the other hand, are at levels low enough to permit good functioning. The coping index supports this position by revealing a level that presents adequate coping in the absence of evidence to the contrary. Although levels of uncertainty remain greater than the norms for satisfactory functioning they are borderline.

The synthesis index shows a little greater perception of optimism regarding his global outlook on life, but, in contrast to baseline measures, the synthesis is within a normal range with regard to its relation to the satisfaction index which suggests that this subject is now in touch with reality. Moreover, at his best levels of functioning he

experiences a lot of satisfaction and very little frustration. Indeed, his coping index indicates that he is coping well in the absence of evidence to the contrary. At times, when his functioning level is at his worst, his perceptions of satisfactions are such that support of some sort is beneficial. However, the frustration level is within the expected range for good social functioning. The coping index shows that he needs counselling or some other form of support. Therefore, according to the HSSF interpretation, the HSF treatment caused positive change (see Appendix E-3, Profile #3, for further analysis).

#### Visual Analysis.

Visual inspection of the data (Figure A-3), recorded for the baseline phase, show some variation in synthesis, satisfaction and frustration scores but no marked fluctuations. The synthesis scores show an increasing trend while the satisfaction data entries show a decreasing trend. Although the frustration score decreases for the second data point, it remains unchanged for the third entry.

During Phase B, a general inspection of the data shows a change in scores for the three variables. The synthesis, already at optimistic levels, shows an immediate increase after the first administration of treatment, then a leveling off occurs and is maintained until the termination of the study. Likewise, the first data entry for satisfaction, following treatment initiation, shows a change from a decreasing to an increasing trend in the desired direction and this trend continues except for the fifth week of treatment when there is a decrease to a level seen in the baseline phase. Scores related to frustration show a marked decrease immediately after the application of treatment which is followed



by another marked decrease which, thereafter, levels off in the zone of the expected range of scores associated with satisfactory levels of functioning.

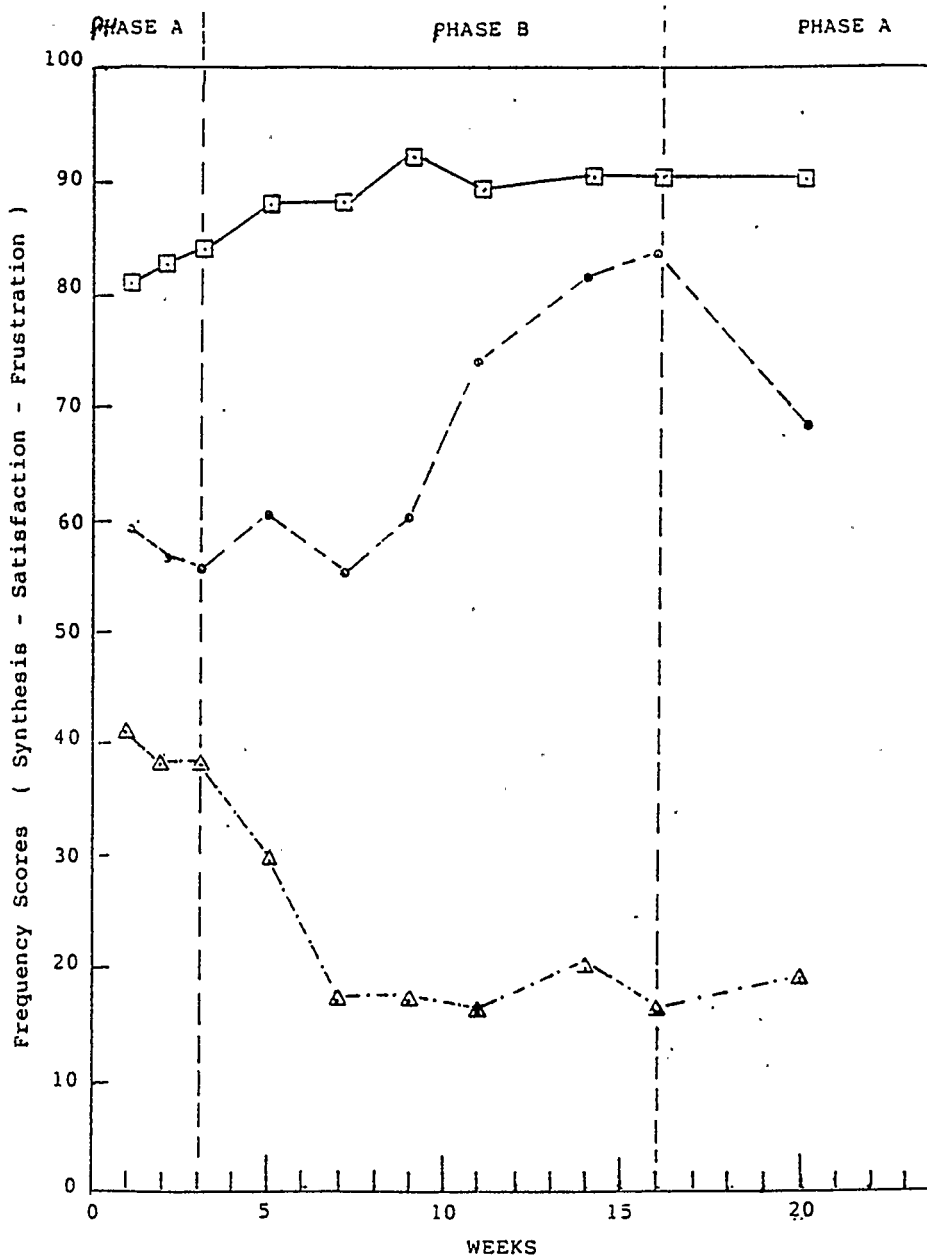


Figure A-3 Graph showing the extent of the subject's perceptions of satisfaction, frustration and synthesis across phases A, B and A.

LEGEND  
 □: Synthesis  
 ○: Satisfaction  
 △: Frustration.

The last Phase A, or the withdrawal phase, has one entry instead of two because the subject was out of town. Overall, this phase shows that some change has occurred in two variables while the third, the synthesis, remains the same. The synthesis score which reflects a global perspective of the subjects life is, and has been, at levels which suggest optimism. The satisfaction score has decreased noticeably while the frustration score increases slightly. Therefore, although the scores did not return to baseline levels, which was not expected in light of the nature of the treatment, this phase does reflect a slight deterioration of the dependent variable. Therefore, it may be stated that the independent variable has some effect because, when withdrawn, a change in trend is noted (Bloom & Fischer, 1982; Kazdin, 1980).

A summary of the visual analysis, then, indicates that clinical significance (Bloom & Fischer, 1982) of treatment efficacy has occurred because in comparing data recorded across the phases it is noted that the level between Phases ABA changes, the change occurs immediately in the B and A Phase and the observed change in Phase B shows a marked overall trend in the desired direction which reverses in Phase A. Nevertheless, this is a tentative correlation approach and it is not considered errorless because all phases are not equal, in particular, the baseline phase has only three measures. In order to establish stability of data, at least five score are required in the baseline (Bloom & Fischer, 1982). Also, although the Phase B shows an immediate change, Bloom and Fischer (1982) suggest that there is "considerable leeway" in interpreting raw data as supporting one's hypothesis. Therefore, the same data is transformed to a single score, the coping index, and a statistical analysis is calculated for statistical significance.

## Statistical Analysis

Statistical analysis was performed on the coping index (Figure B-3), that is, the dependent variable. The two-standard deviation band approach is calculated (Appendix F-3) and a statistically significant

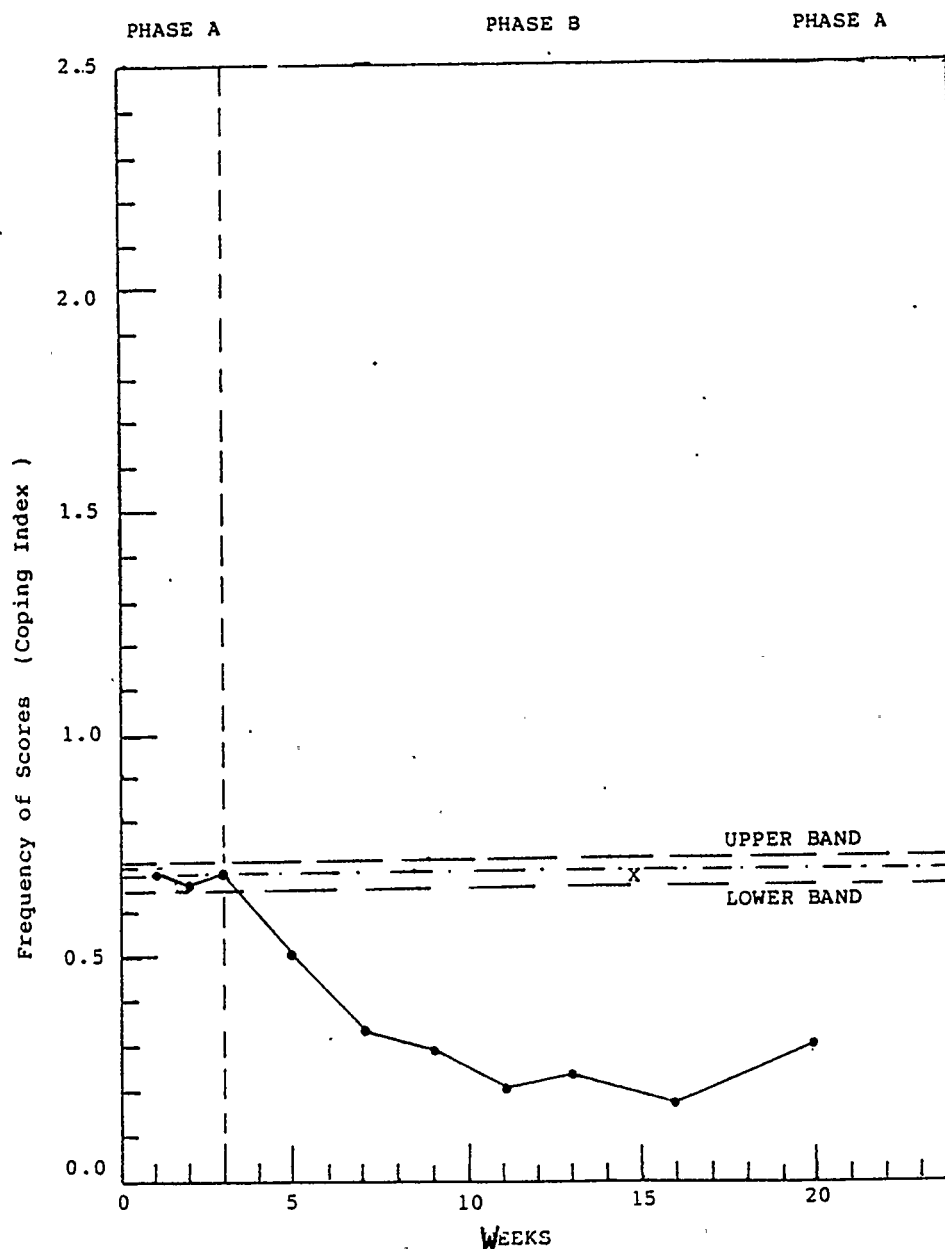


Figure B-3 Graph showing the two standard deviation bands above and below the mean (The Shewart Chart)

change is noted to occur at the 0.5 level of probability. Two or more observations falling outside of the bands during the treatment phase indicate a statistically significant change.

Although visual and statistical analyses supports the hypothesis that the independent variable caused positive change, it is stressed that all phases were not equal. In particular, the baseline did not have enough data to test for independence, an assumption of the Shewart approach, and treatment was not applied in the same location across the phases.

#### Analysis of the Self-Anchored Scale

##### Visual Analysis.

##### Phase A (Baseline).

The data collected for this phase (Figure C-3) indicate that an increasing trend or deterioration is occurring for most items; the exceptions are "cope" and "memory." That is, the subject's sense of independence or his ability to cope shows an overall decreasing trend or a positive change. The extent to which he feels his memory has changed reflects relatively high scores that remain stable over the phase. Also, it is observed that the items which denote anger-3, that is anger towards self, guilt and sin have low scores albeit the trend tends towards a heightening of intensity. Additionally, it is noted that scores for anger-1, anger-2 and anxiety fall within a relatively high intensity range.

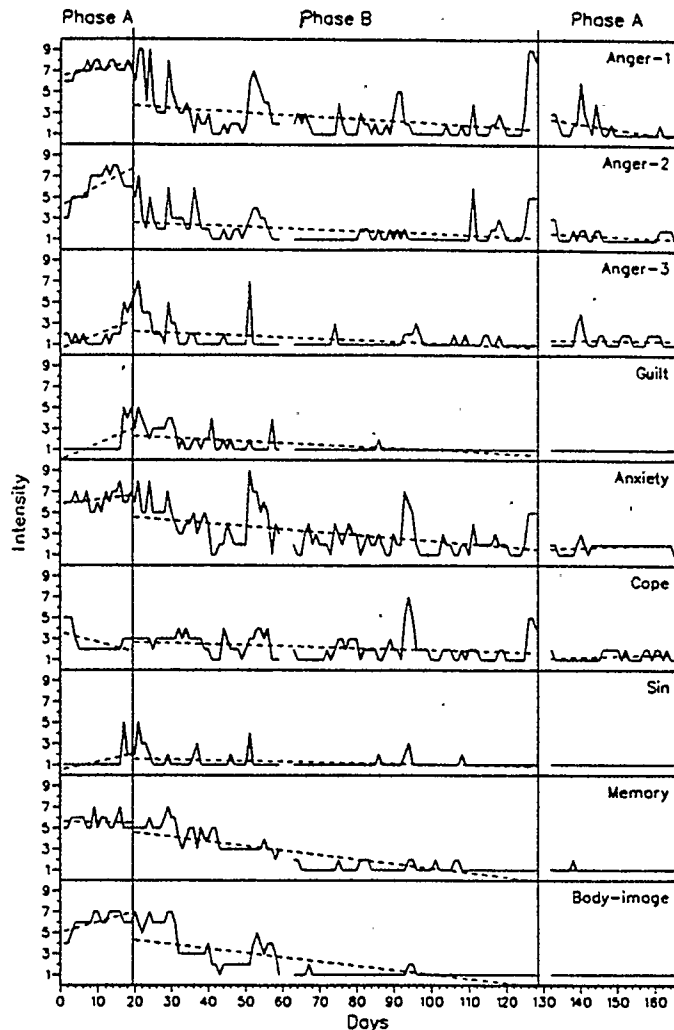


Fig. C-3 Graphic illustration of the daily data obtained from the self-anchored scale. The interrupted lines represent the levels/trends occurring across the phases.

#### Phase B.

During this phase, data for all items show more or less some instability, nevertheless, the general trend is of a decreasing nature which, in turn, indicates desired change. As well, it is noted that data are consistently recorded except for four entries, days 35, 48, 59 and 60. It is also observed that the intensity of most items tend to spike irregularly over this phase, most notable are the items reflecting anger-1

and anxiety. In contrast, the high scores recorded in the baseline for memory and body image are seen to decrease and then stabilize at a score low enough to suggest that these items are no longer considered problems. Furthermore, during the second Phase A visual inspection of data suggest that the gains seen in Phase B are maintained for all items.

Overall, then, visual analysis of daily data indicate that change has occurred in Phase B when compared with Phase A and this change is continued, as is expected, in the second Phase A. Nevertheless, since the phases are not equal, and without the computerized slope drawing, it would be difficult to draw definite conclusions from the data with respect to clinical significance. Therefore, a statistical analysis is conducted.

#### Statistical Analysis.

The autocorrelation tests (Box & Jenkins, cited in SPSSX User Guide, 1986) were conducted on the data for the nine items and some scores are seen to be serially dependent in the first few lags of Phase A (Appendix H-3). For example, anger-1, anger-2, memory and body M (body image) are moderately correlated, however, the tendency disappears quickly. Therefore, this data is considered independent; an assumption necessary for the performance of a t-test.

Therefore, t-tests were conducted to test for significant difference at .05 level between the means of Phases A and B and Phases A and A. The results (Figure D-3) indicate that a significant difference greater than the predetermined alpha level was obtained for anger-1, anger-2, anxiety, cope, memory and body M (body image) while no significant differences are seen in the items: anger-3, guilt and sin. This information is in agreement with that obtained in the visual analysis.

GROUP 1 - GROUP		EQ	1.				
GROUP 2 - GROUP		EQ	2.				
							SEPARATE VARIANCE ESTIMATE
VARIABLE		NUMBER OF CASES	MEAN	STANDARD DEVIATION	T VALUE	DEGREES OF FREEDOM	1-TAIL PROB.
-----							
ANGER1							
GROUP 1	19	7.1579	0.688	17.53	88.63	0.000	
GROUP 2	106	2.5849	2.138				
-----							
ANGER2							
GROUP 1	19	6.0526	1.508	11.21	23.65	0.000	
GROUP 2	106	1.8962	1.373				
-----							
ANGER3							
GROUP 1	19	2.0000	1.291	1.58	23.63	0.06	
GROUP 2	106	1.5000	1.173				
-----							
GUILT							
GROUP 1	19	1.5789	1.387	0.53	23.68	0.30	
GROUP 2	106	1.4057	0.881				
-----							
ANXIETY							
GROUP 1	19	6.2632	0.806	12.37	60.02	0.000	
GROUP 2	106	3.0566	1.871				
-----							
COPE							
GROUP 1	19	2.6842	1.108	1.77	25.99	0.04	
GROUP 2	106	2.1887	1.188				
-----							
SIN							
GROUP 1	19	1.3158	0.946	0.44	21.12	0.22	
GROUP 2	106	1.2170	0.647				
-----							
MEMORY							
GROUP 1	19	5.5789	0.692	8.65	123	0.000	
GROUP 2	106	2.2736	1.636				
-----							
BODYM							
GROUP 1	19	6.0526	0.911	9.59	123	0.000	
GROUP 2	106	2.0849	1.757				

Figure D-3 The t-test results where group 1 refers to phase A and group 2 to phase B.

Figure E-3 shows the significant differences that exist between baseline and withdrawal phases. It is noteworthy that anger-3 and guilt now show that a significant difference occurred relative to the alpha level .05. In this light, then, visual and statistical analysis of those items which were considered problematic for this subject indicate that a significant change occurred in the right direction as a result of the treatment.

#### Subjective Evaluation

This subject stated that the treatment helped him to see that any change in his situation would be the result of his own efforts. As a result, he sought and found a medical research program that accepted him for the experimental testing of drugs intended to combat the virus's virility.



GROUP 1 - GROUP		E2	1.				
GROUP 2 - GROUP		E2	3.				
SEPARATE VARIANCE ESTIMATE							
VARIABLE		NUMBER OF CASES	MEAN	STANDARD DEVIATION	T VALUE	DEGREES OF FREEDOM	1-TAIL PROB.
-----							
ANGER1							
	GROUP 1	19	7.1579	0.688	22.50	50.25	0.000
	GROUP 2	34	1.6176	1.101			
-----							
ANGER2							
	GROUP 1	19	6.0526	1.508	12.93	21.27	0.000
	GROUP 2	34	1.3824	0.604			
-----							
ANGER3							
	GROUP 1	19	2.0000	1.291	1.75	24.13	0.04
	GROUP 2	34	1.4412	0.705			
-----							
GUILT							
	GROUP 1	19	1.5789	1.387	1.82	18.00	0.04
	GROUP 2	34	1.0000	0.000			
-----							
ANXIETY							
	GROUP 1	19	6.2632	0.806	22.10	24.67	0.000
	GROUP 2	34	1.8235	0.459			
-----							
COPE							
	GROUP 1	19	2.6842	1.108	4.98	21.92	0.000
	GROUP 2	34	1.3529	0.485			
-----							
SIN							
	GROUP 1	19	1.3158	0.946	1.46	18.00	0.163
	GROUP 2	34	1.0000	0.000			
-----							
MEMORY							
	GROUP 1	19	5.5789	0.692	28.16	19.24	0.000
	GROUP 2	34	1.0294	0.171			
-----							
BODYM							
	GROUP 1	19	6.0526	0.911	24.17	18.00	0.000
	GROUP 2	34	1.0000	0.000			
-----							

Figure E-3 The t-test results where group 1 refers to phase A and group 2 to withdrawal phase A.

#### Profile for Subject #4

##### Personal Data.

This tall, slim 24-year-old male was part-time employed in a volunteer activity and relied on income security (AISH) for finances. His education included three years in general studies at the university level. He contracted AIDS as a result of sexual behaviours; he was diagnosed as suffering from full-blown AIDS six months previously and was receiving experimental drug treatment as a participant in a medical research program on AIDS. He was of a homosexual orientation but did not have a monogamous lover relationship. He participated in the PWA support group but did not utilize a buddy. Interviews took place in the agency except while he was in hospital. He did not complete the study because of his demise. In all, five interviews occurred, two of which involved the application of treatment.

#### Analysis of the HSSF

##### Phase A (Baseline).

A brief interpretation of the HSSF mean of means shows that this subject is functioning well insofar as his perceptions of satisfaction in his life are high enough and those of his frustration are low enough to permit good functioning. This is supported by his coping index which is in the expected range for good functioning in the absence of evidence to the contrary. The swing within the positive index is within the expected range while the swing in the frustration is greater than what is expected. The synthesis scale shows an optimism that is in agreement with his positive mean. However, at his worst levels of functioning, his

coping index suggests that he is in need of counselling or other form of support.

For comparison purposes, an interpretation of the last scale recorded in Phase B presents information similar to that seen in the baseline insofar as this subject has high enough satisfaction and low enough frustration to function well.

### Visual Analysis

Inspection of the satisfaction index (Figure A-4) shows an increasing trend in the data, in an improvement direction, for Phase A that, during Phase B, decrease which indicates a negative response to treatment. The synthesis data, however, indicate an irregularity in the baseline which tends to increase in Phase B, therefore suggesting that his global view of life is improving. The frustration measures show a decreasing trend in the baseline which levels but increases initially in the B Phase and then drops to a level below that recorded in the baseline. Therefore, visual analysis does not permit a clear statement to be made with respect to clinical significance. Moreover, the study is incomplete and because there are not enough data, statistical analysis is withheld.

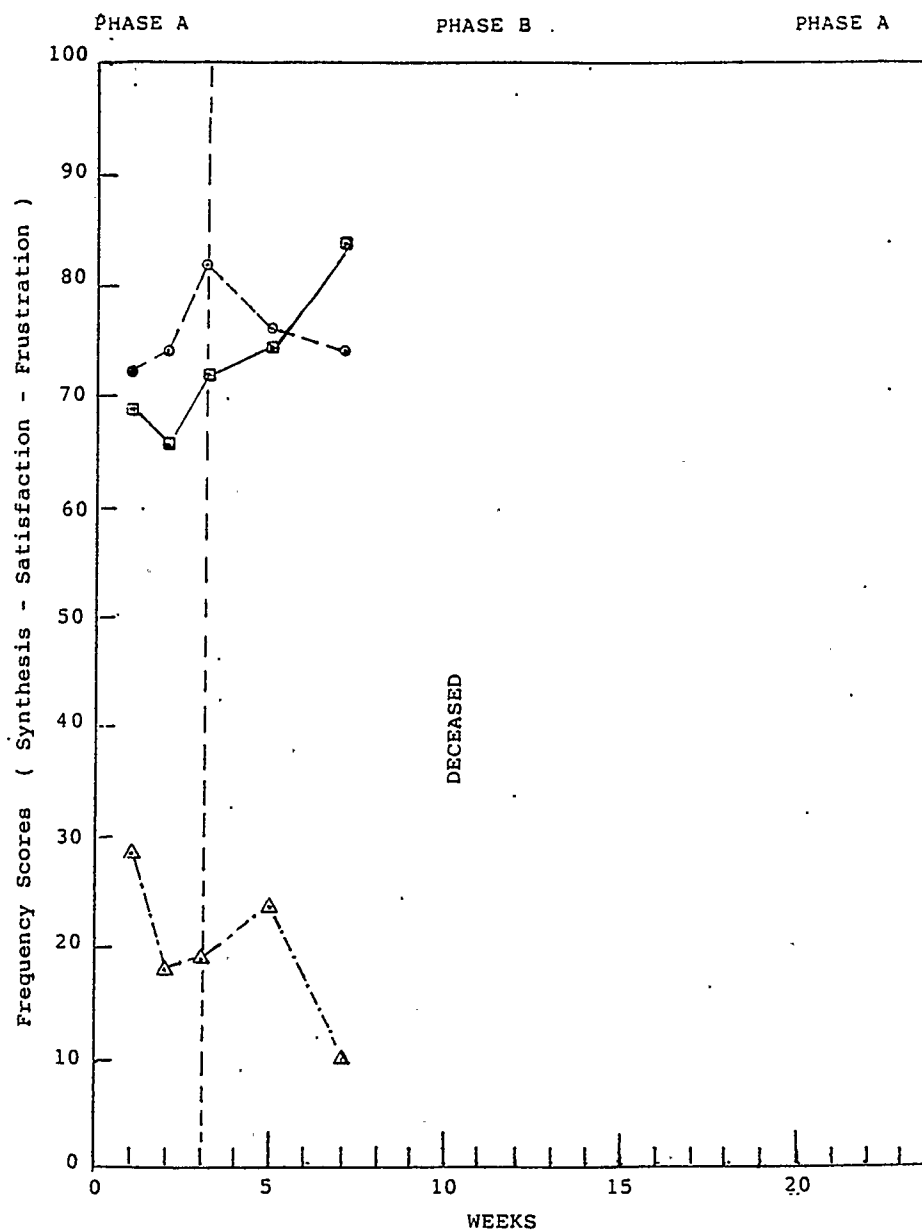


Figure A-4 Graph showing the extent of the subject's perceptions of satisfaction, frustration and synthesis across phases A, B and A.

LEGEND  
 □ : Synthesis  
 ○ : Satisfaction  
 △ : Frustration

## Analysis of the Self-Anchored Scale

### Visual Analysis.

#### Phase A Baseline.

Figure C-4 shows that, for the subject, only three items were relevant. For example, he did not feel any angers, 1, 2 or 3; he did not experience any feelings of guilt or sin and, for this phase, he felt quite independent insofar as coping presented no problems.

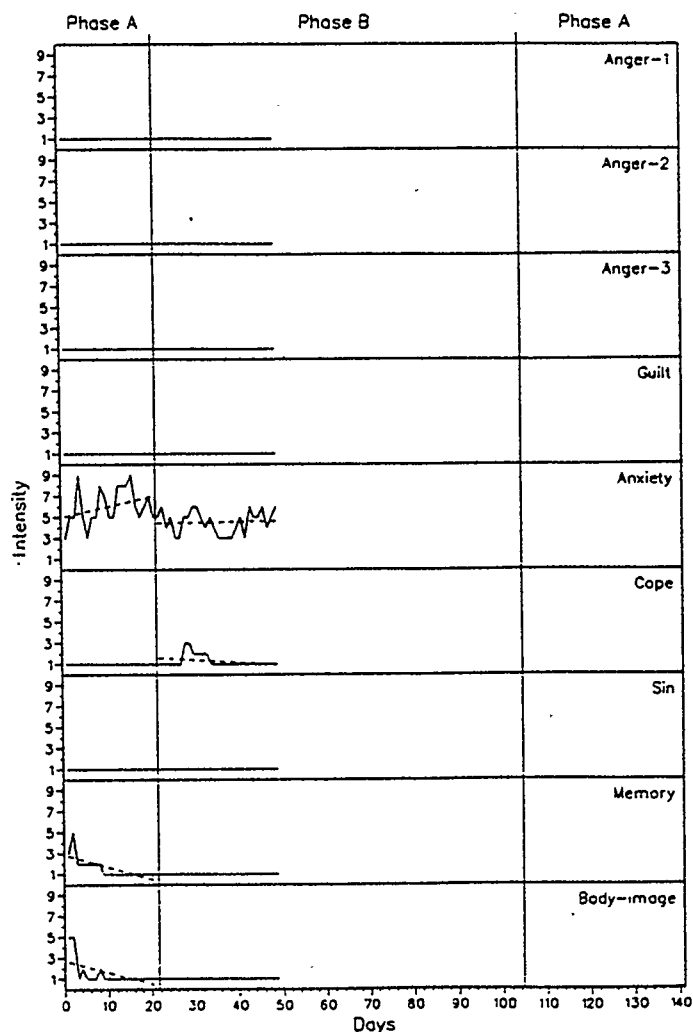


Fig. C-4 Graphic illustration of the daily data obtained from the self-anchored scales. The interrupted lines represent the levels/trends occurring across the phases. The horizontal lines indicate that these items are not relevant for this subject.

However, the extent to which he felt anxious is seen in fairly high, unstable scores which, according to the interrupted line, reflect an increasing, or worsening, trend. In contrast, scores reflecting memory and body image show a decreasing trend or improvement.

#### Phase B.

The data reflecting anxiety intensity indicates the subject's perception of anxiety is reduced in this phase and that, overall, this reduction is maintained. For example, in contrast to the increasing trend of the interrupted line in Phase A, the level of the line has dropped and shows no gradient for Phase B. During this phase it is noted that the subject perceived a small change to occur in the item, cope.

Visual analysis presents difficulties in that data for all phases are incomplete, therefore, no conclusions are possible. Moreover, for the same reasons, statistical analysis cannot be conducted.

#### Subjective Evaluation

This subject felt that the treatment helped him to focus on the present; thus, he was able to live each day at a time to its fullest rather than to dwell on the termination of his life.

### Profile for Subject #5

#### Personal Data.

This very slim, fragile-appearing male has recently been diagnosed as having AIDS. He had resigned his job because of the inherent risks therein for infection transmission and because persistent fatigue excluded the necessary activities required to keep his job. At the time of his entry to the study, he had no income but his application for AISH was in process. He lives with his lover and has a relationship which is monogamous. He has a "buddy" and he attends the PWA group but both these support systems are utilized irregularly because he feels that neither of them satisfies his needs. He completed high school education and earned a post-graduate diploma related to his career.

### Analysis of the HSSF

#### Phase A (Baseline).

A summary analysis of the mean of means of the data recorded for the baseline indicate that this subject would benefit from counselling. His satisfaction levels are similar to those that suggest the person is definitely in need of counselling while his frustration levels also confirm that he is definitely in need of counselling. The analysis of the coping index suggests that intensive counselling is required.

The swing within the positive index, mean of baseline measures, is greater than expected, while that of the frustration levels is even greater than expected indicating that he is uncertain of both the sources of his satisfaction and frustrations. The synthesis score reveals a gloomy outlook on life. However, in relation to his perceptions of satisfactions in his life, he is overly pessimistic in his evaluation of his total

situation. Moreover, at times of both his best and worst levels of functioning, this subject is in a category which again confirms that he is definitely in need of counselling as his perceptions of frustration overwhelm those of satisfaction. Moreover, his global outlook on life is overly gloomy.

A brief comparison of baseline HSSF data with those recorded for the last entry in the B Phase indicate that change has occurred in satisfaction, frustration and synthesis levels. His levels of satisfaction are now in the category which suggests good social functioning while those of frustration are low enough to permit a satisfactory balance. Analysis of his coping index suggests that he is in the category of persons who have been seen to cope well in absence of evidence to the contrary.

The swings, for both indices, remain greater than expected but are closer to the upper limits, in particular, that of the frustration index. This, then, suggests that he is somewhat more sure of the sources of his satisfaction and frustrations. His outlook on life has changed dramatically in terms of his synthesis data. Moreover, when examined in relation to the positive mean, it is seen that he is in "touch with reality." Even at his worst levels of functioning, this subject is experiencing high enough levels of satisfaction and low enough levels of frustration for good social functioning (see Appendix E-5 for a closer analysis).

#### Visual Analysis of Data

Inspection of baseline data (Figure A-5) indicate a deteriorating trend. The satisfaction and synthesis scores decrease while those of frustration increase in the second data recordings. This position



appears to stabilize over the following two data points but this is not certain as there are too few data records.

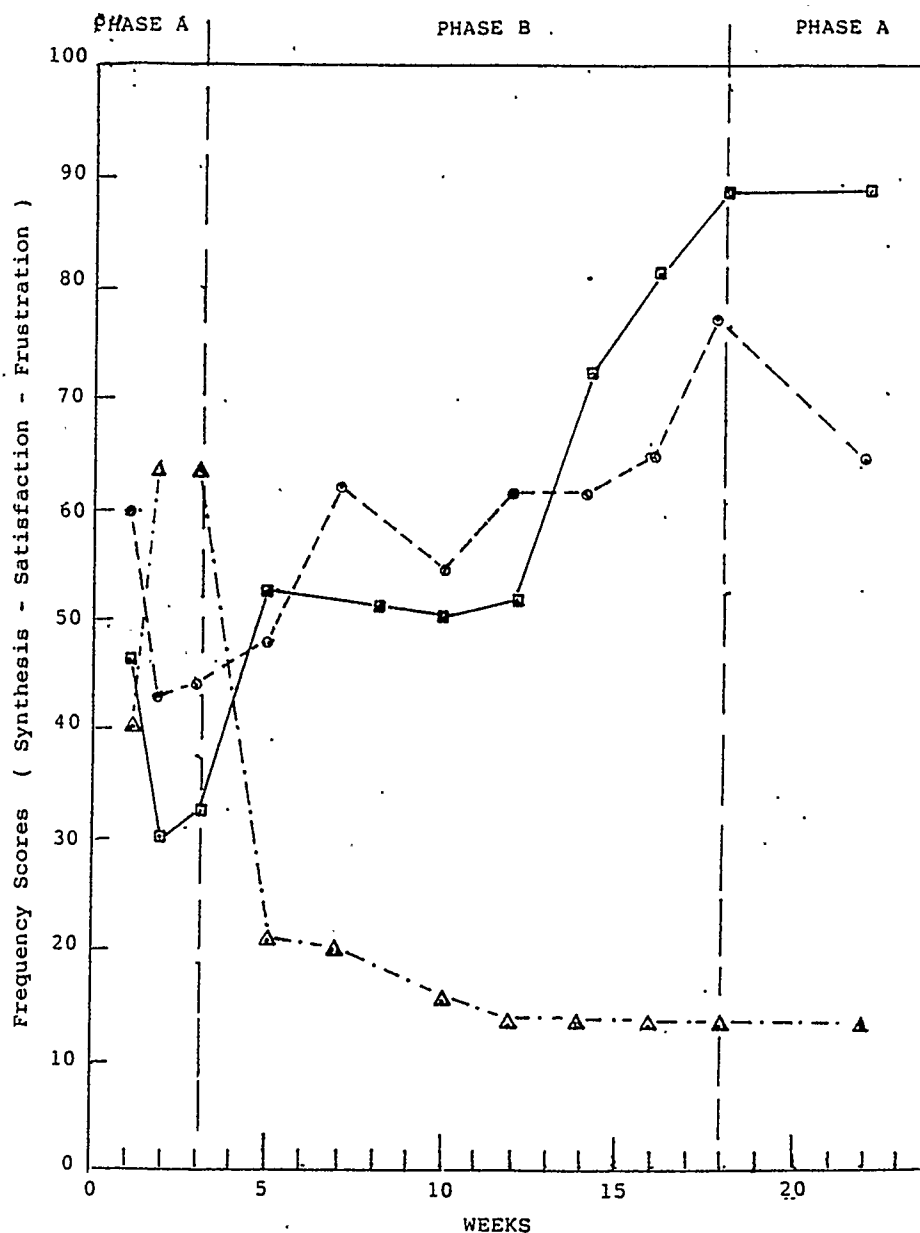


Figure A-5 Graph showing the extent of the subject's perceptions of satisfaction, frustration and synthesis across phases A, B and A.

The B Phase shows that immediately following the application of the independent variable a change occurs. The satisfaction and synthesis scores increase noticeably while those of frustration show an exceptional decrease. The increasing trend in satisfaction and synthesis scores, for the most part, is seen to continue across this phase. It is observed that the frustration scores continue on a decreasing trend across three data points and then stabilizes at an acceptable level.

During the withdrawal phase, a change is noticed only in the satisfaction score and the direction of the change indicates a decrease in satisfaction upon withdrawal of treatment, however, scores on synthesis and frustration are maintained. As previously noted, this is expected because the independent variable creates lasting change.

The visual analysis of measures recorded across Phases A, B and A suggest that the independent variable caused change in the dependent variable because the change is noticeable and immediate early in Phase B and the trend of change continues in subsequent scores. Also, the upward trend in the synthesis stops in the second Phase A and that of satisfaction drops, the level of the frustration score is maintained.

#### Statistical Analysis

Shewart's two-standard deviation band statistic was conducted (Appendix F-5) and the results (Figure B-5) indicate that the treatment was effective at a statistically significant probability level of .05.

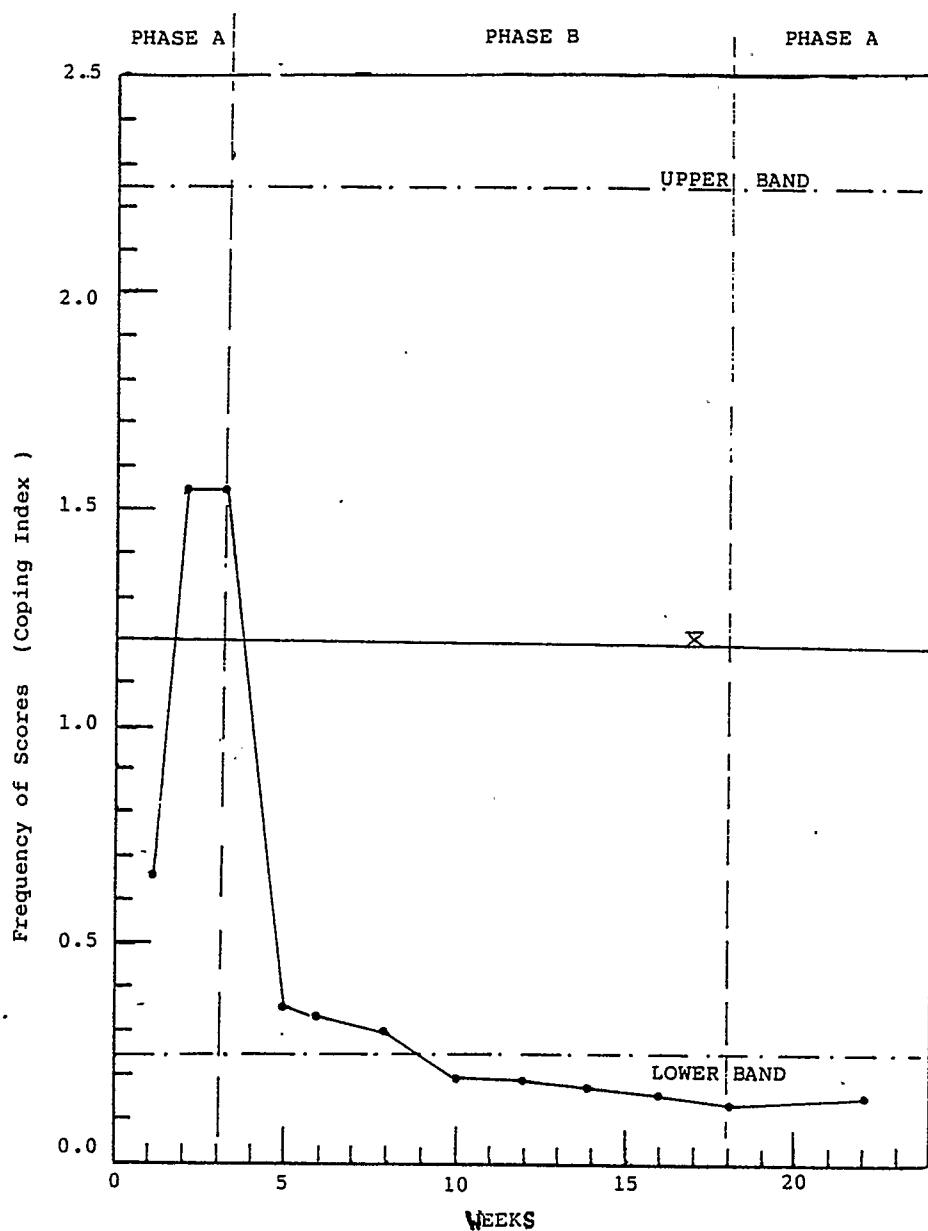


Figure B-5 Graph showing the two standard deviation bands above and below the mean (The Shewart Chart)

### Analysis of the Self-Anchored Scale

#### Visual Analysis.

##### Phase A (Baseline).

Inspection of data (Figure C-5) reveal that the items of greatest concern are anger-2, anxiety and cope. The trend for anxiety and cope suggests a deterioration is occurring while a very slight decreasing trend is detected for anger-2. Anger-1 shows an unstable but increasing trend. Data for anger-3 is also unstable and sometimes moderately intense but the overall trend, as indicated by the interrupted line, is in the decreasing direction. The data for guilt also shows an increasing trend while those of memory and body image reveal a decreasing trend. It is noted, however, that in the beginning of this phase, the subject's perception of memory change is relatively high.

##### Phase B.

Early in Phase B a change in data intensity is observed for most items. The change is immediate, noticeable and in the desired direction. The exceptions are memory and body image and the data for these items stabilize and maintain stability over the phase. The remaining items also acquire a stability that is more or less maintained. It is observed, however, that anger-2 exhibited a marked increase over a period of days and then subsided to a level below previous records. In addition, data for the second Phase A suggest that gains seen in Phase B are maintained as is expected.

An overall visual inspection of Phases A and B indicate that desired change occurred as a result of the application of treatment.

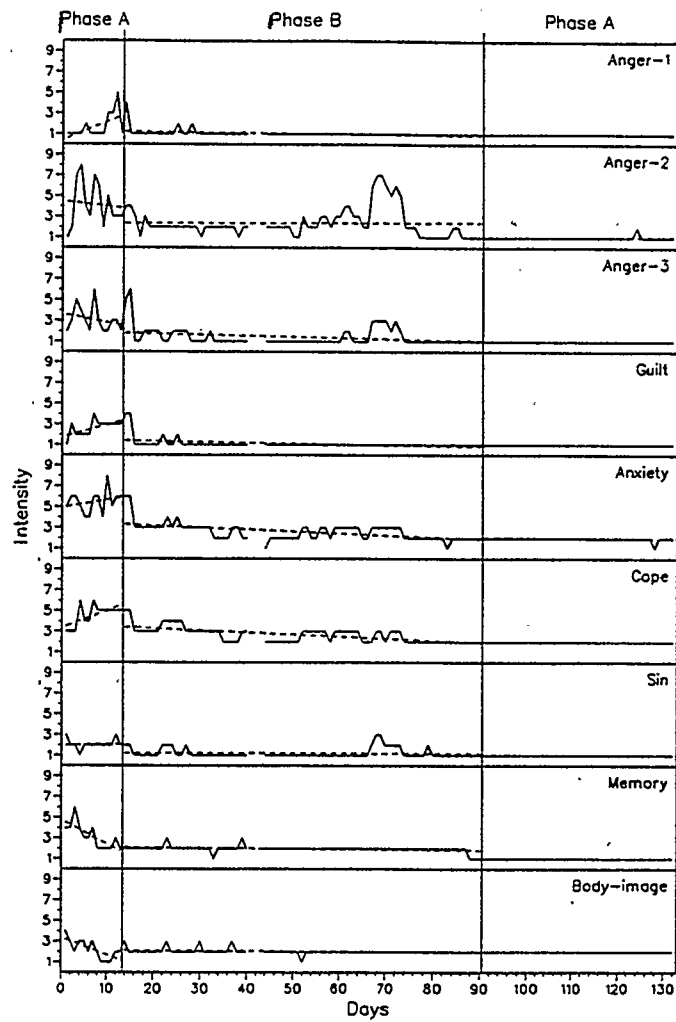


Fig.C-5 Graphic illustration of the daily data obtained from the self-anchored scale. The interrupted lines represent the levels/trends occurring across the phases.

### Statistical Analysis

The autocorrelation tests (Box & Jenkins, cited in SPSSZ User Guide, 1986) indicate that the data is independent except for scores 1, 2 and 3 for the items guilt, anxiety and cope and in score one for sin and memory. Since serial dependency is not continued statistical analysis is conducted by way of t-tests. The t-tests are applied to Phases A and B and Phases A and A to determine if there are significant differences existing between these phases. It is observed (Figure D-5) that a significant difference does exist between the phases for all items except for body M (body image). Further, for most items the level of significance obtained is greater than the predetermined level (.05). An examination of the results for Phase A relative to the withdrawal phase (Figure E-5) supports the view that the significant positive change achieved in Phase B has been maintained as is expected.

Overall, visual and statistical analyses of the items in the self-anchored scale suggest that a significant change, in the desired direction, has occurred as a result of treatment. The exception is for item #9, body image, which was not considered to be in a problem range. Therefore, findings of the self-anchored scale support those of the HSSF.

GROUP 1 - GROUP		EQ	1.				
GROUP 2 - GROUP		EQ	2.				
SEPARATE VARIANCE ESTIMATE							
VARIABLE		NUMBER OF CASES	MEAN	STANDARD DEVIATION	T VALUE	DEGREES OF FREEDOM	1-TAIL PROB.
-----							
ANGER1							
	GROUP 1	13	1.6923	1.251	1.83	12.25	0.047
	GROUP 2	94	1.0532	0.340			
-----							
ANGER2							
	GROUP 1	13	4.1538	2.230	3.26	13.30	0.003
	GROUP 2	94	2.0851	1.381			
-----							
ANGER3							
	GROUP 1	13	3.0769	1.256	4.84	13.46	0.000
	GROUP 2	94	1.3404	0.824			
-----							
GUILT							
	GROUP 1	13	2.6154	0.768	7.02	13.19	0.000
	GROUP 2	94	1.0851	0.456			
-----							
ANXIETY							
	GROUP 1	13	5.4615	1.127	9.28	13.60	0.000
	GROUP 2	94	2.4681	0.772			
-----							
COPE							
	GROUP 1	13	4.5385	1.050	6.72	13.51	0.000
	GROUP 2	94	2.5213	0.699			
-----							
SIN							
	GROUP 1	13	2.0769	0.494	6.30	14.64	0.000
	GROUP 2	94	1.1702	0.431			
-----							
MEMORY							
	GROUP 1	13	3.1538	1.214	4.08	12.51	0.001
	GROUP 2	94	1.7660	0.474			
-----							
BODYM							
	GROUP 1	13	2.2308	0.927	0.77	12.20	0.230
	GROUP 2	94	2.0319	0.230			

Figure D-5 The t-test results where group 1 refers to phase A and group 2 to phase B.

GROUP 1 - GROUP		EQ	1.				
GROUP 2 - GROUP		EQ	3.				
SEPARATE VARIANCE ESTIMATE							
VARIABLE		NUMBER OF CASES	MEAN	STANDARD DEVIATION	T VALUE	DEGREES OF FREEDOM	1-TAIL PROB.
-----							
ANGER1							
	GROUP 1	13	1.6923	1.251	2.00	12.00	0.03
	GROUP 2	22	1.0000	0.000			
-----							
ANGER2							
	GROUP 1	13	4.1538	2.230	5.01	12.13	0.000
	GROUP 2	22	1.0455	0.213			
-----							
ANGER3							
	GROUP 1	13	3.0769	1.256	5.96	12.00	0.000
	GROUP 2	22	1.0000	0.000			
-----							
GUILT							
	GROUP 1	13	2.6154	0.768	7.58	12.00	0.000
	GROUP 2	22	1.0000	0.000			
-----							
ANXIETY							
	GROUP 1	13	5.4615	1.127	11.11	12.51	0.000
	GROUP 2	22	1.9545	0.213			
-----							
COPE							
	GROUP 1	13	4.5385	1.050	8.72	12.00	0.000
	GROUP 2	22	2.0000	0.000			
-----							
SIN							
	GROUP 1	13	2.0769	0.494	7.87	12.00	0.000
	GROUP 2	22	1.0000	0.000			
-----							
MEMORY							
	GROUP 1	13	3.1538	1.214	6.40	12.00	0.000
	GROUP 2	22	1.0000	0.000			
-----							
BODYM							
	GROUP 1	13	2.2308	0.927	0.90	12.00	0.193
	GROUP 2	22	2.0000	0.000			

Figure E-5 The t-test results where group 1 refers to phase A and group 2 to withdrawal phase A.



Subjective Evaluation

This subject believed that he benefited from the treatment insofar as the meaning of his life changed. For example, the treatment helped him to accept the terminal nature of his illness which, in turn, caused him to attend to the necessary business of making a will, arranging and paying for his funeral, etc. Thereafter, the subject made the most of each day in terms of building on his relationships with his loved one(s). In addition, his physician felt that the treatment helped the subject in that he noted the subject was coping well and had a very positive attitude.

Profile for Subject #6

## Personal Data.

This 29-year-old, unemployed male was referred to the study by AIDS Calgary Agency. He is diagnosed as having AIDS and contracted the infection through engaging in homosexual activities. He has a monogamous relationship with his lover and receives Income Assistance (AISH). He has a grade ten level of education but he, also, received some training related to his career. He attends the PWA support group but does not use a "buddy." This subject presented as being very thin pale, lethargic and shy. He did not commence treatment until after the completion of the fourth scale because, being a holiday season, he did not want to give the time required for a treatment session.

Analysis of the HSSF

## Phase A (Baseline).

A summary analysis of the HSSF, according to the prescribed interpretation, shows that this subject's levels of satisfaction and synthesis are too low for good functioning while that of frustration is too high. The mean scores for the baseline indicate that this subject is definitely in need of counselling as both his satisfaction and frustration scores are in this category of the established norms. The analysis of the coping index compares with norms expected in psychiatric patients.

The swings within each index are within the expected range. The synthesis score infers a gloomy outlook, however, in relation to the positive mean, it is within the range that suggests the subject is in touch with reality. Lastly, even during his best levels of functioning this subject needs intensive counselling.

## Phase B

A HSSF interpretation of the data for the last entries for Phase B show that the satisfaction level is such that counselling or other form of support could be beneficial while the frustration level is in a category which has been observed in persons who function well. The analysis of the coping index suggests that he is probably coping well in the absence of evidence to the contrary.

The swing within each index is in the expected range. The synthesis score is in a range that suggests an optimistic outlook on life and, when examined in relation to the satisfaction mean, it is suggested that this subject is in touch with reality. Lastly, during his best levels of functioning, this subject copes well; however, at his worst levels, he would benefit from counselling or other form of support (see Appendix E-6 for further analysis).

## Visual Analysis

Inspection of baseline data (Figure A-6) shows a marked decreasing trend in the synthesis data which stabilizes at the fourth entry; satisfaction scores show an unstable decrease/increase/decrease pattern, that is, no trend can be observed. The frustration scores reveal an overall decreasing trend in a direction that suggests improvement.

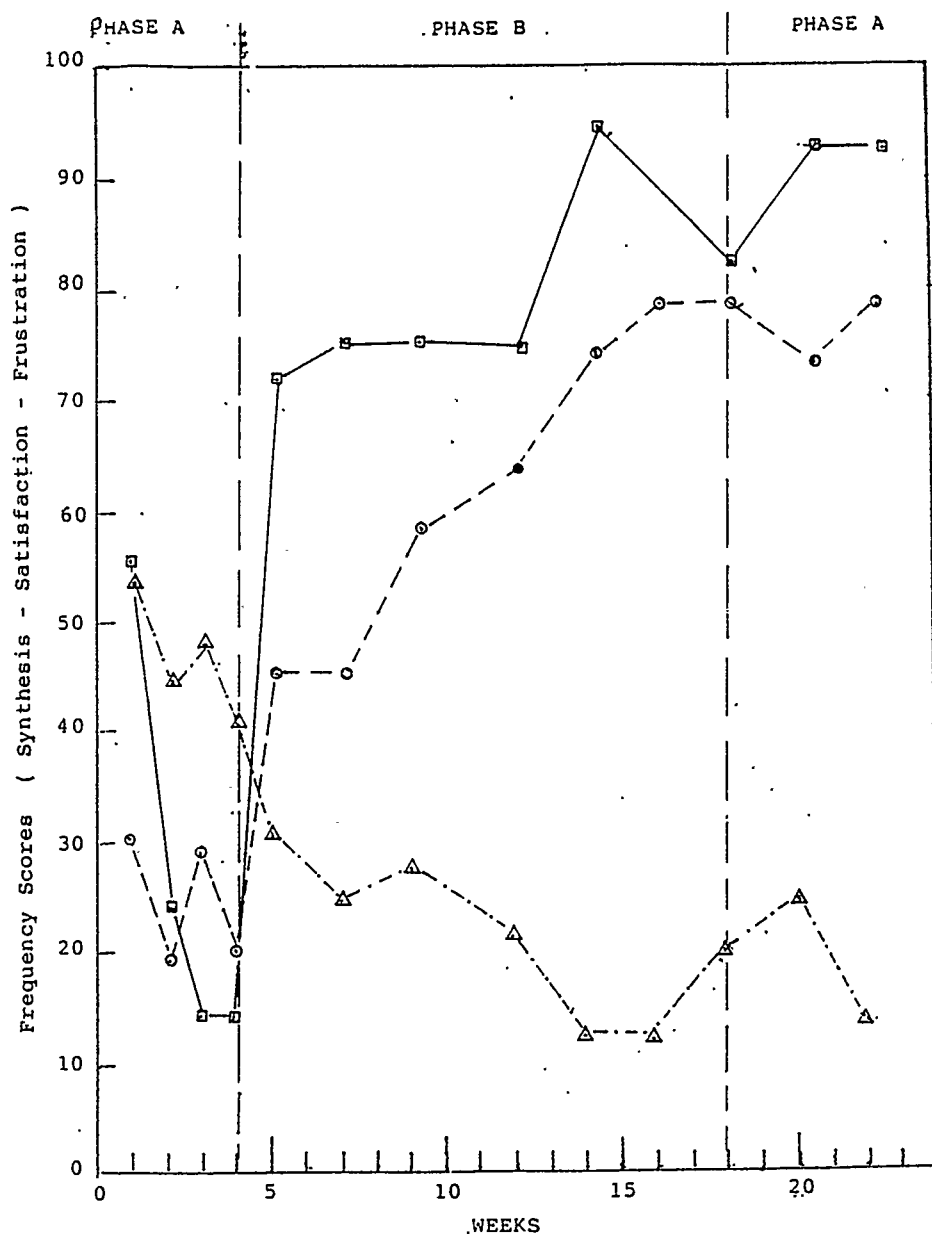


Figure A-6 Graph showing the extent of the subject's perceptions of satisfaction, frustration and synthesis across phases A, B and A.

LEGEND

- : Synthesis
- : Satisfaction
- △: Frustration

Visual analysis of Phase B shows a noticeable and immediate change in synthesis, satisfaction and frustration scores following the introduction of the independent variable. Thus, according to single-system

research theorists (Bloom & Fischer, 1982; Chassin, 1979; Kazdin, 1982; and others) this is an indication that the treatment is responsible for the change because without effective treatment the trend noted in the baseline would probably continue. Further, visual inspection of this phase reveals that this trend continues until satisfactory levels of synthesis, satisfaction and frustration scores are achieved.

Following withdrawal of treatment, Phase A, it is seen that the synthesis scores increase somewhat and then level off, the satisfaction score drops somewhat but then increases to a prewithdrawal level and the frustration scores increase and then decrease to a prewithdrawal level. Although the scores do not return to baseline levels, the decrease in the satisfaction score in conjunction with the increase in the frustration score may be viewed as a result of the initial withdrawal of treatment. However, as previously stated, the second Phase A data is not expected to return to baseline levels. Nevertheless, an overall inspection of the three phases does support the opinion that change has occurred in the desired direction. A statistical analysis is proposed to confirm or deny this position.

#### Statistical Analysis

The celeration line statistical test was computed (Appendix F-6) on the coping index data (Figure B-6) and the results indicate that a statistically significant change has occurred in the right direction at the .05 level of probability (see Appendix G-3 for description of the celeration line approach and the reasons for its use).

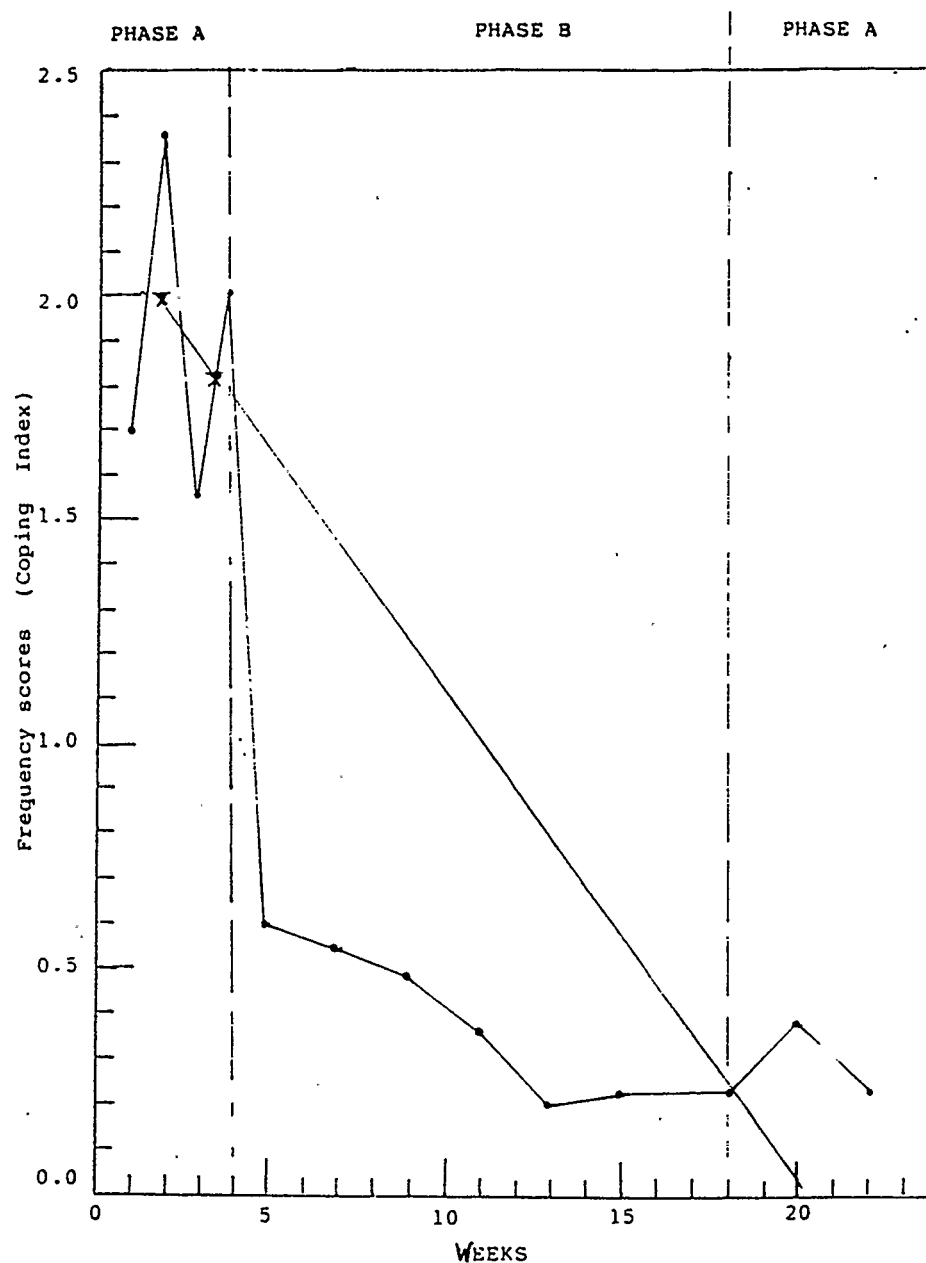


Figure B-6 Graph showing the celeration line projection from Phase A across Phase B.

### Analysis of the Self-Anchored Scale

#### Visual Analysis.

A cursory inspection of Figure C-6 indicates that although Phase A is prolonged only ten data points are recorded. As well, it is observed that data is not recorded for several days during Phase B. The reasons

for incomplete data, as previously mentioned, are due to holidays and house guests.

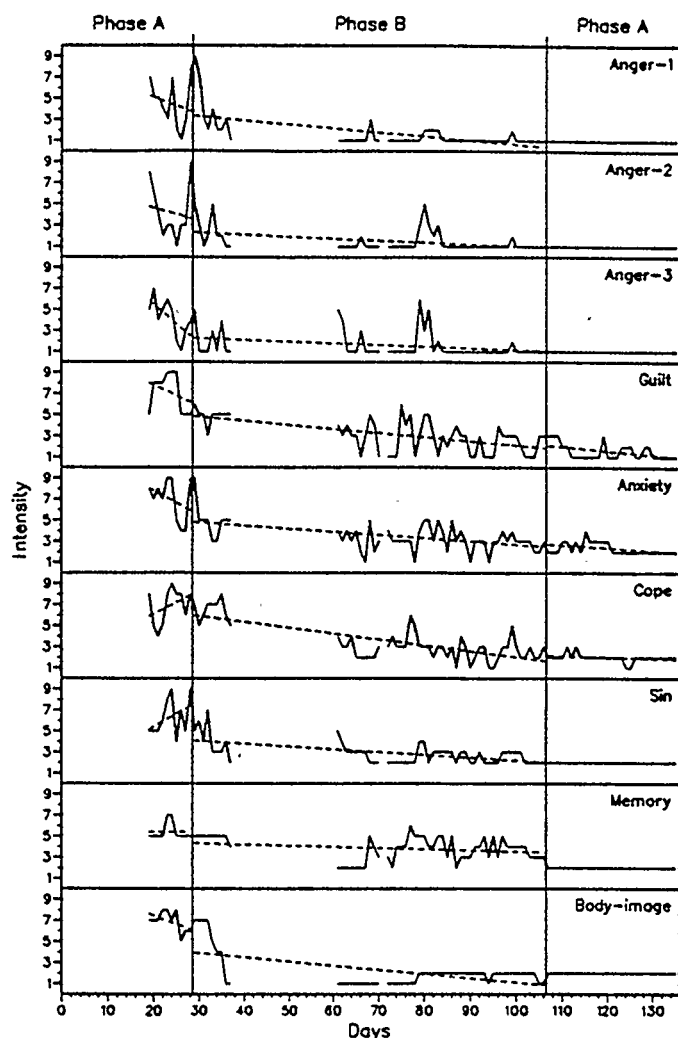


Fig. C-6 Graphic illustration of the daily data obtained from the self-anchored scale. The interrupted lines represent the levels/trends occurring across the phases.

#### Phase B.

Some change appears to occur in this phase in that the overall intensity of scores are reduced. Specifically, the levels and trends of anger-2, cope and sin have decreased. For example, the initial drop in anger-2 has changed the level of the interrupted line and over the

remaining data points the decreasing trend is gradual. Likewise, data for anger-1 reveal an initial marked decrease that appears to stabilize and the interrupted line indicates that a slight decreasing trend is maintained for the phase. Data for anger-3 suggest the subject experiences bursts of fairly intensive anger towards himself but the overall trend is a decreasing one. Although the data for guilt also reveals a decreasing trend, the variance in the data is pronounced. The same is noted for anxiety and cope. As well, data for sin show a reversal of trend which is maintained. Records for memory indicate that a change in level has occurred which, although appearing unstable is maintained. The decreasing trend noted in Phase A for body image has changed in level and, then, continues in a decreasing manner.

The second Phase A reveals that the intensity of most items have leveled and for the rest of the items the trend continues in the desired direction. In essence, visual examination of data tends to support the view that clinical significance has been achieved, however, because of the difference in phase lengths and due to missing data, no definite conclusions are drawn at this time.

#### Statistical Analysis.

The autocorrelation tests (Box & Jenkins, as cited in SPSSX User Guide, 1986) for serial dependency was conducted. Since dependency was observed (Appendix H-6) in lags 1 only for items guilt and body M (body image) data independence is assumed. The t-tests were conducted to determine if significant changes occurred between Phases A and B and Phases A and A. The results (Figure D-6) indicate that a statistical significance, greater than the preset probability level, occurred in all



items for the Phases A and B comparisons. An examination of the results for phases baseline and withdrawal (Figure E-6) reveal that significant differences exist for all items.

GROUP 1 - GROUP		EQ	1.				
GROUP 2 - GROUP		EQ	2.				
SEPARATE VARIANCE ESTIMATE							
VARIABLE	NUMBER OF CASES	MEAN	STANDARD DEVIATION	T VALUE	DEGREES OF FREEDOM	1-TAIL PROB.	
-----							
ANGER1							
GROUP 1	10	4.5000	2.321				
GROUP 2	54	1.5741	1.449	3.85	10.34	0.002	
-----							
ANGER2							
GROUP 1	10	4.2000	2.616				
GROUP 2	54	1.4815	1.041	3.24	9.53	0.006	
-----							
ANGER3							
GROUP 1	10	4.2000	1.814				
GROUP 2	54	1.5741	1.283	4.38	10.73	0.003	
-----							
GUILT							
GROUP 1	10	7.1000	1.853				
GROUP 2	54	3.0370	1.566	6.52	11.50	0.000	
-----							
ANXIET							
GROUP 1	10	7.0000	2.000				
GROUP 2	54	3.4444	1.369	5.39	10.62	0.000	
-----							
COPE							
GROUP 1	10	6.9000	1.729				
GROUP 2	54	3.3889	1.720	5.90	12.53	0.000	
-----							
SIN							
GROUP 1	10	6.3000	1.829				
GROUP 2	54	2.8519	1.071	5.78	10.17	0.000	
-----							
MEMORY							
GROUP 1	10	5.4000	0.843				
GROUP 2	54	3.8148	1.134	5.15	15.74	0.000	
-----							
BODYM							
GROUP 1	10	6.9000	0.994				
GROUP 2	54	2.0926	1.617	12.53	19.19	0.000	

Figure D-6 The t-test results where group 1 refers to phase A and group 2 to phase B.

Therefore, gains seen as a result of treatment are maintained following the withdrawal of the treatment as was expected. Statistical analyses, then, suggest the independent variable caused desired change.

GROUP 1 - GROUP	EQ	1.					
GROUP 2 - GROUP	EQ	3.					
							SEPARATE VARIANCE ESTIMATE
VARIABLE	NUMBER OF CASES	MEAN	STANDARD DEVIATION	T VALUE	DEGREES OF FREEDOM	1-TAIL PROB.	
-----							
ANGER1							
GROUP 1	10	4.5000	2.321	4.77	9.00	0.001	
GROUP 2	29	1.0000	0.000				
-----							
ANGER2							
GROUP 1	10	4.2000	2.616	3.87	9.00	0.004	
GROUP 2	29	1.0000	0.000				
-----							
ANGER3							
GROUP 1	10	4.2000	1.814	5.58	9.00	0.0001	
GROUP 2	29	1.0000	0.000				
-----							
GUILT							
GROUP 1	10	7.1000	1.853	9.28	10.00	0.000	
GROUP 2	29	1.5172	0.738				
-----							
ANXIET							
GROUP 1	10	7.0000	2.000	7.27	9.48	0.000	
GROUP 2	29	2.3448	0.553				
-----							
COPE							
GROUP 1	10	6.9000	1.729	8.89	9.30	0.000	
GROUP 2	29	2.0000	0.378				
-----							
SIN							
GROUP 1	10	6.3000	1.829	7.44	9.00	0.000	
GROUP 2	29	2.0000	0.000				
-----							
MEMORY							
GROUP 1	10	5.4000	0.843	12.75	9.00	0.000	
GROUP 2	29	2.0000	0.000				
-----							
BODYM							
GROUP 1	10	6.9000	0.994	15.58	9.00	0.000	
GROUP 2	29	2.0000	0.000				
-----							

Figure E-6 The t-test results where group 1 refers to phase A and group 2 to withdrawal phase A.

Subjective Evaluation

This subject stated that the treatment helped him to identify and to focus on the major problems in his life. In doing so he accepted the terminality of his life, made his will and funeral arrangements and commenced to seek family members for the purpose of mending relationships. Also, this subject noted that the treatment helped him to seek a balance in terms of his own personality. For example, instead of behaving in the shy, retiring manner customary for him, he assumed leadership roles in activities designed to create required change and to help others understand what it is like to have AIDS.

### Profile for Subject #7

#### Personal Data.

This 23-year-old, homosexually oriented young male had lost his lover, of a long-standing monogamous relationship, just prior to entry to the study. Although his lover died as a result of the HIV infection, both of them were diagnosed as having AIDS-related illnesses. Although this subject appeared keen to participate in the study, he withdrew voluntarily because he could not remember to keep his appointments. At this time, his forgetfulness was not considered to be related to his disease but later he was diagnosed as having a brain tumor. For this reason, only one measurement is recorded for the HSSF and no daily data for the Self-Anchored Scale were obtained. This subject is now deceased.

### Analysis of the HSSF

#### Phase A (Baseline).

This subject's perception of satisfaction is within a range that suggests good functioning while his synthesis level reveals a very optimistic outlook on life. On the other hand, his frustration score is within a range which suggests that the subject is definitely in need of counseling. His coping index is also in the range that indicates intensive counselling would be beneficial.

This chapter, then, examined the results of the data obtained from both the HSSF and self-anchored scales. The HSSF scores were interpreted according to established norms and graphs were visually and statistically analyzed. Likewise, measures obtained from the self-anchored scale were visually and statistically examined. The next

chapter discusses the conclusions and implications of the results of the study.

## CHAPTER SIX

### DISCUSSION AND CONCLUSIONS

This chapter outlines the results and conclusions of the study. References to pertinent literature are made with regard to identified psychosocial themes. The significance of the study is considered as well as its limitations. Implications for social work and future research are delineated and, finally, a summary of the study is provided.

#### Discussion

The results have indicated that a statistical significance was achieved for the four subjects who completed the study. However, some findings require further explanations, therefore, a brief subject profile follows which is intended to respond to data discrepancies.

#### Profile for Subject #1.

In the visual analysis of the HSSF data, the change occurring immediately following the introduction of treatment was in a direction opposite to what was expected. It is suggested that the reason for the marked deterioration is indeed the result of treatment but it is not regarded as a negative outcome. On the contrary, since the focus of the treatment is to create self-awareness, the first application may have caused the subject to take a closer, more realistic view of his situation rather than one based on denial. Consequently, the observed negative change is seen as the first step taken towards self-responsibility inasmuch as he permitted himself to recognize and to express the extent of frustration in his life. Additionally, he accepted hospitalization as a

route that would promote the healing process. Moreover, in collaboration with his psychiatrist, psychiatric therapy was terminated. Therefore, the unexpected negative outcome is interpreted as being positive.

This position is supported by data from the HSSF subscales. For example, in the comparisons of the synthesis indices with those of satisfaction it was noted that during the baseline phase the subject's outlook of life was unrealistic while data for the withdrawal phase indicated that he was in touch with reality. Also, visual analysis of some items on the self-anchored scale and the HSSF revealed a decreasing trend during the baselines, thus, it may be assumed that improvement is already in progress. However, Bloom and Fischer (1982) comment that such a phenomenon has been known to occur and they suggest that it may be due to an optimism evoked in the subject by the prospect of therapy. Consequently, these authors emphasize that baselines should be continued until a pattern indicating data stability is achieved. It has been mentioned previously that a lengthy baseline was considered unethical for the subjects participating in this study, therefore, baselines were not long enough to establish stability of data. It is suggested, however, that entry to the study may have resulted in the optimism noted by the above writers.

#### Profile for Subject #2

It was postulated that some improvement was evident in the data obtained from both scales. In particular, a marked change was noted to occur (Appendix E-2) in the subject's outlook of life, that is within the synthesis scales.

It is suggested that this change came about as a result of the subject becoming more accepting of herself and others. For example, she came to recognize that she was a high achiever and that she had achieved many of her goals; hope for the future which originally was perceived as a cure for her illness changed to mean freedom from pain (in all dimensions) which would come with her death; life's meaning changed too, insofar as this subject viewed death as another stage in her development.

It is noteworthy that as the disease progressed and physical pain increased the subject became more and more concerned about the possibility of having to ingest analgesics to which she had been addicted. That is, she felt that if such drugs were required to alleviate pain, she would lose her sense of dignity, worth and self-control.

#### Profile for Subject #3.

It was noted that data for the self-anchored scale items, pertinent to this subject, tended to "spike" frequently, particularly in those areas reflecting anger towards physicians and caregivers.

It is posited that this tendency is the result of the subject's experience. For example, since the treatment motivated the subject towards self-help, that is, he became a consultant with respect to his own health care, many caregivers, including physicians, viewed him as a threat to the health care decision-making process. Although the subject understood the helplessness sensed by caregivers insofar as they could offer no cures, there were occasions when behaviours and verbal remarks justified the subject's anger. For instance, the fact that this subject made his will and funeral arrangements indicate that he understood the



terminal nature of his illness, yet, because he sought to participate in an experimental drug treatment for AIDS, insisted on healthy nutrition, refused to participate in unrewarding group activities, refused to take prescribed medication known to affect his AIDS treatment, took active steps to change existing unfair policies with respect to the availability of AIDS treatment drugs for all PWAs and PTPs, and made every effort to maintain his handsome personal appearance, he was frequently accused of being unrealistic to a degree that psychiatric care was prescribed. In turn, this situation caused changes to occur periodically in other items in the scale as well as in the angers-1 and -2.

#### Profile for Subject #4.

Although no statements can be made with respect to the efficacy of the independent variable for this subject, results of both scales are such that some explanations are required.

The HSSF results indicate that the subject is experiencing satisfactory coping levels and this is supported by the results of the item cope in the self-anchored scale. In addition, many items such as angers-1, -2, -3, feelings of guilt and sin are denied, yet, the circumstances surrounding the subject's situation were such that a reversal of the obtained results would be more likely. Therefore, it is suggested that this subject may have relied on the defence mechanism denial to cope with his very stressful situation. This observation is in accordance with the literature (Kubler-Ross, 1969, 1987; Lamke & Marguardt, 1987; Salisbury, 1986; Saunders, 1978) on the psychosocial aspects of AIDS. Additionally, it is, essentially, in agreement with the subjective evaluation offered by the subject. It is important to note that the treatment

under examination accepts such mechanisms as ways of coping until such time as the subject is ready for change.

#### Profile for Subject #5.

The dramatic changes observed in the synthesis scales (Appendix E-5) require further explanations. For example, following treatment it is noted that the subject's hope for the future increased from 2 out of 20 to 20:20 and life's meaning changed from 3:20 to 20:20. As was noted for Subject #2 it appears that the treatment helped the subject to accept his mortality and other frustrations that are evoked as a consequence of the disease. In an attempt to turn these frustrations or stressors into satisfaction, the subject attended to the necessary business of settling his estate and last rites. Thereafter, he focused his attention on personal growth in terms of reviewing his life's achievements, social relationships, and recognizing relations between the present, the past and the future. In this way, the subject dealt with his feelings of guilt, sinfulness, insecurities, depression, potential loss of his own life, loss of friends, etc. This stage of acceptance to terminal illness has been noted by other authors and is a suggested goal of psychosocial treatment (Butler, 1979; Kobler-Ross, 1969, 1987; Salisbury, 1986; Saunders, 1978).

In addition, the above tasks appeared to be facilitated by the subject's interest in literature that promoted a holistic view of life especially as it pertained to the spiritual dimension and the utility of maintaining a sense of humour.

### Profile for Subject #6

For this subject, as with Subjects #2 and #5, exceptional changes are noted to exist between pre- and post-treatment synthesis scales. Again, the same reasons that were offered for Subject #5 are reiterated for this subject because as soon as the subject expressed the fact that no cure was forthcoming for his illness and that his early demise was inevitable, he voiced the need to formally make his will, his funeral arrangements and to say his goodbyes. Upon completion of these tasks the subject became more outgoing and felt himself to be more in control of his life. Nevertheless, as may be observed in the visual examination of the self-anchored scale, the subject continued to experience frustration, however, the intensity was not perceived to be so acute and he felt in control despite frequent frustrations.

### Summary

Notwithstanding the statistically significant improvement noted for the four subjects who completed the study, it is suggested that subjects will, at times, as the disease progresses, experience overwhelming amounts of frustration relative to total satisfactions and at such times effective professional intervention should be available.

At this time, for this sample, appropriate psychosocial counselling is not readily available within the Agency. Moreover, these subjects did not feel that the available support systems met their needs. For example, incidences of confidentiality infractions were cited by subjects after counselling sessions, support group interactions and meetings with "buddies." In addition, support group fellowship was seen to cause problems rather than to alleviate them. For example, some subjects

viewed the group-interactions as "senseless, depressing, bitching sessions." This, then, presents a problem for those subjects who completed the study and whose major goal is to pursue personal growth and to experience the joys of living for each day. That is, their focus is on the positive rather than the negative aspects of living with a terminal illness.

Essentially, the treatment under study fulfills the criteria for an effective intervention as outlined by professionals caring for this population (Bennett, 1987; Bohm, 1987; Flaskerud, 1987; Graham & Cates, 1987; Mack & Turner, 1986; Macks, 1987; Mandel, 1987; Reed, Wise & Mann, 1984; Salisbury, 1986; Wells, 1987) insofar as crisis situations, grief, anxiety, depression, fears, despair are acknowledged and dealt with in the course of treatment. Further, the treatment facilitates the person's acceptance of the disease and its implications as well as the promotion of behaviours that encourage personal coping as is suggested by Salisbury (1986).

In addition, the treatment incorporates the suggested principles for the psychosocial care of the terminally ill (Allison, Gripton & Rodway, 1983; Kubler-Ross, 1969, 1987; Moynihan, Christ & Gallo Silver, 1988; Saunders, 1976, 1978). Moreover, it embodies opportunities for learning stress management by utilizing frustration to create satisfaction, in that subjects learned to identify internal and external resources (Germain, 1979, 1984; Germain & Citterman, 1980) and used these resources to increase their coping powers and their perceptions of self-discovery.

Additionally, the study confirmed the existence of prevailing themes related to AIDS sufferers that other writers (Buckingham, 1987; Buckingham & Van Corp, 1988; Christ & Wiener, 1986; Conant et al., 1987;

Dilley et al., 1985; Frierson et al., 1987; Furstenburg & Olson, 1984; Kaplan et al., 1987; Kelly et al., 1987; Phair, 1988; Plotkin & Domanski, 1987; Rowe et al., 1988; Stulberg & Buckingham, 1988) noticed during their interaction with PWAs and PTPs. Themes of depression, suicidal ideation, financial insecurity, anger, denial, anxiety, fatigue, uncertainty, social isolation, rejection by family members, friends and lovers, guilt, hopelessness, feelings of sinfulness, violations of confidentiality, homophobia and stigmatization were observed to be present in the life-experiences of these subjects.

As well, other themes were disclosed during the treatment process that are noteworthy. Subjects did not appear to have an accurate understanding of the disease transmission. This resulted in self-imposed restrictions with respect to intimate activities with lovers which, in turn, created strains on the relationship and poor communication patterns. That is to say, although sexual gratification is an important part of human welfare, it is particularly so for homosexuals. Nevertheless, it is emphasized that for this group safer sex behaviours were equally, if not more, important.

Boredom is another theme that became evident. Because these subjects were physically incapable of adequately meeting full-time or part-time job expectations in their fields, the subjects' sense of "usefulness" seemed to be compromised. It is also true for the part-time employed subjects. This is in agreement with Heimler's (1967, 1982) position when he suggests that, in our society, meaningful employment correlates highly with a person's sense of self-worth. To compound the

issue, some subjects were acutely aware that their "life's ambitions" would never be realized.

Further, it was observed in the beginning phase of treatment that subjects responded to the HSSF question, "To what extent does your life have a meaning?" in such a way as to indicate that meaning was the result of external factors. The same was true for the question relating to "hope for the future." In essence, this appeared to contribute, even to complicate, the sense of helplessness/hopelessness noted by other writers (Allison, Gripton & Rodway, 1983; Kubler-Ross, 1969, 1987). As the treatment progressed, however, these observations were reversed insofar as the subjects perceived life's meaning to be within them, something they were responsible for; likewise, hope for the future lay in their own thoughts and behaviours.

Interestingly, Allison, Gripton & Rodway (1983) observed that the young subjects in their study of the terminally ill had greater difficulty in accepting and acknowledging life's termination and they suggested that their stage of development made it difficult to give up "one view of the world and accept another for which they were not prepared." That is, socialization tends to emphasize productivity in terms of economic and material gains while philosophical increments are not valued by society, at least in this stage of development. Yet, as inferred above, young people can understand and accommodate philosophical aspects of life. Also, it was revealed that subjects did not have a happy nor a secure childhood all of the time and most of them did not see their childhood as being a good preparation for adulthood, however, as they became more aware and accepting of their own uniqueness, family relationships appeared to improve.

Lastly, education in terms of a holistic approach to health care and knowledge of the disease process, its transmission and prevention appeared to assist the subjects' in achieving a sense of control. Indeed, it is suggested that possibly their illness became a catalyst for change and personal growth.

#### Limitations of the Study

Single-system research on human subjects cannot be conducted without some limitations. Unlike laboratory studies where control over internal validities is presumed to be constant, the clinical situation is such that environmental control can never be assured. Moreover, traditional experimental criteria such as randomization of treatments, randomization of subject selection, placebo group and large populations have not been possible in this study. As was previously explained, it was not possible to establish stable baselines because of the subjects' health statuses. Moreover, threats to internal validity were difficult to control because many professionals contributed to the subjects' care. Also, they engaged in a variety of supportive activities. Further, the attrition rate was high due to the terminal nature of the disease from which the subjects suffered.

Finally, single-system designs requires the use of instruments demonstrating high ( $>.80$ ) reliability and validity coefficients and this study did not fully meet this requirement because of the paucity of available instruments for this type of research. Other limitations of the study were recorded previously.

### Implications for Social Work Practice and For Further Research

The findings of this study indicate that the Heimler approach to the psychosocial care of persons suffering from AIDS provides a unique and effective treatment.

HSF is unique in that the person's needs are immediately identified through the administration of the scale. Also, recognition of maladaptive behaviours such as suicidal ideation, drug abuse, unsafe sexual activity and actions that cause trouble to self and others are facilitated. This method is also unique in that it espouses a holistic approach to health care; for example, the physical, emotional, intellectual social and philosophical aspects of life are examined in a non-threatening manner. This, in turn, facilitates self-awareness and self-acceptance.

Therefore, the Heimler approach is particularly effective in the psychosocial care of the terminally ill. The study demonstrated that it is possible for young persons to gain deeper meanings of their lives and to turn frustration to satisfaction although it is acknowledged that times occur when perception of frustrations are likely to be such that professional counselling will be required to re-establish a balance.

The Heimler method is also effective in that it helps to identify and to respond to the many uncertainties reported and found to be prevalent in this population. The study revealed that subjects were not aware of areas in their lives that contributed to either their sources of satisfaction or frustration. Therefore, as a result, it is inferred that their levels of anxiety/distress is increased. This situation may have been responsible for the headaches and other aches and pains noted before treatment was initiated and which were void after treatment. Further-



more, it was observed that drug use for relaxation purposes had decreased or was stopped by subjects who completed the study.

The Heimler Scale proved to be a useful tool in determining the subjects' coping ability. In essence, information from the scale has the potential to assist the numerous professionals that are necessary for the provision of effective, compassionate health care to this relatively young, terminally ill population. Since this approach considers the uniqueness of each individual's lifestyle it also considers the uniqueness of each individual's terminality.

Although this treatment has been used successfully in the care of the terminally ill (Allison, Gripton & Rodway, 1983) and the method is practiced by many social workers, some physicians, some psychologists and some nurses, not many research articles have been published. Publications have dealt mainly with clinical practice. Most practitioners of this method find it accurate in terms of diagnosis as well as efficient and effective as a treatment method. However, there are others who state that it is time consuming in terms of interpreting the scale and they feel that clients in their practice require a more directive treatment approach.

Replication of the study is recommended to establish external validity. That is, if replication produced the same results the findings of this study would be more conclusive. As well, a longitudinal group/control study that would commence with the person's diagnosis of HIV positivity and continue as the disease progresses to its final stages, would be beneficial in terms of determining the extent to which stress effects prolongation and quality of life. That is, it is hypothesized that the group receiving HSF would not experience emotional breakdown or

suicidal behaviours to the same extent as the control group. Additionally, it was noted that the existing support groups do not serve their expected function effectively, therefore, a study/survey designed to identify inadequacies of dynamics in existing support groups and to determine the special needs and expectations of group members would not only establish consumer satisfaction it would also contribute to agency accountability.

Lastly, it was inferred in Chapter Two that many young people, specifically university students, are not aware of their vulnerability with respect to the HIV. More specifically, many of them are unfamiliar with "safer sex" behaviours, yet many are exposed, for the first time, to situations where sexual activities and drug abuse (alcohol) are socially applauded. Therefore, it is hypothesized that a study designed to determine the students' understanding of the hazards of this disease would be a beginning step towards an effective education program.

In summary, then, this exploratory study examined the effects of a treatment model, HSF, for the psychosocial care of persons suffering from AIDS. A review of the literature was provided and underlying theories and conceptualizations were outlined. The methodology was described and limitations/difficulties were identified. The overall findings suggest that the treatment produced significant change at the prescribed probability level for four out of seven subjects. The remaining subjects died before completion of the study. Further replications of the study were recommended to establish external validity. Finally, areas for possible future research were outlined.

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APPENDIX A

LETTER TO POTENTIAL SUBJECTS  
FROM RESEARCHER

Room 1043  
Faculty of Social Welfare  
The University of Calgary  
Tel. 220-7412  
239-0489 (home)

Dear :

I would like to welcome you to the study and to thank you for your willingness to participate in my research.

I am enclosing a copy of the consent/contract form to give you an opportunity to read it at your leisure before signing it at our interview.

I shall expect you to contact me in the very near future to set up a convenient time for us to meet. I am available at the above number during the week, except for Thursday, from 9 AM to 3 PM and at home in the evenings.

Thanks again.

I am,  
Yours sincerely

Irene Orgnero

APPENDIX B

CONTRACT

## CONSENT/CONTRACT FORM:

I understand that:

- The purpose of this study is to examine the effectiveness of a specific short-term treatment, Heimler's Social Functioning, for counselling AIDS sufferers.
- Participation in the study is completely voluntary and I may withdraw from the study at any time without penalty.
- I will attend weekly interviews with the investigator, Irene Orgnero, until the treatment is completed.
- Confidentiality will be maintained insofar as my identity will not be released unless under certain circumstances, which have been defined to me, at which time my consent will be requested; written records and/or audio tape-recordings will be identified by a number or other pseudonym of my choice.
- The study will continue over a period of twenty weeks, three weeks for collecting data in order to identify specific individual problems, twelve weeks for counseling, and a follow-up interview four weeks later for the purpose of determining change.
- One inventory will be completed by me during the first, second and third interviews, thereafter every second week for twelve weeks and again at the follow-up interview, I will complete the scale devised by myself and the researcher, as agreed, on a daily basis over the twenty weeks.
- My responses (to the scales) will be analyzed and the results of the study will be written for the purpose of disseminating information.
- On completion of the study, all original written records/notes will be destroyed by burning or erasing as in the case of tapes.
- The investigator, Irene Orgnero, will respond to my questions to the best of her ability under the guidance of her supervisor, Dr. Peggy Rodway.
- Results of the study will be passed to me if I so desire.

Investigator:

Participant:

Date:

Date:



APPENDIX C  
SELF-ANCHORED SCALE

## SELF-ANCHORED SCALE CONSTRUCTED BY THE AUTHOR

- 1) Extent of your feelings of anger towards physicians.  
 1 2 3 4 5 6 7 8 9  
 no anger moderate angry enough  
 to hurt someone
- 2) Extent of your feelings of anger towards care-givers  
 1 2 3 4 5 6 7 8 9  
 no anger moderate angry enough  
 to hurt someone
- 3) Extent of your feelings of anger towards yourself.  
 1 2 3 4 5 6 7 8 9  
 no anger moderate angry enough  
 to hurt myself
- 4) Extent to which you feel guilty that you contracted AIDS.  
 1 2 3 4 5 6 7 8 9  
 I am not I am somewhat I am fully  
 to blame to blame to blame
- 5) Extent to which you feel anxious.  
 1 2 3 4 5 6 7 8 9  
 Relaxed Some tension Very uptight  
 all the time
- 6) Extent to which you feel independent.  
 1 2 3 4 5 6 7 8 9  
 Totally Moderate Dependent on  
 independent others all  
 the time
- 7) Extent to which you feel you are a good person.  
 1 2 3 4 5 6 7 8 9  
 Good Moderate Sinful
- 8) Extent to which you feel your ability to remember has changed.  
 1 2 3 4 5 6 7 8 9  
 Unchanged Often I Often  
 forget confused
- 9) Extent to which your body has changed.  
 1 2 3 4 5 6 7 8 9  
 The same Moderate Total  
 change

## APPENDIX D

## DIAGRAM OF DIMENSIONS

## APPENDIX D

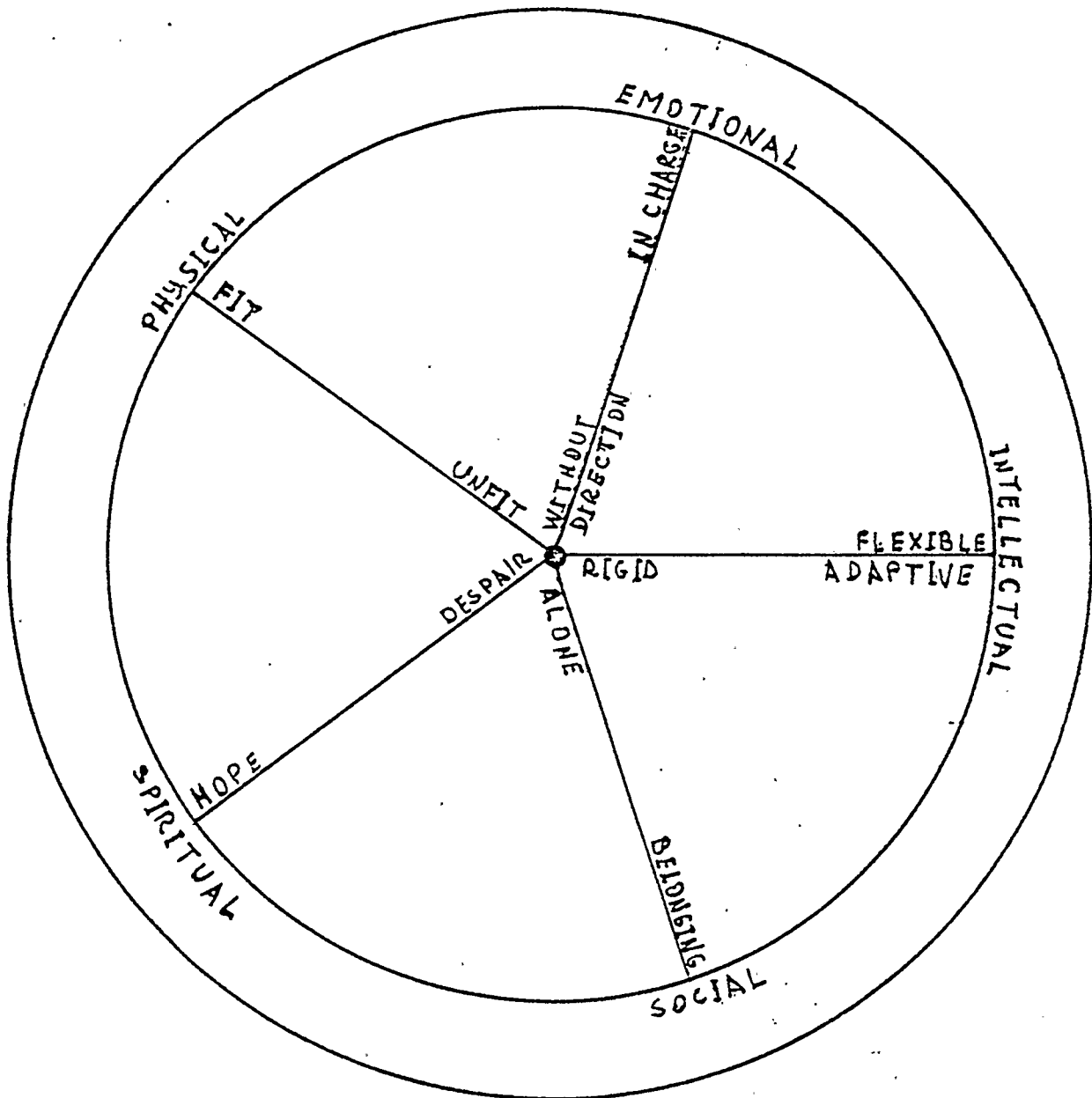
A Diagram that Illustrates the Interrelationships  
among a person's dimensions

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### PERSONAL WELLNESS WHEEL

A dot to dot activity! Directions:

1. Place a dot on each spoke indicating where you are.
2. Connect the dots
3. Does your wheel roll?



APPENDICES E  
HSF INTERPRETATIONS

APPENDIX E-1  
PROFILE FOR SUBJECT #1

A brief examination of the subscales within the three indices which comprise the HSSF is conducted to locate sources of problems. Although the outer limits of satisfaction levels in the areas of work, finance, friendships and intrapersonal are considered satisfactory, those relative to both family of origin and secondary family are critical. For example, his childhood was neither secure nor happy, also he would not want his family members to share their problems with him. Yet, his childhood is seen as a good preparation for adult life. With respect to his secondary family he feels he understands his ex-wife and he can discuss money, work and other problems with her. However, he is not interested in her hobbies, nor in family life and he feels that he is not understood. On the intrapersonal dimension the question of concern is his inability to relax.

A glance at the negative index shows that energy, health and moods are areas of concern. For example, he feels overworked and is sometimes too tired to work. Also, he is sometimes too tired to enjoy life and he feels frustrated because he is prevented from doing things properly. He is concerned about his health as he suffers frequent headaches and other aches and pains, however, sex is not unwelcome and his imagination is not painful. In addition, this subject is often depressed, feels vaguely insecure and wishes that he were dead. He takes prescription drugs for depression.

The synthesis scale reflects that this subject's life has total meaning (20:20), scope for self-expression has also been complete

(20:20) and life is worth the struggle (20:20). Yet, he has achieved his life's ambition 5:20 and his hope for the future is 15:20.

A brief review of the interpretation of the HSSF measures for the last scale of Phase B shows that both families are now sources of moderate satisfaction. He sees people in his childhood as being really caring. Also, in his childhood, there were times when he felt happy and secure. As well, he feels he can relax and he is in the process of withdrawing from the drug treatment for depression.

His relationship with his secondary family has also changed insofar as he now enjoys family life, he is interested in his ex-wife's hobbies/activities. He no longer feels that he fully understands his ex-wife and he feels that sometimes she understands him.

The negative index reveals that sometimes he is too tired to work; although his health is still a concern he has no headaches but sometimes he has other aches and pains. In addition, he sometimes feels very depressed and he sometimes takes prescription drugs. Lastly, with respect to the synthesis index, the area of greatest change is that which refers to the extent that he has achieved life's ambition; this is now 17:20.

APPENDIX E-2  
PROFILE FOR SUBJECT #2

A closer look at the three indices, starting with that of satisfaction, reveals that this subject's greatest satisfaction comes from her friendships; her personal situation is one of moderate satisfaction although she does not enjoy sex and she has difficulty relaxing. The area of least satisfaction, and this is at a critical level, is that of her financial situation. She lives less comfortably than two years before, she is unable to save and she is, and feels, financially insecure. Although she has a part-time job (her only source of income), which she likes, it does not offer opportunities for advancement. Moreover, she does not have any satisfying hobbies. With respect to her primary family she does not feel that her childhood was happy, she is uncertain as to whether people in her childhood really cared, whether it was secure and whether it was a good preparation for adulthood. However, she would want her family members to turn to her with their problems.

The area of greatest frustration is that of health which is at the upper limits, thus, it represents a crisis situation. She suffers from frequent headaches, other aches and pains, painful images and she is very concerned about her health.

The next area of concern is that of moods which supports the position that this subject is very depressed and suicidal. The area related to energy suggests that a great deal of her energy is blocked. The area reflecting personal influence indicates some sense of injustice or persecution is being experienced, and, lastly, the habits area supports her statement regarding drug abuse, insofar as she does not



drink alcoholic beverages and she does not ingest prescription nor non-prescription drugs to help her to relax nor for other purposes. She does, however, tend to eat too much "junk" food and she tends to get overexcited. But, she does not do things that would cause trouble for herself and others.

The synthesis index, which is measured on a scale of 1 to 20 (least to greatest), discloses that this subject sees herself as having achieved her ambition in life 11:20; the extent to which she feel hopeful for the future is 3:20; the extent to which she feels life has meaning is 5:20; the extent to which life has given her scope for self-expression is 12:20; and the extent to which life was worth the struggle is 2:20. The last HSSF shows that her perceptions of satisfactions are increased for all areas, most notably in the area of her primary family. In areas of frustration, her health remains her greatest concern but not at the crisis level previously noted. Her sense of persecution is reduced and, although she sometimes feels depressed, suicidal ideation is denied. As well, her outlook on life is changed for the better: her hope for the future increased from 3 to 11; the extent to which life had meaning changed from 5 to 14 and the extent to which life was worth the struggle rose from 2 to 12.

APPENDIX E-3  
PROFILE FOR SUBJECT #3

A more detailed analysis of the first scale completed by this subject shows that his part-time job is a source of high levels of satisfaction, except for uncertainty with respect to the people with whom he works and available opportunities for advancement, he is sure of this source of satisfaction. Friendship and primary family are also areas of moderate satisfaction that present uncertainties within expected limits. Regarding his primary family, he is unsure that his childhood was a good preparation for adulthood. Finance and personal are areas of low satisfaction. For example, his financial situation does not permit him to live as comfortably as in the past; he is unable to save but sometimes he is reasonably secure financially. However, he does not feel financially secure. His personal area shows that although he likes being single, he does not enjoy the company of the opposite sex, nor does he like children. Sometimes sex brings enjoyment and sometimes he can relax.

The frustration index suggests that energy is blocked in that, although not overworked nor frustrated by being prevented from doing things properly, he feels too tired to work, his mind is sometimes underactive in terms of intellectual stimulation and sometimes he is too tired to enjoy life. His health scores are an area of maximum frustration insofar as he suffers from frequent headaches and other aches and pains. Sex is an unwelcome activity, he is concerned about his health and his imagination is painful. The moods area indicate that this subject

sometimes feels very depressed and at times wishes that he were dead. With respect to habits this subject does not drink alcoholic beverages. However, he does use prescription drugs to help him relax, Also, he eats too little and he is driven to do things that cause trouble for him and others.

This subject's outlook on life is very bright. Out of a scale of 1 to 20, he has achieved his ambition 14:20; his hope for the future is 14:20; life has meaning 18:20; his life has given him enough scope for self-expression 16:20; and life was worth the struggle 19:20.

A similar reading of the last scale completed for Phase B will help the reader to determine areas in which change has occurred. Part-time work brings complete satisfaction. Finances, friends and family are all sources of high levels of satisfaction. Intrapersonal satisfaction, also, has increased; changes disclose that being single is not always a source of satisfaction to this subject. As well, he likes members of the opposite sex and sometimes he likes children, sex brings enjoyment and he can relax.

A review of the negative index reveals that no energy is blocked. In regard to health, this subject remains concerned, however, he experiences no headaches, aches or pains and sex is not an unwelcome activity. However, his imagination is painful sometimes. The moods area shows that he no longer feels very depressed, nevertheless, there are times when he feels insecure and wishes he were dead. A look at habits indicates that he still does not drink alcohol, nor does he take prescription drugs to help him relax and neither does he do things that would cause trouble to himself and others.

The synthesis scores have increased in terms of hope for the future, the extent that life has meaning, and scope for self-expression. Overall, then, positive change has occurred.

APPENDIX E-4  
PROFILE FOR SUBJECT #4

A brief examination of areas within the indices, satisfaction, frustration and synthesis, may be helpful in understanding the needs of this subject. The outer limits of satisfaction for work, finances, friends and intrapersonal indicate moderate levels of satisfaction while those of primary family reveals an unhappy childhood which was sometimes insecure. Although he did not always feel that there were people who cared, he did feel that childhood was not a good preparation for adult life.

In the negative index, energy is blocked by a feeling of tiredness and an underactive mind. Health is an area of concern in that he suffers aches and pains, sex is unwelcome and he is worried about his health. With respect to mood, this subject feels very depressed sometimes and in regard to habits, he sometimes gets overexcited, eats too little and is driven to do things which cause trouble for himself and others.

The synthesis index, which is a scale of 1-20, reveals that this subject has achieved his life ambition half-way or 10:20; his hope for the future is 7:20; his life has meaning 20:20; life has given him scope for self-expression 18:20 and lastly, he saw life as being worth the struggle 15:20.

APPENDIX E-5  
PROFILE FOR SUBJECT #5

A further analysis of the first HSSF, as it pertains to areas within the three indices, permits a clearer picture of this subject's situation on entry to the study. This evaluation is then compared with that of the last scale which was completed four weeks after the treatment was withdrawn.

The area of least satisfaction is that of finance. His financial situation is critical insofar as he does not live as comfortably as before, he is not and does not feel financially secure and, although he is unable to save, he feels at ease about spending. The next area of concern is that which pertains to the personal area of his life. He is satisfied with his relationship with his lover and he is confident that his lover cares about him, however, sex does not bring enjoyment, he does not like to be with children and he is unable to relax. Although both families are considered to be sources of some satisfaction, it is noteworthy that his childhood was insecure and not a good preparation for adult life. His family life with his lover shows that they enjoy life together and can discuss money matters and other problems, but he does not always understand his partner nor does his partner always understand him. Also, he is not always interested in his partner's hobbies. Lastly, his greatest source of satisfaction comes from his friendships.

The area of greatest frustration is that of energy in that he feels too tired to work, his mind is underactive, and he feels too tired to enjoy life sometimes. Health is also an area of concern as he experiences aches and pains, sex is an unwelcome activity, he is worried about

his health and his imagination is sometimes painful. The mood area indicates that he is sometimes very depressed, sometimes he feels guilty, sometimes he wishes he were dead and he often feels insecure.

The area addressing habits shows that he takes prescription drugs to help him to relax, that he eats too little and sometimes he tends to get overly excited.

Lastly, the synthesis areas reveal that out of a scale of 1 to 20, he has half-way achieved his life's ambition; his hope for the future is 2:20; the extent to which life has meaning is 3:20; life has given him scope for self-expression 15:20 and, in looking back, he sees life as being worth the struggle 10:20.

An analysis of areas within the satisfaction index for the HSSF completed at the termination of the study show that finance remains an area of low satisfaction. The areas of friends, family and personal are seen as good sources of satisfaction. The areas within the negative index present no problem areas, further, the area concerned with habits shows that he does not take prescription drugs to help him relax. In terms of the synthesis index, it is noteworthy that out of a scale 1-20, his hope for the future increased to 20:20, likewise, the extent to which he feels that life has meaning.

APPENDIX E-6  
PROFILE FOR SUBJECT #6

An examination of the areas which comprise the positive index suggest that insufficient satisfactions are perceived by the subject in all areas. The subscale relating to finance is lowest and those of friendships and secondary family form the highest scores. The area relating to his primary family is void except for one item which indicates that he felt that there were people who cared for him. His childhood was neither happy nor secure. Further, it was not seen as a good preparation for adulthood and he would not want family members to come to him with problems. With respect to intrapersonal perception of satisfactions, he is dissatisfied with his partnership although he feels that his partner really cares for him. Sex does not bring enjoyment, sometimes he likes to be with children and sometimes he is able to relax.

In the negative or frustration index, the areas of greatest concern are those of energy, health and habits. He feels tired, his mind is underactive and he feels too tired to enjoy life. Also, he has frequent headaches, aches and pains, he is worried about his health and sometimes his imagination is painful. A look at the habits area reveals that he drinks (alcohol) too much, he takes prescription drugs to help him to relax, he gets overexcited, eats too little and sometimes, he is driven to cause trouble for himself and others.

The areas within the synthesis index indicate that on a scale of 1 to 20 he has achieved his ambition 8:20, his life has meaning 7:20, life has given him enough scope for self-expression 15:20 and, when he looks back, he feels life was worth the struggle 20:20.



For the purposes of comparison, the last scale before termination is reviewed and it is observed that the areas which comprise satisfaction are all at moderate levels except for finance. The area of greatest concern in the negative index is that of energy insofar as he still feels too tired to work and his mind is underactive. With respect to habits, he sometimes drinks too much but he does not take prescription drugs to relax.

Also, his outlook on life shows marked improvements. For example, he feels he has achieved his ambition 14 out of a scale of 1 to 20; his hope for the future is 19:20; life has meaning 18:20; life has given him scope for self-expression 20:20; and life is worth the struggle 19:20. In essence, in comparing these scales, it is noted that problems evident before treatment have been alleviated by the treatment.

APPENDICES F  
HSSF CALCULATIONS

## APPENDIX F-1

## HSSF DATA FOR SUBJECT #1

Computation for the Proportion/Frequency Test; steps to test for statistical significance.

1. Find typical zone which lies between the desired zone and the undesired zone.
2. According to HSSF Norms 0.3 is considered an approximate cut off score, therefore, greater than 0.3 is an undesired zone while less than 0.3 is a desired zone.
3. Determine how many times during the baseline that scores were in the desired zone and this is once.
4. Find the proportion of the specified occurrence during the baseline; that is, it occurred once out of three incidences or 0.33.
5. Determine the number of scores in the desired zone during the intervention phase which is 5, then compare with proportion frequency table to determine significance. For example:

Table showing the number of observations during Phase B for a statistical significance at the 0.05 level (Bloom & Fischer, 1982, pp.416-417).

Proportion of Observations in Phase A	Number of Observations in Phase B					
	4	(6)	8	10	-	-
.25	4	4	5	6		
.30	4	5	6	6		
(.33)	4	(5)	6	7		

To have a statistical significance at the 0.05 level five scores must occur in Phase B corresponding to the Phase A proportion of observations. For B - 1 data this is .33 (1/3).

## APPENDIX F-2

## HSSF DATA FOR SUBJECT #2

Calculations for the Two-Standard Deviation Band ApproachCalculation Steps:

1. For Baseline data only (S = Score)

$$S1 = 1.56$$

$$S2 = 1.45$$

2. Sum scores (
- $\Sigma S$
- )
- $\Sigma S = 3.01$

3. Calculate the mean (
- $\bar{X} = \Sigma S/N$
- )

$$\bar{X} = 3.01/2 = 1.51$$

4. Compute
- $\Sigma(S - \bar{X})^2$
- for all scores

$$= (S1 - \bar{X})^2 = (1.56 - 1.51)^2 = .0025$$

$$= (S2 - \bar{X})^2 = (1.45 - 1.51)^2 = .0036$$

(Purpose to get the Standard deviation)

$$\Sigma(S - \bar{X})^2 = .0061$$

5. Calculate Standard deviation

$$\sqrt{\frac{(S - \bar{X})^2}{n - 1}} = \sqrt{\frac{.0061}{1}} = .08$$

6. Calculate two Standard deviations =
- $.08 + .08 = .16$

7. Two Standard deviation band above
- $\bar{X} = 1.51 + .16 = 1.67$

8. Two Standard deviation band below
- $\bar{X} = 1.51 - .16 = 1.35$

9. If two or more consecutive data points fall outside the band in the desired zone during the treatment phase, the change is statistically significant at .05 level of probability (Bloom & Fischer, 1982).

APPENDIX F-3  
HSSF DATA FOR SUBJECT #3  
Calculation for the Two Standard Deviation Band Approach

Computation Steps:

1. Baseline data only record of observed score(s)
 

$S1 = .69$   
 $S2 = .67$   
 $S3 = .68$
2. Sum scores ( $\Sigma S$ )  $\Sigma S = 2.04$
3. Calculate the mean ( $\bar{X} = SS/N$ )  $\bar{X} = 2.04/3 = .68$
4. Compute  $\Sigma(S - \bar{X})^2$  for all scores
 

$= (S1 - \bar{X})^2 = (.69 - .68)^2 = .0001$   
 $= (S2 - \bar{X})^2 = (.67 - .68)^2 = .0001$   
 $= (S3 - \bar{X})^2 = (.68 - .68)^2 = 0$

(Purpose to get the Standard deviation)

$(S - \bar{X})^2 = .0002$
5. Calculate Standard deviation
 

$$\sqrt{\frac{(S - \bar{X})^2}{N-1}} = \sqrt{\frac{.0002}{2}}$$

$$= .01$$
6. Calculate two Standard deviations
 

$= .01$   
 $= \frac{+.01}{.02}$
7. Two Standard deviations above mean
 

$= .68$   
 $= \frac{+.02}{.70}$
8. Two Standard deviations below mean
 

$= .68$   
 $= \frac{-.02}{.66}$
9. If two or more consecutive data points fall outside the band in the desired zone during the treatment phase, the change is statistically significant at .05 level of probability (Bloom & Fischer, 1982).

APPENDIX F-5  
HSSF DATA FOR SUBJECT #5  
Calculation for the Two Standard Deviation Band Approach

1. Baseline data only record of observed score(s)
 

$S1 = .67$   
 $S2 = 1.52$   
 $S3 = 1.52$
2. Sum scores ( $\Sigma S$ )
 

$\Sigma S = 3.71$
3. Calculate the mean ( $\bar{X} = \Sigma S/N$ )
 

$\bar{X} = 3.71/3 = 1.24$
4. Compute  $\Sigma(S - \bar{X})^2$  for all scores
 

$= (S1 - \bar{X})^2 = (.67 - 1.24)^2 = .33$   
 $= (S2 - \bar{X})^2 = (1.52 - 1.24)^2 = .09$   
 $= (S3 - \bar{X})^2 = (1.52 - 1.24)^2 = .09$   
 (Purpose to get the Standard deviation)

$(S - \bar{X})^2 \quad \Sigma = .51$
5. Calculate Standard deviation
 

$$\sqrt{\frac{(S - \bar{X})^2}{N-1}} = \sqrt{\frac{.51}{2}} = .5$$
6. Calculate two Standard deviations
 

$= .5 \times 2 = 1.0$
7. Two Standard deviations above mean
 

$= 1.24$   
 $\quad +1.00$   
 $\quad \hline 2.24$
8. Two Standard deviations below mean
 

$= 1.24$   
 $\quad -1.00$   
 $\quad \hline .24$
9. If two or more consecutive data points fall outside the band in the desired zone during the treatment phase, the change is statistically significant at .05 level of probability (Bloom & Fischer, 1982).

APPENDIX F-6  
HSSF DATA FOR SUBJECT #6  
Celeration Line Computation Steps

1. Baseline data only record of observed score(s)
 

$S1 = 1.7$   
 $S2 = 2.35$   
 $S3 = 1.55$   
 $S4 = 2.00$
2. Divide Base by 2
 

$1st\ half = 1.7 + 2.35 = 4.05 = x = 2.025 = 2.03$   
 $2nd\ half = 1.55 + 2.00 = 3.55 = x = 1.775 = 1.78$
3. Get mean for each half and record on graph.
4. Connect the two intersections with a line.
5. Extend the celeration line into the intervention phase.
6. Compare number of observations in intervention period with Table in relation to proportion of observations in baseline period. Baseline proportion is obtained by dividing number of data points above/below celeration with total number of data points.

Table: Representing Significance at the .05 Level  
(Bloom & Fischer, 1982, pp.416-17)

Proportion of Observations in Baseline Phase		Number of Observations in the Intervention Phase			
		4	⑥ ↔ ⑧	10	-
.5	.05	2	2	3	3
	.10	3	3	3	4
	.125	3	3	4	4
	.15	3	3	4	4
	:				
	.45	4	6	7	8
2/4	.50	-	⑥ ↔ ⑦	9	

Seven observations fall below the line (Figure B-6) therefore, statistical significance is at the .05 level of probability.

APPENDICES G  
DESCRIPTION OF STATISTICAL TESTS



## APPENDIX G-1

## DESCRIPTION OF THE PROPORTION/FREQUENCY STATISTICAL TEST

The proportion/frequency approach to the statistical analysis of single system designs is a technique that compares the typical patterns of events during the baseline with the outcome emerging from the treatment, using expanded binomial distribution tables provided for this purpose (Bloom & Fischer, 1982, pp.116-117, 448-453). Typical refers to a representative class or set of events; for example, the coping index represents the satisfaction/frustration balance perceived by the subject and norms have shown that a person experiencing greater than 30 percent (.3) frustration (in relation to satisfaction) is not able to cope adequately with the demands of living. On the other hand norms have shown that a person showing a coping index of less than .3 copes well with the stress of daily living demands. Therefore, for the analysis of this data, two zones are considered: the desired and the undesired zones (Figure B-1) (See Appendix F-1 for calculation steps).

This statistic is chosen because, according to Bloom and Fischer (1982), it is an efficient analytical method which can be used when there are more intervention records than baseline data points. Further, this subject's data does not lend itself to other statistical tests for the single system design approach. It is, however, pointed out (Bloom & Fischer, 1982) that baseline data should be stable and independent for the use of this test. Therefore, the results may be erroneous because it was not possible to meet these assumptions, insofar as baseline data points are too few to establish stability and/or to test for independence.

## APPENDIX G-2

## THE TWO-STANDARD DEVIATION BAND (Shewart, 1931)

This method of statistical analysis was developed by Shewart almost sixty years ago for the evaluation of industrial quality control (Bloom & Fischer, 1982). These authors consider this tool useful for the analysis of data generated by the single subject research approach. Briefly, the mean level of baseline measures is identified, then two standard deviation bands are constructed above and below the mean. Successive observations falling outside of the bands during the treatment phase (in the desired zone) indicate statistical significance. For example, Bloom and Fischer (1982) cite Gottman and Leiblum as having noted that two successive observations occurring in the treatment phase indicate statistical significance at .05 probability level.

This statistic is considered appropriate not only because it was developed for intensive research but also because it can be applied to any number of baseline data, even less than five (Bloom & Fischer, 1982). That is, the computation of the band widths consider the actual number of baseline observations. As well, this statistic is recommended for fluctuating data. However, data is assumed to be independent, therefore, baseline observations should be tested for autocorrelation. The mathematical formula, however, requires at least five data points for the test to be carried out.

## APPENDIX G-3

## A DESCRIPTION OF THE CELERATION LINE STATISTICAL TEST

According to Bloom and Fischer (1982) the celeration line is one of the simplest analytical approaches for the determination of statistical significance in data. This method is also known as the semi-average (Neiswanger, 1956) and the split-middle test (Kazdin, 1982). Like the two standard deviation band statistic, it was first developed for use in business.

The celeration line refers to a line that connects the midpoints of the two halves of the baseline data (Figure B-6) drawn in such a way that the celerating, or decelerating, line extends across the intervention phase. That is, the line follows the trend noted in the baseline. The statistical significance is estimated by observing the number of data recorded on the desired side of the line during the intervention phase (Bloom & Fischer, 1982). Then, the observed data number is compared to data provided in a specially constructed table of the cumulative Binomial Probability Distribution Tables (Bloom & Fischer, 1982, pp.416-421)<sup>1</sup>. For example, the binomial applied to the test would be the probability of obtaining  $x$  data points above/below the projected slope given the null hypothesis states no change will occur.

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<sup>1</sup>Tables of the cumulative Binomial Probability Distribution were originally constructed by the staff of the Harvard Computational Laboratory under the direction of Dr. James Norton, Jr., Indiana University, Purdue University at Indianapolis, 1973.

This test is considered appropriate because the Two Standard Deviation Band test could not be applied to this data. The baseline scores are too high, as a result, the upper band extends beyond the data boundary. In addition, the celeration line considers data dependence because the trend of the data is taken into account in the calculation of the line. As well, the technique is well-suited to the logic of single-system designs as it examines change across time phases by projecting the baseline slope across the phases.

APPENDICES H  
AUTOCORRELATION CALCULATIONS

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## APPENDIX H-1

Autocorrelation tests for the data obtained from the self-anchored scale. Except for the first three lags of anger-1, and the first lag of anger-2 data are independent.

ANGER1		ANGER2		ANGER3		ANXIETY.	
LAG	CORR.	LAG	CORR.	LAG	CORR.	LAG	CORR.
1	0.719	1	0.553	1	-0.047	1	0.270
2	0.722	2	0.419	2	-0.049	2	0.297
3	0.501	3	0.241	3	-0.051	3	0.266
4	0.424	4	0.271	4	-0.053	4	0.137
5	0.249	5	0.289	5	-0.055	5	-0.146
6	-0.106	6	0.123	6	-0.057	6	-0.100
7	-0.035	7	0.071	7	-0.059	7	-0.101
8	-0.177	8	-0.052	8	-0.061	8	-0.165
9	-0.160	9	0.030	9	-0.063	9	-0.066
10	-0.262	10	-0.116	10	-0.065	10	-0.052
11	-0.238	11	-0.188	11	-0.022	11	-0.210
12	-0.280	12	-0.185	12	-0.024	12	-0.011
13	-0.296	13	-0.140	13	0.020	13	0.022
14	-0.305	14	-0.121	14	0.018	14	-0.117
15	-0.288	15	-0.227	15	0.016	15	-0.075
16	-0.311	16	-0.291	16	0.014	16	-0.043
17	-0.229	17	-0.273	17	0.012	17	-0.301
18	-0.213	18	-0.228	18	0.010	18	-0.132
19	-0.164	19	-0.210	19	0.008	19	-0.033
20	-0.148	20	-0.192	20	0.006	20	-0.086
21	-0.065	21	-0.146	21	0.004	21	-0.079

COPE.		SIN		MEMORY.		BODYM.	
LAG	CORR.	LAG	CORR.	LAG	CORR.	LAG	CORR.
1	-0.068	1	-0.047	1	0.411	1	0
2	-0.032	2	-0.049	2	0.204	2	-0.207
3	-0.037	3	-0.051	3	0.051	3	-0.003
4	0.118	4	-0.008	4	-0.103	4	0.194
5	-0.048	5	-0.010	5	-0.256	5	0.063
6	-0.033	6	-0.012	6	-0.201	6	-0.083
7	-0.038	7	-0.014	7	-0.093	7	-0.071
8	-0.044	8	-0.016	8	-0.247	8	-0.068
9	-0.049	9	-0.018	9	-0.105	9	0.138
10	-0.055	10	-0.020	10	-0.239	10	-0.002
11	-0.060	11	-0.022	11	-0.113	11	-0.269
12	-0.066	12	-0.024	12	0.067	12	-0.002
13	-0.071	13	-0.026	13	0.107	13	0.129
14	-0.077	14	-0.028	14	0.059	14	-0.141
15	-0.082	15	-0.030	15	0.027	15	-0.336
16	-0.088	16	-0.032	16	-0.048	16	-0.133
17	0.148	17	-0.034	17	-0.018	17	0.001
18	-0.078	18	-0.036	18	-0.051	18	-0.087
19	-0.083	19	-0.038	19	-0.030	19	0.003
20	-0.088	20	0.006	20	-0.009	20	-0.133
21	0.389	21	0.004	21	0.012	21	-0.064

## APPENDIX H-3

Autocorrelation tests for the data obtained from the self-anchored scale. First scores for anger-1, anger-2, memory and body M are serially dependent.

ANGER 1		ANGER 2		ANGER 3		GUILT		ANXTETY	
LAG	CORR.	LAG	CORR.	LAG	CORR.	LAG	CORR.	LAG	CORR.
1	0.791	1	0.757	1	0.528	1	0.564	1	0.593
2	0.684	2	0.677	2	0.472	2	0.470	2	0.470
3	0.672	3	0.626	3	0.354	3	0.368	3	0.356
4	0.608	4	0.538	4	0.250	4	0.349	4	0.250
5	0.551	5	0.556	5	0.181	5	0.219	5	0.295
6	0.452	6	0.468	6	0.132	6	0.134	6	0.213
7	0.450	7	0.470	7	0.083	7	0.092	7	0.257
8	0.415	8	0.496	8	0.014	8	0.138	8	0.247
9	0.307	9	0.423	9	0.028	9	0.138	9	0.263
10	0.241	10	0.378	10	-0.028	10	0.108	10	0.197
11	0.206	11	0.342	11	-0.097	11	-0.067	11	0.146
12	0.179	12	0.264	12	-0.097	12	-0.040	12	0.138
13	0.092	13	0.235	13	-0.160	13	-0.170	13	0.106
14	0.099	14	0.181	14	-0.174	14	-0.236	14	0.106
15	0.132	15	0.131	15	-0.111	15	-0.331	15	0.174
16	0.099	16	0.087	16	-0.181	16	-0.342	16	0.107
17	0.043	17	0.023	17	-0.188	17	-0.332	17	0.038
18	0.003	18	-0.043	18	-0.008	18	-0.266	18	-0.107
19	-0.044	19	-0.099	19	-0.001	19	-0.208	19	-0.143
20	-0.079	20	-0.133	20	-0.023	20	-0.143	20	-0.166
21	-0.073	21	-0.178	21	-0.023	21	-0.179	21	-0.195
22	-0.120	22	-0.150	22	-0.042	22	-0.126	22	-0.198
23	-0.122	23	-0.196	23	-0.160	23	-0.160	23	-0.148
24	-0.122	24	-0.272	24	-0.139	24	-0.138	24	-0.108
25	-0.183	25	-0.322	25	-0.118	25	-0.259	25	-0.176
26	-0.204	26	-0.347	26	-0.160	26	-0.215	26	-0.208
27	-0.251	27	-0.331	27	-0.049	27	-0.140	27	-0.171
28	-0.277	28	-0.358	28	-0.076	28	-0.173	28	-0.270
29	-0.300	29	-0.338	29	-0.049	29	-0.143	29	-0.253
30	-0.316	30	-0.283	30	-0.083	30	-0.126	30	-0.207
31	-0.271	31	-0.266	31	-0.066	31	-0.108	31	-0.177
32	-0.263	32	-0.277	32	-0.144	32	-0.075	32	-0.242
33	-0.276	33	-0.293	33	-0.035	33	-0.098	33	-0.192
34	-0.297	34	-0.301	34	-0.014	34	-0.043	34	-0.160
35	-0.306	35	-0.323	35	-0.111	35	-0.043	35	-0.138
36	-0.270	36	-0.302	36	-0.097	36	0.000	36	-0.138

COPE		SIN		MEMORY		BODY	
LAG	CORR.	LAG	CORR.	LAG	CORR.	LAG	CORR.
1	0.581	1	0.320	1	0.732	1	0.869
2	0.300	2	0.217	2	0.555	2	0.757
3	0.015	3	0.114	3	0.555	3	0.711
4	0.145	4	0.211	4	0.555	4	0.706
5	0.210	5	0.088	5	0.555	5	0.646
6	0.108	6	0.003	6	0.555	6	0.588
7	0.093	7	0.078	7	0.555	7	0.552
8	0.093	8	0.101	8	0.555	8	0.518
9	0.333	9	0.140	9	0.555	9	0.491
10	0.400	10	0.163	10	0.555	10	0.455
11	0.400	11	0.186	11	0.555	11	0.383
12	0.400	12	0.110	12	0.555	12	0.287
13	0.400	13	0.133	13	0.555	13	0.237
14	0.400	14	0.031	14	0.555	14	0.196
15	0.400	15	0.008	15	0.555	15	0.150
16	0.400	16	0.035	16	0.555	16	0.104
17	0.400	17	0.106	17	0.555	17	0.006
18	0.400	18	0.121	18	0.555	18	0.080
19	0.400	19	0.057	19	0.555	19	0.152
20	0.400	20	0.012	20	0.555	20	0.160
21	0.400	21	0.142	21	0.555	21	0.191
22	0.400	22	0.050	22	0.555	22	0.276
23	0.400	23	0.060	23	0.555	23	0.338
24	0.400	24	0.047	24	0.555	24	0.358
25	0.400	25	0.011	25	0.555	25	0.290
26	0.400	26	0.074	26	0.555	26	0.317
27	0.400	27	0.017	27	0.555	27	0.363
28	0.400	28	0.039	28	0.555	28	0.435
29	0.400	29	0.104	29	0.555	29	0.435
30	0.400	30	0.140	30	0.555	30	0.477
31	0.400	31	0.036	31	0.555	31	0.392
32	0.400	32	0.036	32	0.555	32	0.372
33	0.400	33	0.041	33	0.555	33	0.357
34	0.400	34	0.133	34	0.555	34	0.360
35	0.400	35	0.107	35	0.555	35	0.359
36	0.400	36	0.094	36	0.555	36	0.313



## APPENDIX H-5

Autocorrelation tests for the data obtained from the self-anchored scale. Serial dependency is noted for the first lags only in guilt, anxiety, cope and memory.

ANGER1		ANGER2		ANGER3		GUILT		ANXIETY	
LAG	CORR.	LAG	CORR.	LAG	CORR.	LAG	CORR.	LAG	CORR.
1	0.224	1	0.501	1	0.474	1	0.687	1	0.683
2	0.478	2	0.184	2	0.178	2	0.560	2	0.528
3	0.056	3	0.172	3	0.302	3	0.515	3	0.549
4	0.020	4	0.455	4	0.384	4	0.515	4	0.420
5	-0.102	5	0.216	5	0.336	5	0.400	5	0.453
6	-0.106	6	0.223	6	0.380	6	0.234	6	0.322
7	-0.045	7	0.192	7	0.306	7	0.196	7	0.302
8	-0.178	8	0.188	8	0.250	8	-0.008	8	0.164
9	-0.085	9	0.017	9	0.129	9	-0.040	9	0.155
10	-0.163	10	0.079	10	0.129	10	-0.013	10	0.100
11	-0.068	11	0.137	11	0.190	11	-0.014	11	0.064
12	-0.104	12	0.107	12	0.111	12	-0.066	12	0.070
13	-0.032	13	0.117	13	0.131	13	-0.175	13	-0.061
14	-0.094	14	0.071	14	0.130	14	-0.108	14	-0.103
15	-0.006	15	0.097	15	0.037	15	-0.153	15	-0.111
16	-0.066	16	0.119	16	0.008	16	-0.167	16	-0.132
17	-0.003	17	0.108	17	0.033	17	-0.155	17	-0.132
18	-0.007	18	0.147	18	0.168	18	-0.200	18	-0.132
19	-0.075	19	0.147	19	0.168	19	-0.200	19	-0.132
20	-0.083	20	0.107	20	0.166	20	-0.251	20	-0.132
21	-0.083	21	0.084	21	0.183	21	-0.246	21	-0.132
22	-0.083	22	0.084	22	0.183	22	-0.234	22	-0.132
23	-0.083	23	0.084	23	0.183	23	-0.297	23	-0.132
24	-0.083	24	0.084	24	0.183	24	-0.292	24	-0.132
25	-0.083	25	0.084	25	0.183	25	-0.251	25	-0.132
26	-0.083	26	0.084	26	0.183	26	-0.210	26	-0.132
27	-0.083	27	0.084	27	0.183	27	-0.187	27	-0.132
28	-0.083	28	0.084	28	0.183	28	-0.164	28	-0.132
29	-0.083	29	0.084	29	0.183	29	-0.141	29	-0.132
30	-0.083	30	0.084	30	0.183	30	-0.117	30	-0.132
31	-0.083	31	0.084	31	0.183	31	-0.094	31	-0.132
32	-0.083	32	0.084	32	0.183	32	-0.071	32	-0.132
33	-0.083	33	0.084	33	0.183	33	-0.030	33	-0.132
34	-0.083	34	0.084	34	0.183	34	-0.025	34	-0.132
35	-0.083	35	0.084	35	0.183	35	-0.020	35	-0.132
36	0.016	36	0.042	36	0.083	36	0.020	36	0.088

COPE		SIN		MEMORY		BODYM	
LAG	CORR.	LAG	CORR.	LAG	CORR.	LAG	CORR.
1	0.705	1	0.554	1	0.609	1	0.297
2	0.586	2	0.429	2	0.484	2	0.090
3	0.442	3	0.304	3	0.339	3	-0.088
4	0.262	4	0.286	4	0.140	4	-0.107
5	0.147	5	0.232	5	0.038	5	-0.169
6	0.055	6	0.107	6	-0.016	6	-0.057
7	0.011	7	0.125	7	-0.016	7	-0.057
8	0.010	8	0.071	8	-0.003	8	-0.105
9	0.010	9	0.161	9	0.056	9	-0.120
10	0.016	10	0.179	10	0.044	10	-0.050
11	0.013	11	0.196	11	0.014	11	-0.052
12	0.013	12	0.179	12	0.073	12	-0.018
13	0.013	13	0.054	13	0.088	13	-0.044
14	0.013	14	0.036	14	0.084	14	-0.046
15	0.013	15	0.018	15	0.089	15	-0.097
16	0.013	16	0.107	16	0.001	16	-0.050
17	0.013	17	0.089	17	0.067	17	0.033
18	0.013	18	0.143	18	0.059	18	0.042
19	0.013	19	0.125	19	0.033	19	0.117
20	0.013	20	0.143	20	0.025	20	0.047
21	0.013	21	0.018	21	0.075	21	0.096
22	0.013	22	0.071	22	0.048	22	0.107
23	0.013	23	0.196	23	0.104	23	0.041
24	0.013	24	0.250	24	0.109	24	0.030
25	0.013	25	0.268	25	0.114	25	0.045
26	0.013	26	0.179	26	0.182	26	0.107
27	0.013	27	0.268	27	0.124	27	0.037
28	0.013	28	0.250	28	0.161	28	0.106
29	0.013	29	0.196	29	0.185	29	0.031
30	0.013	30	0.179	30	0.233	30	0.056
31	0.013	31	0.161	31	0.195	31	0.001
32	0.013	32	0.143	32	0.137	32	0.001
33	0.013	33	0.125	33	0.123	33	0.007
34	0.013	34	0.107	34	0.103	34	0.007
35	0.013	35	0.089	35	0.063	35	0.091
36	0.013	36	0.071	36	0.008	36	0.091

## APPENDIX H-6

Autocorrelation tests for the data obtained from the self-anchored scale.

Serial dependence is noted for the first lags in guilt and body image.

ANGER1		ANGER2		ANGER3		GUILT		ANXIETY	
LAG	CORR.	LAG	CORR.	LAG	CORR.	LAG	CORR.	LAG	CORR.
1	-0.397	1	-0.336	1	0.434	1	0.676	1	-0.507
2	-0.067	2	-0.045	2	0.163	2	0.490	2	-0.038
3	-0.264	3	-0.306	3	0.070	3	0.270	3	-0.025
4	-0.163	4	-0.108	4	0.235	4	0.203	4	0.063
5	-0.040	5	-0.085	5	0.186	5	-0.032	5	0.088
6	-0.154	6	-0.190	6	0.117	6	-0.134	6	0.000
7	-0.268	7	-0.082	7	-0.083	7	-0.234	7	0.062
8	-0.101	8	-0.042	8	-0.147	8	-0.253	8	0.035
9	-0.190	9	-0.252	9	-0.060	9	-0.264	9	-0.028
10	0.198	10	-0.123	10	-0.153	10	-0.290	10	-0.138
11	0.127	11	-0.037	11	-0.163	11	-0.299	11	-0.215
12	0.007	12	-0.049	12	-0.213	12	-0.309	12	-0.215
13	-0.145	13	-0.007	13	-0.206	13	-0.153	13	-0.229
14	-0.005	14	0.075	14	-0.248	14	-0.138	14	-0.190
15	-0.080	15	-0.085	15	-0.090	15	-0.086	15	-0.127
16	-0.091	16	-0.146	16	-0.118	16	-0.051	16	-0.065
17	-0.055	17	-0.178	17	-0.169	17	-0.016	17	-0.039

COPE		SIN		MEMORY		BODYM	
LAG	CORR.	LAG	CORR.	LAG	CORR.	LAG	CORR.
1	-0.341	1	0.174	1	-0.392	1	0.667
2	-0.217	2	-0.014	2	-0.080	2	0.396
3	-0.313	3	-0.039	3	-0.083	3	-0.222
4	-0.243	4	-0.038	4	-0.086	4	-0.004
5	-0.116	5	-0.123	5	-0.032	5	-0.118
6	-0.053	6	-0.072	6	-0.018	6	-0.083
7	-0.000	7	-0.076	7	-0.020	7	-0.037
8	-0.077	8	-0.022	8	-0.023	8	0.013
9	0.233	9	-0.253	9	-0.026	9	0.036
10	-0.213	10	-0.158	10	-0.029	10	0.024
11	-0.058	11	-0.281	11	-0.032	11	-0.128
12	-0.135	12	-0.108	12	-0.035	12	-0.279
13	-0.221	13	-0.235	13	-0.273	13	-0.270
14	-0.131	14	-0.110	14	-0.238	14	-0.323
15	0.080	15	-0.012	15	0.030	15	-0.249
16	-0.205	16	0.024	16	0.027	16	-0.162
17	-0.054	17	0.016	17	0.024	17	-0.136