DEVELOPMENT OF AN INSTRUMENT TO MEASURE HOPE

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To Kimberly who has been a serious scholar since she has learned how to read; to Elizabeth who maintains a sense of balance and joy in our household; and to Patricia who is curious and enthusiastic about everything in life from cobwebs to sunsets. May you each flourish in your special talents and leave a mark on this world.

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LIST OF ABBREVIATIONS

BMDP	Biomedical Statistical Package
EWB	Existential Well-being Scale
HIS	Hope Index Scale
HS	Hopelessness Scale
I	Importance Subscale
MHS	Miller Hope Scale
P	Probability Subscale
PWB	Psychological Well-being Scale
SD	Standard deviation
SHS	Stoner Hope Scale
SPSSX	Statistical Package for the Social Sciences

SUMMARY

The purpose of this study was to develop an instrument to measure hope in adults and to evaluate its psychometric properties. A forty item Miller Hope Scale was developed based on the critical elements of hope gleaned from a comprehensive review of the literature, including a review of the etymology of hope; as well as from an exploratory study of hope in persons who survived a critical illness.

The instrument was critiqued by psychometric and content experts, content validity established, and was pretested on 75 subjects. The refined instrument was then evaluated using 522 university students. The intent was to establish norms on the instrument before using a new instrument with ill subjects.

The range of scores on the hope scale is 40 to 200, with high scores indicating high hope. The mean hope score for this healthy sample was 164.46 with a standard deviation of 17.65. A leptokurtic curve, skewed to the left was noted in these responses. As expected, the instrument detected high hope in individuals who were screened to have no physical or mental health problems.

The internal consistency alpha coefficient was 0.93 with a two week test-retest reliability of 0.82. Criterion related construct validity was established by correlating the Miller Hope Scale to the Psychological Well-being Scale (r = 0.71), to the Existential Well-being Scale (r = 0.82) and to a one item hope self assessment (r = 0.69). In addition, divergent validity with the Hopelessness Scale was established (r = -0.54).

Maximum likelihood factor analysis with oblimin rotation resulted in a three factor solution as determined by eigenvalues greater than one, scree test, Lawley's ratio, simple structure, lack of trivial factors and the residual matrix values being less than 0.1. All 40 items had a significant loading (> 0.30) on one of the three factors: I satisfaction with self, others and life,

II avoidance of hope threats, and

III anticipation of a future.

I. INTRODUCTION

Hope is one of several states of being which influences behavior. Lynch (1974) places hope at the very heart and center of a human being. It is described as an individual's best resource "always there on the inside, making everything possible when he is in action, or waiting to be illuminated when he is ill" (Lynch, 1974, p. 31).

Hope has an integrative capacity enabling healthy ego functioning (Meissner, 1973a). As a method of coping, hope enables individuals to bypass psychologically unpleasant, stressful situations by reinforcing the cognition that there is a way out of difficulty (Korner, 1970; Lynch, 1974). A key purpose served by hope is avoidance of despair (Korner, 1970) and the accompanying feelings of anguish and remorse.

Hope is of universal interest and is part of our every day language. Pruyser (1963) points out that the concept is the communal property of politicians, poets and gamblers as well as philosophers, theologians, psychologists and psychiatrists. Hope has been described as an/a illusion, virtue, feeling, psychological state,

knowledge, life force, coping strategy, expectation, belief, trait or disposition, and a gift for transcendence, to name a few. While a single definition of hope is lacking, there is agreement that the nature of hope is elusive and mysterious (Marcel, 1962), as well as agreement that hope is a powerful resource for life and restoration of being (Vaillot, 1970) and a resource for society (Tiger, 1979). Entralgo, Spain's philosopher of hope, noted that human beings have the distinct attribute of being future oriented and possess a special gift of being able to transcend limitations imposed by circumstances and the environment (Mermall, 1970).

The absence of hope is said to have a profound impact on psychological well-being, response of persons who are ill to therapy and recovery from illness (Jourard, 1970; Engel, 1968; Frank, 1975; Greer et al., 1979; Ziarnik et al., 1977; Seligman et al., 1971; Davies et al., 1973). The absence of hope has proved to be more significant than depression in predicting eventual suicide (Beck et al., 1985) as well as being correlated to suicide attempts and suicide ideation (Beck et al., 1974; Minkoff et al., 1973; Beck et al., 1975; Wetzel, 1976).

A. Problem

Despite the overwhelming importance attributed to hope in terms of influencing survival (Menninger, 1959; Engel, 1968; 1971; Richter, 1957; Jourard, 1970; Henderson and Bostock, 1977; Frankl, 1962; Bettelheim, 1960) and response to therapy (Frank, 1975; Orne, 1968; Gottschalk, 1974) comprehensive, valid and reliable instruments to measure hope have not been developed. Hopelessness has intrigued researchers but relatively little effort has been devoted to specifying the nature of the domain of hope by isolating its discrete critical empirical indicants and constructing an instrument to measure hope.

Assessment of patients' psychologic states has been a well-recognized function of nursing. Changes in physical states are accompanied by changes in mental-emotional states (Green and Green, 1977). Nurses are the responsible health team members to assess and manage these psychological responses to illness. However, accurate instruments to assess hope have not been available to nurses.

Although emotional responses to chronic illness are widespread and varied, common coping tasks of the chronically ill have been identified. One coping task is to maintain hope despite an uncertain or downward course

of the illness (Miller, 1983). Greene et al. (1982) confirmed that the chronically ill are challenged with maintaining hope. A primary response of patients with unpredictable progressive chronic disease was that by maintaining hope, they perceived themselves as staying in a role of a winning position over their disease (Forsyth et al., 1984). Studies of hemodialysis patients and emergency room patients identified "to hope that things will get better" was a frequently used coping strategy (Murphy, 1982; Jalowiec and Powers, 1981). Hope has been identified as an important dimension in responding to chronic illness and life threats.

Because few valid and reliable instruments exist to measure phenomena of concern to nurses such as hope, nurses' determinations about patients' levels of hope have been speculative. Conclusions have been made based on subjective criteria without adequate tools to confirm clinical impressions.

B. Purpose

The purpose of this study is to develop an instrument to measure hope in adults and to examine its psychometric properties. Reliability and validity of the instrument will be established on normal subjects using test-retest

measures, Cronbach's alpha of internal consistency, factor analysis and construct validation by correlating hope scores to existing valid and reliable instruments measuring constructs directly related to hope. The relationship between scores on the hope instrument and meaning and purpose in life, psychological well-being and hopelessness will be determined using the Existential Well-Being Scale (Paloutzian and Ellison, 1982), Index of General Affect (Campbell et al., 1976) and the Hopelessness Scale (Beck et al., 1974). A subscale for measuring hope in a prototypical chronically ill population, persons with arthritis, will also be proposed.

C. Significance

Hope has been credited with influencing survival against all odds and when hope is absent, death is said to be hastened (Menninger, 1959; Engel, 1968; 1971; Richter, 1957; Jourard, 1970). The importance of hope to sustain persons through natural disasters (Henderson and Bostock, 1975; 1977), concentration camp experiences (Frankl, 1962; Bettelheim, 1960), and prisoner of war experience (Nardini, 1952) has been well-documented.

Hope has been noted to be a significant factor in responding to psychotherapy (Frank, 1968; 1975; Orne,

1968) and is said to have "healing power" in persons with medical disorders (Frank, 1975; Gottschalk, 1974) and influences long term survival after breast cancer (Greer et al., 1979; Pettingale, 1984) as well as long term survival on hemodialysis (Ziarnik et al., 1977). On the other hand hopelessness invites physical deterioration (Engel and Schmale, 1967; Jourard, 1970; Schmale, 1971; McGee, 1984; Gottschalk, 1985).

These claims about the power of hope have been based on retrospective analyses of critical incidents and individuals' subjective recall. In order to systematically examine claims regarding the power of hope, a valid and reliable means of measurement needs to be developed.

Watson (1979) has identified "instilling faith-hope" as one of ten carative components in her humanistic model of nursing. However, a specific means of determining the effectiveness of hope-inspiring strategies has not been developed.

Hope is a complex, elusive, multidimensional construct. A more precise understanding of it will emerge as a result of a critical analysis of its domain and systematic instrument development. Having a more precise

understanding of hope as well as having a valid and reliable tool to measure a phenomenon of concern to nursing will be a contribution to the science of nursing. Because hope is such a powerful state of being, efforts to quantify it so as to increase the precision of our predictions and decrease the vagueness of retrospective recall and subjective analysis of events is needed.

II. LITERATURE REVIEW

The etymology of hope provides a foundation for understanding the construct from its origin to the present time. Review of theologic, philosophic, psychologic, socio-anthropologic and biologic perspectives on hope is essential for thorough exploration of the construct. Research which has identified the empirical indicators of hope and other reports which demonstrate the importance of hope are also reviewed in this chapter. Critical indicants of hope which specify the domain of hope and which provide the foundation for the domain sampling model used in this instrument construction are identified. The last section of this chapter contains a review of the current state of hope measurement.

A. Etymology of Hope

The Greek origin of hope is "elpis" which means expectation, yearning, patient waiting with faith (Bultmann and Rengstrof, 1963). Common Hebrew roots of hope found in the Old Testament are batah, mibtah, betah, and bittahon, all of which convey the idea of trust and security. Other roots include qawah and yahal, to wait

and hasha, to seek refuge. The derivative of yahal is tohelet, which means "hope" (Bultmann and Rengstorf, 1963).

The importance of hope to human existence is noted in Plato's Philebus in which existence is said to be determined not only by perception of the present but also by memory of the past and expectation of what is to come (Bultmann and Rengstorf, 1963). The Old Testament is replete with discussion of the significance of hope. Emphasis is on the idea that as long as there is life there is hope and to have hope is to have a future (Proverbs 23: 18; 24: 14; 26: 12; Job 17: 18; Ecclesiastes 9: 4). Hope is a buffer against earthly distress. God is the source of hope, an ultimate eschatological hope (Isaiah 25: 9; 26: 8; 30: 15; Jeremiah 29: 11; 31: 16).

The critical elements of hope can be determined from understanding theological, philosophical, psychological, sociological-anthropological, and biological perspectives of hope.

B. Perspectives on Hope from Various Disciplines

1. Theologic Perspective

In the first and second centuries of Rabbinic Judaism, no word to express hope such as elpis existed. Hope was tied to messianic expectation. Arrival of the

messiah could be hastened or delayed dependent on God's relationship with His people. The theme of a calculated attempt to guarantee the expectation is present. Real hope was linked to God and not to man (Bultmann and Rengstorf, 1963).

According to Hellenic Judaism, God is the hope for all who keep His ways; for the ungodly idolators, hope is vain, empty or unseen (Bultmann and Rengstorf, 1963). The idea of good and bad hope is noted here. Hope is the antithesis of fear and a requirement for joy.

Modern Judaism contains the dialectic of work (pray) and wait. Fackenheim (1970) considers the historical perils of Jewish people and concludes that the Jew is forbidden to despair of God. Jewish people have a commandment to hope.

For Christians, hope is "fixed on God" and consists of expectation for the future, trust and patience in waiting (Bultmann and Rengstorf, 1964, p. 531). St. Paul, in Romans 8: 24, reveals that hope cannot relate to things seen as these are transient and momentary such as things of the flesh. Hope is tied to that which we do not see, but we expect anxiously and trust will occur. Hope is mixed with elements of confidence and patient endurance (Bultmann and Rengstorf, 1963).

Christian hope is founded on salvation accomplished through Christ; it is an eschatological blessing (Moltmann, 1970). Christ, Himself is Christian hope. To hope is to be open to God (Heagle, 1975; Moltmann, 1975). Eschatology is the beginning not an end, it is the integrating principle of Christianity (Moltmann, 1967; 1970; 1971; 1975; Meissner, 1973a).

Throughout the ages, virtues as proposed by Aristotle and Plato as well as vices have influenced individual's thinking and behavior. Four cardinal virtues were said to be: fortitude, prudence, temperance and justice (Bloomfield, 1952). Added to these are the theologic virtues of faith, hope, and charity. Vices are pride, avarice, lust, envy, gluttony, anger, and sloth (MacIntyre, 1981; Foot, 1978; Fairlie, 1978). Analysis and preaching about the vices took precedence over developing consciousness of the virtues throughout the ages. Since medieval times however, hope has been described as a virtue, a force to counteract vices which surround us (Bloomfield, 1952).

According to St. Augustine, the theological virtue of hope has God as its object. Vices in opposition to hope according to Aquinas are despair and presumption. St.

Gregory stated "nothing is more to be avoided than despair, for he who has it loses constancy both in the every day toils of life and what is worse, in the struggle of faith" (Aquinas, 1966, p. 97). Acedia (sloth) proceeds from despair. Presumption, the other vice to hope, is defined by Aquinas as 1) relying confidently on one's own abilities, attempting to gain what is beyond one's personal competence and 2) relying on divine mercy or power in a distorted way; expecting to obtain eternal life without having merited it, expecting pardon without repentence. "Both despair and presumption are an assault upon and a destruction of hope" (Aquinas, 1966, p. 175).

Hope is a contradiction to the world of common sense. It comes to persons as a mysterious surprise. Heagle (1975) describes hope as God's secret which He has shared with all in the person of Jesus. To be a Christian is to know and share that secret. Hope is necessary for salvation. It is linked with faith (belief in God) and charity (love of God) and supplies the impetus to exercise faith and love (Broderick, 1976).

2. Philosophic Perspective

Bloch (1970a), a contemporary Marxist, claims man is a creature who hopes, who fantasizes, who dreams about the

future and strives to attain it. Human beings experience the disappearing present while anticipating the "not yet." Human beings as well as the entire cosmos are moving toward an unfulfilled essence (Bloch, 1970a).

Human existence can be viewed as a trial or struggle within an environment of captivity that must be endured; humans therefore are subject to hope or despair (Miceli, 1969). Marcel (1962) points out that all human beings must endure trial or calamity during life. It is at times of entrapment when real hope comes alive. "Hope is the act by which the temptation to despair is actively or victoriously overcome" (Marcel, 1962, p. 36). A distinction is made by Marcel between "to hope" and "to hope that." "To hope" is a state of being with an anticipation of fulfilling self. "To hope that" implies a discrete concrete objective and may include a timetable for the object of the hope to be realized. In addition to hope being described as a mystery, Marcel's views on hope reveal that hope takes place through communion with another. Heagle (1975) supports this view and defines trust as <u>hope</u> in relationships.

Nietzsche's nihilism, his "God is dead" philosophy and his ideal of totally free men producing a society of supermen, finding hope in the present, is a stark contrast

from the Christian object of hope (Miceli, 1965; Moltmann, 1967). Nietzsche's cynical viewpoints referring to hope as the worst of all evils because it prolongs the torment of man (Meissner, 1973b) is a reflection of the philosophy of Sartre and Camus. They view life as being a futile concern, a pattern which is characterized by despair (Blain, 1970). Hope has been regarded by Camus (1955) as a human weakness. Camus questions the sense of living when the meaninglessness of life is evident. According to Marcel (1962), despair paralyzes life. Despair is stark defeatism. Despair is hell (Miceli, 1965), a situation in which the mysterious gift of hope has been rejected. No affect is more debilitating than despair (Solomon, 1985). It is loss or failure to hope, not hope, which torments souls (Meissner, 1973b).

3. Sociologic-anthropologic Perspective

Sociologic perspectives, without the spiritual focus, provide another dimension on hope. Bloch (1970a), speaks of hope as openness to the world. Hope is fixed on a Utopia in the here and now. Hope is not merely for "some thing from above... but also for that which is before us" (Bloch, 1970a, p. 67). He describes man as a hoping animal manifesting a desire for a home which is "not yet";

on a pilgrimage which is a mystique transcendence rooted however, in a world of ever-restive change (Bloch, 1970a; Capps, 1968).

Tiger (1979) states hope is central to human evolution. In this context hope is an expectation for a social and material future which is desirable and good. Hope (used by Tiger as synonymous with optimism) is an obligatory characteristic of a society in order for a society to sustain itself. Tiger refers to private optimism as a public resource.

Hopelessness can be induced in individuals by a totally bureacratized industrial society in which persons feel powerless. However, Marx believed that the high technology society could become a humane one with concern for the individual and not just a concern for material goods (Reuther, 1970).

4. Psychologic Perspective

Hope is a developmental achievement. It begins at the beginning of life with trustworthy encounters with parental figures who create a warm environment and meet the infant's needs (Erikson, 1964).

Fromm (1968) speaks of hope as a psychic commitment to life and growth. It is a state of being, an inner

readiness for that which is not yet born, yet absence of despair when the birth does not take place. Hope is not only a comfort for individuals in distress; it is an intrinsic element of life. When hope ends, so does life itself or the potential for life. Hope sets the stage for a feeling of well-being while hopelessness invites a feeling that the future is intolerable, it is futile. The state of hopelessness has been more predictive of suicide (using the Beck Hopelessness Scale) than the individual's state of depression as measured by the Beck Depression Scale (Beck et al., 1985).

Beyond saving an individual from the pain of despair, hope enables successful coping, it is an energizer, an activator, described by Korner (1970) as the center of the individual's coping armamentarium. Hope is confidence that there is way out of difficulty while hopelessness is the consequence of not being able to cope (Lynch, 1974). Hope means having an expectation and is present in a future-oriented being (Mermall, 1970). Of the multiple concepts related to hope, faith (trust) is most important. Trust leads to hope, while mistrust invites despair (Entralgo, 1956).

Situations of suffering which may render individuals

hopeless are made tolerable by the sufferer creating mental images of loved ones, by religion, by glimpses of healing beauty of nature, by humor, or by somehow finding meaning in the suffering (Frankl, 1962; Bettelheim, 1960; 1979). Frankl (1962) expresses that at the brink of utter despair, contemplation of a beloved one enables the person to endure the suffering.

Alfred Adler's theory of fictional finalism speaks of future expectation and has been dubbed the "as if" psychology (Lindzey and Hall, 1978). That is, humans' behavior and motivations are influenced more by their expectations of the future than by their experiences of the past. The fictional goals persons establish (e.g. there is a heaven for virtuous persons and a hell for sinners) was said by Adler to be the subjective cause of psychological events and significant motivation for behavior; behaving "as if" an anticipated future expectation would come true.

Although there are levels of hope (Miller, 1983), the most significant level of hope according to Marcel (1962) is hope for release from trial or entrapment. With hope there is a transcendence from personal calamity.

Stotland (1969) defines hope as an expectation greater than zero of attaining a goal. While being more

concrete than the above discussion of hope, Stotland's (1969) term is at the same time a narrow conceptualization. Meissner, a Jesuit, tried to integrate the psychological and theological realities (1973a; 1973b). Intrapsychic states are affected by the theological and religious dimensions of a person. Meissner concludes that a person's capacity to hope is based on the presence of sustaining, divine grace. The intrapsychic state of hopelessness results in a failure to wish, to desire, to have ambition, or to plan (Meissner, 1973b). Hopelessness encourages a self-perception of being unworthy, inadequate, unacceptable and valueless. Freud claimed that one function of the ego was to mediate and integrate drives and wishes within reality limits (Freud, 1948). Hope is the modality which maintains healthy ego functioning; hope enables a sense of the possible, it provides freedom for human beings' creative and imaginative capacities while facing fears of loss and abandonment (Meissner, 1973a).

The healing power of hope in psychotherapeutic contexts has been described by Frank (1968; 1975), Horney (1939), Diez-Manrique (1984), Menninger (1959), Pruyser (1963) and Aardema (1984). Aardema (1984) developed a

model for practitioners to use in psychotherapeutic settings to assess client hope and suggests using hope to effect client change.

5. Biologic Perspective

It is well accepted that the individual is a psychobiological, spiritual, social being. A disturbance due to illness in one dimension, has an impact on the integrity of other dimensions of the person (Frank, 1968; 1975).

Questions have been raised regarding the impact of pleasurable mind states such as hope on physical states. Tiger (1979) poses, how is it that hope about one's destiny affects physical well-being? Mind body pathways and individuals' control of release of endorphins play a role in this mind-body interchange, all of which have been poorly understood. Anecdotal documentation of the mind-body relationship has been done (Cousins, 1979; Simonton and Mathews-Simonton, 1978). Hope has been praised as being medicinal (Menninger, 1959), and being a major ingredient in the healing process (Bruhn, 1984).

Richter's (1957) rat studies are a classic example of the relationship between a psychological state (hopelessness) and biological response (death). When a

state of hopelessness was said to have been induced in rats who were immersed into jars of water without removing them for a few minutes soon after immersion, death ensued within hours. On the other hand, rats who were rescued repeatedly (removed from the water for a few minutes and replaced into the swimming jar), continued to swim up to 60 hours. Richter (1957) concluded hopeless rats succumbed to death, induced by the hopeless state itself. Similarly many studies were conducted by Seligman (1975) in which dogs were subjected to aversive situations over which they had no control; helpless responses led to giving up, motivation to escape aversive stimuli was sapped as a result of learned helplessness (after repeated escape trials failed) and a state of hopelessness was manifested (Seligman, 1975). An analogy of induced helplessness in the elderly resulting in hopelessness and death is given (Seligman, 1975). A few studies on hope and biologic states of humans have been done.

Forty women with abnormal cervical cytology were interviewed prior to cervical cone biopsy to determine if a hopeless affect and/or high hopelessness potential was related to malignancy (Schmale and Iker, 1966). Correct predictions of cancer or no cancer were made prior to cytology studies in 31 cases and incorrect in 9 cases.

Three subscales of the Minnesota Multiphasic Personality Inventory (ego strength, depression, and masculinity-femininity) were also administered. Only the depression subscale discriminated between cancer and noncancer groups. Schmale and Iker repeated this study (1971) on 68 women and made correct predictions in 50 of the 68 subjects. In discussing carcinogenesis, cell dysplasia is called the initiator of cancer while hopelessness may be a promotor of cancer (Schmale and Iker, 1971).

Long term survival after breast cancer has been related to psychological states. Twenty-two women with metastatic breast cancer who survived longer than one year had significantly higher anxiety, depression, hostility and negative affect as measured by the Psychological Distress Scale and the Affect Balance Scale than did the 13 short term survivors who lived less than one year (Derogatis et al., 1979). Those persons who responded with docile acceptance survived less than a year. Similarly, Greer and associates (1979) studied 69 women with breast cancer at 3 months and at 5 years after diagnosis using measures of depression, hostility, extraversion and neuroticism as well as indepth interviews. Patients' responses were categorized as

denial, fighting spirit, stoic acceptance and feelings of helplessness/hopelessness. After five years, 2 women had died from causes other than cancer. Of the remaining 67 women, 33 were alive and well, 16 were alive with metastases, and 18 had died of breast cancer. Of the 16 women who died, 88% reacted with helplessness/hopelessness or stoic acceptance; whereas only 46% of the remaining women who were alive and well demonstrated these reactions (Greer et al., 1979). Pettingale (1984) reported on the 10 year follow-up on 57 of the original breast cancer patients comparing the recurrence-free, survival subjects (N=19) with metastatic disease, alive or dead (N=38). Those subjects who displayed a fighting spirit had a more favorable outcome (recurrence free) than those who were helpless/hopeless in their response.

Contrary findings are reported by Cassileth et al., (1985). They examined seven psychosocial variables which were said to be predictive of longevity: social ties and marital history, job satisfaction, previous use of psychotropic drugs, life satisfaction, subjective view of adult health, degree of hopelessness/helplessness, perception of degree of adjustment required due to the diagnosis. Two groups of cancer patients were studied: 204 persons with unresectable cancers and 155 persons with

Stage I or II melanoma or Stage II breast cancer. Patients who survived only 6 months, 7 to 12 months, and 13 to 24 months were studied in terms of low, average or high psychosocial total scores using analysis of variance. The psychosocial variables were not significant in predicting survival of these subjects. It should be noted however, that the subjects in this study already had advanced disease and were at high risk for deterioration. Cassileth et al. state that although the variables studied may "contribute to the initiation of morbidity, the biology of the disease appears to predominate and override the potential influence of life style and psychosocial variables once the disease process is established" (Cassileth et al., 1985, p. 1551).

Psychologic correlates of survival of 47 males on dialysis were studied using the MMPI (Ziarnik et al., 1977). Patients in group A died within one year, group B patients survived 3 to 7 years, and patients in group C lived 7 to 10 years. Persons in groups B and C (long term survivors) had a sense of hopefulness about the future and mild depression; whereas short term survivors were characterized by feelings of helplessness, depression, anxiety and preoccupation with somatic complaints.

Gottschalk (1985) reviewed studies of psychodynamics influencing vulnerability to illness. He concluded deterrents to illness are hope, absence of depression, absence of adverse life changes, ability to express emotions and coping capacity. A variety of strong emotions (fear, rage, hopelessness or helplessness) increased autonomic nervous system activity resulting in altered cardiac electrical activity and paroxysmal dyspnea, leading to death in some instances (Gomez and Gomez, 1984).

It should be noted that research about the psychological correlates, particularly hope, and illness remains inconclusive. Design flaws may account for the differences in findings. Particular attention should be paid to measurement inadequacies, specifically the lack of valid and reliable measures of hope.

C. Exploratory Research Bases

Persons who survived periods of entrapment (when according to Marcel (1962), hope in its true sense comes alive), were studied to better understand the nature of hope. Fifty-nine persons who survived a critical illness were interviewed to determine what maintained their sense of hope during a time when their very existence was

threatened (Miller, 1984). Subjects who were hospitalized and had been transferred from the Intensive Care Unit at least two days prior to the interview were studied. Analysis of the transcriptions of the interviews revealed the following hope-inspiring categories:

-cognitive strategies - those thought processes individuals consciously engaged in to change unfavorable perceptions about events to less threatening perceptions;

-mental attitude of determinism - a conviction that a positive outcome is possible;

-world view (philosophy) - belief that life has meaning;

-spiritual strategies - those beliefs and practices which enabled the individual to transcend suffering based on a relationship with God;

-relationships with caregivers - interpersonal relationships characterized by health worker viewing the patient in a constructive way, positive expectations are conveyed for the patient to competently handle the stresses confronting him/her, to get through the difficulty, and have confidence in the therapy;

-bond with family and significant others - individual has sustaining relationships with significant others who enable the person to feel there is some one for whom to

live and some one who shares the difficulty;

-sense of being in control - a perception that one's own knowledge and actions can affect an outcome;

-goals to be accomplished - individual identified activities to accomplish or valued outcomes to be attained;

-miscellaneous strategies - other coping behaviors as affective and motor activities used to confront a threat and reduce uncomfortable feelings of anxiety, fear, grief, and guilt (Miller, 1984).

Hinds (1984) studied 25 adolescents (17 healthy and 8 hospitalized in a drug and alcohol treatment center) using an 8 item interview guide to arrive at a definition of hope. She concluded that hope is the "degree to which an adolescent believes that a personal tomorrow exists." This belief spans four hierarchical levels: 1) forced effort - the degree to which an adolescent tries to artificially take on a more positive view; 2) personal possibilities - the extent to which an adolescent believes that second chances for self exist; 3) expectation of a better tomorrow - positive nonspecific future orientation; and 4) anticipation of a personal future - extent to which an adolescent identifies specific personal future

possibilities. In a similar effort to concretize the essence of hope, Stanley (1978) studied 40 healthy young adults to isolate discrete descriptive elements of hope. Subjects were asked to write descriptions indicating how they felt when they experienced hope. The isolated elements common to the lived-experience of hope included: expectation of a significant future outcome, confidence of desired outcome, transcendence, interpersonal relatedness, uncomfortable feelings and action to effect the outcome.

Dufault (1981) studied 35 persons with cancer using a participant observation method to determine the critical indicators of hope, antecedents of hope, concomitants of hope and to identify ways in which hope was threatened in these patients. Indicators of hope included mental, physical, spiritual and interpersonal activeness; anticipation; reality grounding; and moving away from the influence of a "captive state." Antecedents of hope included the experience of captivity, loss, stress, major decision making, hardship, suffering and challenges with uncertainty. Concomitants of hope included: faith, trust, love, courage, patience, uncertainty, peace, joy, humor, involvement, and sense of well-being. Hope of the cancer patients was threatened by the behavior of health personnel and significant others, negative effects of

therapies, evidence of physical deterioration, perceiving self as being a burden, having ambiguous or little information. Sources of hope included: significant others, relationships with pets or valued objects, spiritual factors, achieving symptom relief, evidence of personal well-being, positive past life experience, having a sense of personal worth, esteem, and finding meaning in suffering.

The importance of hope has been emphasized in other nursing research. Forsyth and associates (1984) interviewed 50 chronically ill adults to determine how they defended themselves against the demands of an unpredictable and progressive disease. A primary response of the patients was that by maintaining hope, they perceived themselves as staying in a role of a winning position over their disease. Forsyth et al. (1984) recommended that the role of hope in patient's coping be investigated. "To hope that things will get better," was identified as the most frequently used coping strategy by 25 emergency room patients (Jalowiec and Powers, 1981). Murphy (1982) found that the most commonly used coping strategies of 150 hemodialysis patients were prayer, maintaining control, hope, looking at the problem

objectively and finding out more about the situation. Greene and co-investigators (1982) confirmed that the chronically ill are challenged with maintaining hope. Analysis of the nursing diagnoses of 115 chronically ill adults resulted in the identification of coping tasks confronting the chronically ill. One coping task faced by the ill subjects was to maintain hope despite exacerbations of the illness, continual personal intrusions due to medical surveillance, seeming lack of control, and in some instances failure of therapy (Miller, 1983).

Raleigh (1980) attempted to identify variables which maintained hope in two groups of persons with physical illness (45 subjects with cancer and 45 subjects with non-life-threatening chronic illness). Relationships between levels of hope and locus of control, social support, religious beliefs, and attributions for the illness were not significant. Hope was measured by a 6 item Time Opinion Survey developed by Raleigh (1980) for her dissertation using a Likert response format. This means of measuring hope may account for the lack of significant findings since the domain of hope may not be captured by a time perspective alone. The instrument focuses for example on, "How long do you think it will take to obtain

or accomplish what you want in life?" Another exemplar item is, "Have you advanced as far as you had hoped by your present age?" Raleigh (1980) recommends that a valid and reliable tool for measuring hopefulness be developed.

The impact of recalled information of life expectancy on hope was studied on 55 persons with cancer (Stoner and Kaempfer, 1985). Those subjects who recalled having been given specific life expectancy information had significantly lower hope levels than subjects who had not received this information. The stage of illness progression (whether there was no evidence of disease or whether the patient was terminal) did not affect hope levels (Stoner and Kaempfer, 1985).

D. Critical Elements of Hope

Based on the review of literature as well as on exploratory research on patient identified sources of hope during life-threatening illness (Miller, 1984), the following critical elements of hope have been identified. The critical elements were derived from a variety of types of published reports such as: 1) research based reports, 2) clinical documentation of observations in health care settings, 3) conceptual review articles, and 4) conjectural reports or points of view. Definitions of

hope and hopelessness classified according to the nature of the report are found in Appendix A. The eleven critical elements of hope are described briefly.

Mutuality - affiliation refers to interpersonal relationships which are characterized by caring, sharing, and a feeling of belonging, being needed (Lynch, 1974). Marcel (1962) states that hope cannot be achieved alone but takes place in communion with another. Trust in another, having some one who shares the period of trial, experiencing unconditional love are all descriptive of mutuality as an element of hope (Dufault, 1981; Entralgo, 1956; Buber, 1970; Van Kaam, 1976; Wright and Shontz, 1968).

Sense of the possible means that despairing effects of a futile attitude are avoided. Lynch (1974) refers to keeping feelings of hopelessness associated with life events which cannot be controlled or changed from contaminating hope. The impression that all of life is hopeless is avoided.

Avoidance of absolutizing refers to not imposing rigid all or nothing conditions on an aspect of life or hoped for situation (Lynch, 1974). Absolutizing creates

hopelessness by assigning false weight to an aspired situation which may be impossible to achieve.

Anticipation is a looking forward to a future which is good, expectation of a positive outcome coupled with acceptance of the necessity of patient waiting and trusting. Absolute certainty in actualizing the expectancy is not possible so some anxiety accompanies anticipation (Entralgo, 1956; Bloch, 1970a; Green, 1977; Lieberman and Tobin, 1983).

Achieving goals is a component of hope in that the object of one dimension of hope is goal attainment. As noted earlier, Stotland (1969) defined hope as goal attainment. Select studies of hope have used instruments measuring hope as purely goal attainment (Erickson et al., 1975; Stoner, 1982). Having goals is only one element of hope and does not characterize the entire domain.

Psychological well-being and coping are elements of hope. Psychological well-being enables the individual to have psychic energy needed to maintain hope. Hope has been described by Korner (1970) as a component of coping and has been included as an item on the Jalowiec Coping Scale (Jalowiec and Powers, 1981). Hope is also noted to be an important theme on the Quality of Life Scale (Ferrans,

1986). Hope has been described as an elementary strength of the human ego (Meissner, 1973a).

Purpose and meaning in life is an important dimension of hope (Frankl 1962; Bettelheim, 1960; Mays, 1982; Frank, 1968; Peniazek, 1982; Lamb and Lamb, 1971; Hickey, 1986). Perceiving something for which to live, to devote energy and feeling a sense of self-satisfaction from life contribute to hope and stave off a sense of purposelessness, meaninglessness, apathy and general disinterestedness. Renewed spiritual self is closely related to purpose and meaning in life (Castles and Murray, 1979; Raleigh, 1980; Stanley, 1978; Dufault, 1981).

Freedom is the opposite of the sense of entrapment which accompanies hopelessness (Lynch, 1974; Marcel, 1962). With hope there is a sense of freedom, a confidence that there is a way out of difficulty and a recognition that one's own freedom may be used to influence an outcome or form a positive attitude.

Reality surveillance, a term coined by Wright and Shontz (1968), is a cognitive task in which individuals search for clues which confirm that maintaining hope is feasible. It includes concrete steps taken by individuals

to find support for hope such as comparing self to others; holding out for new discoveries; reviewing strengths; affirming self-competence; and so forth.

Optimism is a prerequisite for hope (Gottschalk, 1974; Verwoerdt and Elmore, 1967; French, 1952; Raleigh, 1980; Tiger, 1979). Optimism related to the past, present and future all influence hope. Verwoerdt and Elmore (1967) interviews of terminally ill subjects revealed that satisfaction with one's past is related to a more hopeful outlook for the future. The more hopeless subjects died within 2 months whereas the hopeful subjects lived from 2 to 9 months. Gottschalk's (1974) content analysis of hope themes indicate feelings of optimism about the past, present and future are indicative of hope.

Mental and physical activation is an energy that combats the apathy of despair and is present in hope (Menninger and Pruyser, 1963; Lange, 1978).

The critical elements of hope synthesized from the literature and from qualitative research by this investigator provide the organizing framework for generating items to measure the complex and elusive construct, hope. The critical elements reflect the

initial work in specifying the domain of hope and include:

-mutuality - affiliation,

-sense of the possible,

-avoidance of absolutizing,

-anticipation,

-achieving goals,

-psychological well-being,

-purpose and meaning in life - spiritual well-being,

-freedom,

-reality surveillance,

-optimism, and

-mental activation.

E. Current State of Hope Measurement

Three instruments exist which are said to measure hope: the Hope Scale (Erickson et al., 1975), the Stoner Hope Scale which is a revision of the Erickson et al. Hope Scale (Stoner, 1982), and the Hope Index Scale (Obayuwana et al., 1982). Basic information about each scale will be reviewed followed by a critique of each instrument. An additional qualitative approach to assessing hope (Gottschalk and Gleser, 1969; Gottschalk, 1974) will also be reviewed.

1. The Hope Scale

The Hope Scale (Erickson et al., 1975) consists of a list of 20 goals to which subjects respond using two scales: one measuring the importance of the item and the other measuring probability of achieving the goal indicated in the item. Importance is measured using a seven point scale from 1 = "I don't care if this happens to me or not" to 7 = "It's extremely important. Without it I'd be dead." Probability is measured by subjects recording a number from 0 to 100 indicating their perception of the chances of achieving the goal. Exemplar items that seem to meet common sense criteria for inclusion are:

-have good bodily health,

-have good emotional health, and

-have satisfactory leisure time.

Other items that seem less pertinent particularly for use with persons who are facing serious dilemmas such as illness are:

-have a good relationship with my father,

-have a nice house, have a nice car,

-get married, or if married, have a good relationship with my spouse.

Test retest reliability after one week on 35 subjects (who may have been psychiatric patients, although this is not clearly specified) was 0.793 for importance (I) and 0.787 for probability (P) scales, both significant at $p < 0.001$. An "item analysis" was completed on data from 225 subjects (included undergraduate students and patients but no indication is given about the numbers in each group). Items on the I and P correlated with the total score, with the mean of I being 0.49 and the mean of P being 0.63. While these mean correlation scores are helpful in evaluating the instrument, the overall alpha which is calculated using these means is not reported.

a. Critique of the Hope Scale

This instrument is based on Stotland's (1969) theoretical definition of hope as high expectancy for goal attainment. Stotland precisely described hope as an expectation greater than zero of attaining a goal. This exact definition is not included in the Erickson et al. (1975) report. No description is provided about how items (goals) were generated. The authors indicated that the list "covered a spectrum of goals common in our society." While goal attainment is an important dimension of hope, hope encompasses many more dimensions than having concrete

goals. Hope is a state of being and extends beyond having goals to accomplish.

Although some attempts at establishing construct validity can be inferred by their correlating the Hope Scale with the MMPI, no discussion is provided how the MMPI fits the nomological network relevant for hope. Psychiatric patients were studied in the validation procedure, however no target population for the instrument is specified. The tool is not adequate for use by nurses with individuals who are threatened with serious challenges in terms of feeling worthwhile, accepting themselves, feeling they are loved and needed despite illness, or for individuals who are striving to maintain relationships with significant others and are coping with serious dilemmas.

Assigning probability levels proved to be problematic for subjects studied by Stoner (1982) using the instrument in a pilot study of ten persons with cancer. Subjects found the probability scale "confusing." Assigning probabilities to each goal is an abstract task which may not be readily understood by subjects.

2. The Stoner Hope Scale

The Stoner Hope Scale (Stoner, 1982; Stoner and Keampfer, 1985), is a modification of the Erickson et al. (1975) Hope Scale. In an attempt to expand the theoretical definition of hope to "recognizing hope as an interior sense requiring interaction with external resources," 10 items categorized as global hope were added to the Erickson Hope Scale (Stoner, 1982, p. 80). The Erickson et al. (1975) definition of hope as "the importance and probability of attaining future-oriented goals" was used by Stoner (1982, p. 271). The Stoner Hope Scale (SHS) consists of 30 goals representing intrapersonal hope, interpersonal hope (both from the Erickson scale) and global hope added by Stoner. Examples of the 10 items added representing global hope include:

-to see a decrease in crime and violence,

-to see a decrease in the threat of nuclear war,

-to have better mass transportation in the cities, and

-to see improvement in efforts to resolve problems with pollution of the environment.

While the worth of these goals could not be challenged, their relevance for use with persons in crisis (illness is a time of crisis) may be questioned as being too grandiose

and irrelevant. Stoner designed the tool to be used with cancer patients. She modified the importance and probability scale of Erickson instrument. Importance was rated on a four point scale from 1 = not important, to 4 = extremely important. The probability scale was made specific for the subjects from 1 = cannot possibly be realized, to 4 = definitely will be realized. Previously probability was a number assigned by the subject from 0 to 100 indicating the likelihood (probability) of attaining the goal.

Attempts were made to establish content validity by having "judges expert in psychiatric and oncology nursing" evaluate the scale (Stoner and Kaempfer, 1985). No further description about the numbers of judges is mentioned, no further information regarding content validity is included.

Using a sample of 55 cancer patients, internal consistency alphas were 0.883 for the global subscale, 0.85 for the intrapersonal subscale and 0.878 for the interpersonal subscale. Total Stoner Hope Scale internal consistency alpha was 0.928. A mean inter-item correlation of 0.53 and item-to-total correlation range was 0.37 to 0.65. The Beck Hopelessness Scale (Beck et al., 1974) was used as a criterion validity measure,

resulting in a negative correlation of -0.467. Subjects completed a one item self-assessment of hope using a 10 point rating scale with 1 indicating no hope and 10 indicating high hope. A nonsignificant relationship was found between this self-assessment and hope (r=0.1416). Nunnally (1978) states that single item indicators are known to sample only a limited portion of the potential content of any domain and are expected to be unreliable in repeated studies.

A factor analysis was done; however, the N of 55 is inadequate for drawing conclusions as a result of this procedure. Each of the three subscales was subjected to canonical factor analysis, in which the number of factors was limited to one. Items with the lowest "factor score coefficients" were identified for each subscale. The following items contributed the least to the Interpersonal Subscale:

-to have open communication,

-to resolve interpersonal conflicts, and

-to share joys and sorrows.

For the intrapersonal subscale, one item, "To be free from

pain" had a low factor score coefficient. For the global hope subscale, low factor score coefficients were found for:

-to have access to cultural facilities, and

-to be active in political activities.

When all thirty items were submitted to canonical factor analysis, all of the items loaded positively on the first factor. Stoner states this confirms that all of the items were measuring a single construct, hope. No rotation procedure was used.

a. Critique of Stoner's Hope Scale

Although Stoner seems to have improved the Hope Scale (Erickson et al., 1975) by making the scaling of the probability subscale more precise, the theoretical basis for this tool is still goal attainment, based on Stotland's (1969) view of hope. As indicated above, this narrow perspective on hope eliminates the rich multidimensionality of the construct and limits it to a particularistic measure of hope in terms of desired goals. Generalized hope as described by Dufault (1981) is not included in this instrument. Generalized hope can be thought of as a state which protects a person from despair, restores meaningfulness of life, and contributes

to overall well-being without being linked to a concrete object or outcome. A more comprehensive definition of hope needs to be explicated so that a more comprehensive measurement of this construct can take place. Inadequate theoretical underpinnings have been used in constructing the scale.

Some of the items added by Stoner (1982) seem irrelevant for persons who are close to despair, who are in a state of entrapment or for persons who are ill and are engulfed in concerns about self, or who are focusing on being able to engage independently in basic human functions. The target population for the Stoner Hope Scale (Stoner, 1982) was persons with cancer. Persons with cancer are coping with perceived threats to life (Weisman, 1979) and would seem less concerned about hoping for an improvement in television programming (an item on the global subscale), than about their comfort, quality of life for themselves and their families, achieving an inner peace and so forth.

Factor analysis using such a small sample of 55 persons with a scale having 30 items is inappropriate. Nunnally (1978) recommends having 10 subjects for each item on the test; in this case 300 subjects would be the minimum. Apparently no rotation procedure was used. This

is one of the basic tasks in conducting the factor analysis procedure. The three subscales do seem related, so that an oblique rotation may have been appropriate.

In her dissertation, Stoner (1982) does report item means, standard deviations and so forth. The factor analysis work is not mentioned in the published report of her work (Stoner and Kaempfer, 1985).

3. **Hope Index Scale**

The Hope Index Scale (Obayuwana and Carter, 1981), is a 60 item binary response (yes/no) questionnaire with 10 of these items used solely for determining social desirability. Hope is defined as the feeling that what is desired may turn out for the best. They propose that hope is a state of mind which results from the positive outcome of: ego strength, perceived family support, religion, education and economic assets. These five outcomes are said to comprise the "hope pentagon" and serve as the framework for developing the Hope Index Scale (HIS).

Unlike the previous two instruments which did not specify how the items were generated, items for this tool were generated as a result of a telephone survey of 500 subjects randomly selected from the phone book who were asked to use one word to describe hope (Obayuwana and

Carter, 1982). The words were grouped into 5 themes: religion, positive self-concept, group support, economic success and joyful anticipation. Joyful anticipation seemed to be a good category; however, it was replaced with educational assets in a follow-up article (Obayuwana et al., 1982). No explanation is given for omitting joyful anticipation or validation for including educational assets in its place. No clear description is provided about the 500 subjects who participated in the telephone survey. Information about their economic status, culture, sex, and age would all be relevant.

Exemplar items which seem remote from the construct being measured and not indicated as filler or social desirability items include:

-On the same day would you eat a favorite meal of yours for breakfast, lunch, or dinner?

-With respect to radio and television, do you prefer sports (or comedies) to news programs?

-Are there circumstances under which you are likely to cheat on your spouse?

-Do you have one particular habit you would rather get rid of if only you could?

The relevance of these and several other items on the HIS is questionable.

The range of scores is 0 to 500 with 10 points assigned to each of the 50 hope items. The high number indicates high hope. Hope levels have been specified as:

-450 - 500, optimal hope (superior coping ability),

-350 - 440, normal hope,

-250 - 340, mild hope deficit (maladaptive behaviors),

-150 - 240, severe/moderate hope deficit (significant coping inadequacies), and

-below 150, pathological hope deficit (serious suicide contemplation) (Obayuwana and Carter, 1981).

No description accompanies the decisions regarding these levels or extent of testing. Predictive validity was assessed by using Beck's Hopelessness Scale (HS) (Beck et al., 1974) with 150 psychiatric patients, 50 graduate students and 186 university faculty, working mothers, and hospital employees (Obayuwana et al., 1982). Mean HIS scores were 378 for students, 380 for faculty, and 208 for patients and nonpatient subjects, $p < 0.001$. A negative correlation between the HIS and the Hopelessness Scale was found, $r = -0.88$, significant at the 0.001 level.

The Kuder-Richardson formula 20 (used for dichotomous response scales) and the split-half reliability showed that the HIS was heterogeneous. They report the alpha value as significant at the $p < 0.01$, which "proves that

instrument to be internally consistent in spite of this heterogeneity," (Obayuwana et al., 1982, p.764). There is incongruity between the claim of internal consistency despite heterogeneous results from the Kuder-Richardson.

a. Critique of the Hope Index Scale

The binary response scale is a limiting scoring method (Nunnally, 1978). No factor analysis is reported to have been done. The items lack content validity and face validity in measuring hope. If an instrument does not have content validity, it is useless to go on to try to establish reliability (Nordbeck, 1985). Inconsistencies are noted in the hope pentagon, which provided the theoretical underpinnings for developing the instrument. How the items on the scale fit this hope pentagon is still a mystery; there is no logical consistency in development of the items from the theoretical definition posed.

4. Subjective Hope Assessment

Gottschalk's Hope Scale (Gottschalk, 1974; Gottschalk and Gleser, 1969) is a subjective approach to measuring hope which consists of a content analysis of five minutes of the subject's conversation using criteria for hope or hopelessness themes. Directives to the subjects are are follows: "This is a study of speaking and conversational

habits. I would like you to speak into the microphone of this tape recorder for five minutes about any interesting or dramatic personal life experiences you have ever had" (Gottschalk and Gleser, 1969 p. 248). Weights are given for hope for the following themes:

> References to self or others getting or receiving help, advice, support, sustenance, confidence from others or from self.
> References to feelings of optimism about the present or future.
> References to being or wanting to be or seeking to be the recipient of good fortune, good luck, God's favor or blessing.
> Reference to any kind of hopes that lead to a constructive outcome, to survival to longevity, to smooth-going interpersonal relationships (Gottschalk and Gleser, 1969, p. 248).

Weights are given for hopelessness for the following themes:

> References to not being or not wanting to be or not seeking to be the recipient of God's favor or blessing.
> References to self or others not getting or receiving hope, advice, support, sustenance confidence, or esteem from others or self.
> References to feelings of hopelessness, losing hope, despair, lack of confidence, lack of ambition, lack of interest, feelings of pessimism, or discouragement (Gottschalk and Gleser, 1969, p. 248).

Any criticism of subjective measurement can be applied to this approach. The subject is in complete control of choosing a conversation to share. The subject could choose to use neutral language in disclosing one's life experience to someone with whom the subject has no

relationship. Hopeful or hopeless life experiences may be far from the subject's consciousness at the time of the interview and so forth. The value of the Gottschalk Scale may be its being used in a multimethod monotrait approach to hope measurement.

F. **Summary**

The review of existing quantitative instruments to measure hope confirms a need for more work to be done to develop an instrument to measure hope based on a comprehensive definition of the construct which includes its complexity and multidimensionality. The existing instruments are lacking in psychometric rigor. Particularly obvious is the incomplete conceptualization of the construct before venturing ahead with writing items and inadequately testing the instruments. The nature of the domain of hope has remained loosely specified. Measurement takes place supported by a network of empirical and theoretical relations (Cliff, 1982). The nature of this network determines the nature of the instrument. Without thorough exploration of these underpinnings, any instrument will lack validity. Cronbach and Meehl (1955) describe the nomological network as a set of associations by which a concept is pinned

down. Properties of the phenomenon and propositions about hope are to be explicated. As more studies about hope are related, the nomological network expands and more precision about the construct is achieved. Since measurement of hope is lacking in the foundational work of conceptualizing the construct, inadequacies are present in establishing construct and predictive validity in the current measures of hope.

The critical elements of hope synthesized from the literature indicate that psychological well-being and purpose and meaning in life are closely related to hope. There is support therefore for using valid and reliable measures of psychological well-being and purpose and meaning in life to establish construct validity of the proposed hope scale. There has been a keen interest in and there have been prolific research efforts focusing on hopelessness using the Hopelessness Scale (Beck et al., 1974). Research on hope however, has received little attention. This may be due in part to the lack of an adequate tool to measure hope.

III. METHODOLOGY

The purpose of the study is to develop an instrument to measure levels of hope in adults and to evaluate its psychometric properties.

A. Instrument Development Process Overview

A domain sampling model provided the basis for this instrument development; that is, the instrument is to be a "random" sample of items from the domain of interest (Nunnally, 1978). Each step in instrument development is discussed briefly and includes: initial conceptualization of the construct; generation of items; pretesting the instrument; establishing reliability and establishing validity. The refined instrument is to be implemented with the intention of continued psychometric assessment and refinement.

1. Conceptualization of Hope

Conceptualization of the construct for this instrument resulted from a comprehensive literature review and qualitative research study about hope. All theoretical perspectives on the construct were reviewed.

The initial definition was refined as the review became comprehensive and after feedback from psychometric and content experts during the pretesting phase. The refined definition of hope used in constructing this instrument is as follows. Hope is a state of being characterized by an anticipation for a continued good state, an improved state or a release from a perceived entrapment. The anticipation may or may not be founded on concrete, real world evidence. Hope is an anticipation of a future which is good and is based upon: mutuality (relationships with others), a sense of personal competence, coping ability, psychological well-being, purpose and meaning in life, as well as a sense of "the possible". Two spheres of hope may exist: generalized hope and particularized hope (Dufault, 1981). Generalized hope contributes to overall well-being and provides a sense that life is worthwhile and is not dependent on anticipating achieving some specified goal. Particularized hope refers to achieving a desired outcome. Hope is manifested by affects, cognitions, and behaviors.

2. Item Generation

Items were generated based on the critical elements of hope identified from the literature and qualitative

research (see Appendix B). Critical elements of hope which provided the framework for item generation include: mutuality-affiliation, sense of the possible, avoidance of absolutizing, anticipation, achieving goals, psychological well-being--coping, purpose and meaning in life--spiritual well-being, freedom, reality surveillance, optimism, and mental activation. Common sense semantics guidelines were used in writing the items in terms of clarity, avoiding emotionally laden words, avoiding ambiguity, using simplistic terms, avoiding leading respondents to a predetermined response (Waltz et al., 1984). Furthermore, McIver and Carmines (1981) guidelines for writing items measuring an attitude were used:

> use the present not past tense,
> avoid statements that can have a factual interpretation,
> use statements that can be interpreted only one way,
> keep the language direct, simple, clear,
> use only one complete thought per item,
> avoid the use of universals as always, none, never (p. 19).

3. Content validation

Content validity refers to how well the instrument matches the domain of content being measured (Waltz, et al., 1984; Thorndike, 1982); it is a judgment about the representativeness of the items of the universe being measured (Kerlinger, 1973). To establish content validity

of this instrument a panel of four judges having expertise about hope rated each item on a three point scale: 1 = little or no hope information will be assessed by this item; 2 = moderate amount of hope information will be assessed by this item; 3 = maximum amount of hope information will be assessed by this item. The judges were provided with the theoretical definition of hope, the critical elements of the hope domain and the initial draft of the instrument. The judges were nurses, two were university professors (Ph.D. and D.N.Sc.), teaching graduate courses in nursing that encompassed hope content. The third and fourth judges included an adjunct clinical professor and a clinical specialist in cardiovascular nursing, both of whom had been this investigator's graduate students and had had content on hope taught by this investigator. The clinical specialist had current practice expertise, caring for patients with complex pathophysiological and psychosocial dynamics who manifested varied levels of hope. Collectively these judges had 68 years of nursing experience with a mean of 17 years. One judge left many items blank. Her ratings were not included in the content validity; instead a fifth

judge, Ph.D., nurse, clinical chief and university professor, was used.

The original instrument was a 56 item hope scale with a 10 item illness subscale. All four judges rated 29 of the items a 3; only eight items were rated a 1 indicating little or no hope information will be assessed. The rating scale was collapsed with ratings of 2 and 3 pooled together (maximal and moderate amounts of hope) and compared with items rated 1 indicating little or no hope. The proportion of interrater agreement was 0.879. The percent of agreement is an appropriate and sufficient approach to interrater reliability (Goodwin and Prescott, 1981). All items receiving a rating of one, even if only by one judge, were eliminated from the instrument.

4. Pretesting

Pretesting consisted of subjecting the instrument to content experts for interrater reliability as described above, having 6 psychometric experts critique it, as well as administering the instrument to a group of 75 university students to determine clarity of items, level of understandability, specificity of the directions and to obtain initial reliability and validity. Of the 75 students who participated in the pretest, 63 were nurses

and were enrolled in research courses; 12 were masters' students in a graduate course in rehabilitation counseling. Twelve of the 75 respondents were Ph.D. students, 51 were masters students and 12 were undergraduate R.N. completion baccalaureate students. Because of the nature of these courses, it was felt that the respondents would take their task seriously in responding to this instrument at an important phase in its development. Respondents were asked to complete the instrument and to answer six questions about: clarity of items, items to be eliminated, reaction to whether the items fit the rating scale, which items did not uncover hope information, and other comments they wanted to share about the instrument. Only 12 of these 75 pretest respondents were male. The age range of the respondents was 20 to 54 with a mean ages of 31.27, and median of 30.

The psychometric experts consisted of four faculty members at the University of Illinois, three of whom taught measurement courses and the fourth faculty member had developed and evaluated a number of instruments. The other two reviewers were doctoral candidates, each of whom had developed and tested instruments which measured psychosocial phenomena. The reviewers were asked to to complete a questionnaire specifically evaluating the:

appropriateness of the rating scale and its congruence with item statements, directions to the respondents, items which lacked clarity, items which were too complex, and items which did not appear to uncover information about hope. All suggestions regarding editorial critique and wording of items were incorporated into the refined instrument.

Cronbach's internal consistency alpha coefficient was calculated for the 75 respondents to be 0.95 with a test retest reliability at a two week interval at 0.87. The mean of the Hope Scale (examining only the 40 items to be used on the refined scale) with the 75 respondents was 175.6. Item to total correlations were examined in determining which items to eliminate from the scale as well.

5. Reliability

Reliability of the refined instrument was established by administering the instrument to 522 respondents. The value of Cronbach's (1951) alpha depends on the average inter-item correlation and on the number of items on the scale (Carmines and Zeller, 1979; Nunnally, 1978). The alpha increases as the average correlation among items increases and as the number of items increases (Carmines

and Zeller, 1979). In early stages of research measuring a construct, modest reliability of 0.70 is acceptable (Nunnally, 1978). In applied settings where decisions are to be made regarding treatment based on test scores, an r of 0.90 is a minimum and an r = 0.95 is desirable (Nunnally, 1978). Stability or consistency of the instrument over time is determined by test-retest reliability and should also be measured on new instruments. Test-retest reliability was measured at a two week interval for the pretest subjects as well as for 308 of the 522 subjects evaluating the refined hope scale. If the test-retest reliability is low, however, it may be that the construct being measured is not stable over time and not be a reflection of instrument instability.

6. Construct Validity

Construct validity is established to assure that the instrument is measuring what it purports to measure. Construct validity of the hope scale was assessed using criterion related methods (convergent and divergent validity) and factor analysis techniques. Factor analysis is the most powerful method of construct validity in that it clusters together measures of factors

that are related (Kerlinger, 1973); that is, items that share a common variance are clustered.

Construct validity for the Hope Scale was studied by correlating the newly constructed hope scale with instruments having known reliability and validity measuring constructs integral to the domain of hope such as psychological well-being and purpose and meaning in life and correlation of the hope scale to instruments measuring constructs opposite to hope, hopelessness. Convergent validity of the hope scale was established by correlating the hope scale to the Psychological Well-Being Scale (Campbell et al., 1976) and the Existential Well-Being Scale (measures purpose and meaning in life) by Paloutzian and Ellison (1982). Divergent validity was established by comparing the hope scale to the Hopelessness Scale (Beck et al., 1974).

B. Instruments

1. The Miller Hope Scale

The Miller Hope Scale (MHS) proposed for psychometric evaluation in this study is a 40 item scale using a five point Likert response format from 5 = strongly agree to 1 = strongly disagree (Appendix C). Guilford (1954) contends that the reliability of the rating scale

increases with increasing the number of choices in the response scale. The increased reliability levels off at a seven point scale. However, both Masters (1974) and Matell and Jacoby (1971) found that when using rating scales with more than five levels, respondents tend to use only a select few of the steps. The original hope scale was a 56 item scale, sixteen items have been eliminated as a result of the pretesting (Appendix D). A nine item subscale measuring hope in chronically ill persons is proposed but will not be evaluated at this time (Appendix E). The target population for the hope scale is adults. It is a generic instrument, not specified for a special group with select characteristics. The range of scores is 40 to 200, a high score indicating high hope. Twelve of the 40 items are stated negatively so that reverse scoring of these items is necessary (items # 11, 13, 16, 18, 25, 27, 28, 31, 33, 34, 39, 40). Examples of items needing reverse scoring include: "Time seems to be closing in on me." "I feel trapped, pinned down." Positively stated items include: "I look forward to an enjoyable future." "I intend to make the most out of life." Psychometric properties assessed on the refined scale are reported in Chapter IV.

2. Hopelessness Scale

The Hopelessness Scale (Beck et al., 1974) was used as a criterion-related measure in establishing construct validity of the hope scale (divergent validity), (Appendix F). The Hopelessness Scale (HS) has been used in studies on psychiatric patients for example, suicide attempters (Beck et al., 1975), depressives (Prociuk et al., 1976), and criminal psychiatric subjects (Durham, 1982). A sample item is "My future seems dark to me." The HS is a 20 item true false instrument with a range of scores from 0 to 20, the high score indicating high hopelessness. The internal consistency alpha coefficient is 0.93. The HS has been a significant predictor of suicide. In a 10 year study of 207 subjects with suicide ideation, hopelessness measured by the HS had a stronger relationship to eventual suicide than depression measured by the Beck Depression Scale (Beck et al., 1985).

3. Index of General Affect

Psychological well-being has been described as an integral component of hope (Jourard, 1970; Engel, 1968; Lynch, 1974; Korner, 1970). The Index of General Affect, also called the Psychological Well-being Scale (PWB) (Campbell et al., 1976) is a 10 item semantic differential

test designed to measure psychological well-being (Appendix G). Polar opposite adjectives are placed on a line with seven places between them on which the subject chooses a point best representative of his/her life. Examples are miserable/enjoyable, disappointing/rewarding. A score of one is assigned to the least favorable response and a seven to the most favorable response. Scores range from 10 to 70, with 70 indicating high psychological well-being. Means on each item using 2,146 subjects ranged from 5.31 on the adjectives "tied-down" versus "free" to 5.87 on the adjectives "useless" versus "worthwhile." Cronbach's alpha coefficient is 0.89. "The stability index is only 0.56 indicating that for this measure, stability is an underestimate of the reliability" in that psychological well-being varies over time and test-retest is inappropriate (Campbell et al., 1976, p. 48). The Index of General Affect was used to establish criterion related validity of the Hope Scale.

4. Existential Well-being Scale

Purpose and meaning in life is a dimension of hope (Frankl, 1962; Bettelheim, 1960; Raleigh, 1980; Dufault, 1981; Stanley, 1978 ; Peniazek, 1982; Lieberman and Tobin, 1983) and was used as another criterion-related measure

establishing construct validity of the hope scale. The Existential Well-being Scale (EWB) is a 10 item subscale of the Spiritual Well-being Scale designed to measure purpose and meaning in life (Paloutzian and Ellison, 1982). Respondents rate each item on a 6 point Likert scale from "strongly agree" to "strongly disagree." An example item is "I feel very fulfilled and satisfied with life." Test retest reliability coefficient for the EWB is 0.86. The internal consistency alpha coefficient is 0.78. The possible range of scores on the EWB is 10 to 60, with high scores indicating high existential well-being (Appendix H).

An additional one item, 10 point self-anchoring scale was used as another construct validation measure (Kilpatrick and Cantril, 1960). The item was stated, "Please rate your present state of hope (how hopeful you are now) by circling one number on the following scale from 1 to 10, with 1 indicating no hope and 10 indicating having the most hope possible." (Refer to Appendix C, item # 41).

Demographic information collected included age, sex, and status in terms of undergraduate, graduate student, or faculty member (Appendix I). Specific questions to

determine if the respondent had a health problem were asked so as to eliminate those subjects at this phase of instrument development. Two questions were posed: "Are you being treated for a chronic health problem? If yes, what is the problem?" "Do you take medication regularly? If yes, please list the medicines."

C. Sample

A convenience sample of 522 university students was included in examining the refined Hope Scale and an additional 75 university students participated in pretesting the instrument. The age range of the 522 respondents was 18 to 52 years, with a mean age of 21.45, S.D. of 4.66. Seventy-five per cent of the subjects were in the 18 to 22 year age group, 8.6% in the 23 to 27 year group. Sixty-four per cent (336) of the sample was female while only 27% (145) were male. (There were 41 missing values on sex). Age and sex characteristics are summarized on Table I.

Students enrolled in 12 different courses at two universities participated in the study. Students enrolled in the following courses were asked to participate: four nursing courses, two philosophy courses and six courses in fine arts.

Of the 522 subjects, the complete battery of instruments, including retest of the MHS, was administered to 308 subjects. No attempt was made to retest the entire 522 subjects. An additional 174 subjects completed the battery of tests but were not retested so that a total of 482 respondents completed the instruments administered to establish construct validity of the MHS (Miller Hope Scale, Index of General Affect, Psychological Well-being, and Hopelessness Scale). Forty more subjects were present in the eight classes visited for retesting the MHS who were not present for the initial testing, so data from these subjects is included in the entire sample of 522 subjects for factor analysis. These 40 subjects did not complete the entire battery of tests administered during the first classroom visit to establish construct validity on the MHS. Respondents are summarized on Table II.

TABLE I

AGE AND SEX CHARACTERISTICS

Select Demographics	Frequency	%
Age		
18 - 22	393	75.3
23 - 27	45	8.6
28 - 32	21	4.0
33 - 37	14	2.7
> 37	6	1.1
Missing values	43	8.2
Sex		
Male	145	27.8
Female	336	64.4
Missing values	41	7.9

TABLE II

SUMMARY OF NUMBER OF RESPONDENTS TO THE MILLER HOPE SCALE EVALUATION

Tests Completed	N	Cumulative N
Completed entire battery of tests including retest	308	308
Completed battery of tests without retest	174	482
Completed Hope Scale only	40	522

D. Procedure and Ethical considerations

Approval for conducting the study was obtained from the University Research Review Boards participating in the study as well as from the deans of the colleges and faculty responsible for the courses in which participating students were enrolled.

The investigator visited the classrooms at a convenient time in the progression of the course and not on a day of exams or other unusual stress. The nature of the instrument development exercise was explained to the respondents. They were assured that their participation was voluntary, whether or not they participated would not in any way affect their academic evaluation, their identity would not be revealed in any way and that published data would be in grouped form. Eight of the 12 classrooms were revisited after a two wekk interval to obtain a retest measure for consistency of the MHS over time.

E. Summary

Hope is a multifaceted construct having a significant influence on human behavior. Better understanding of this construct results from a systematic, critical and comprehensive process of developing an instrument to

measure hope. The challenge has been to develop an instrument to measure hope which does not reduce the construct from one of a powerful determinant of behavior to a trivialized representation of this phenomenon.

IV. RESULTS

An initial psychometric evaluation of the Miller Hope Scale was completed on 522 healthy young adults using reliability and validity procedures. Cronbach's alpha, test-retest reliability and criterion-related validity correlating the Miller Hope Scale with three other instruments related to hope as well as a one item hope self assessment was included. Further construct validation of the Hope Scale was completed using a maximum likelihood factor analysis with varimax and oblimin rotations. Data were analyzed using BMDP Statistical Software (Dixon et al., 1985) and the Statistical Package for the Social Sciences (SPSSX) (Nie, 1983) computer programs.

Preliminary analysis revealed missing data on the hope scale amounted to less than 1% of the sample (1 to 6 missing responses) on 30 items with 2% missing values (9 responses) on item 16, "I am apathetic toward life." Those subjects with responses missing were dropped from the analysis of reliability and construct validity.

A. Descriptive Data

The possible range of scores for the hope scale is 40

to 200 with high scores indicating high hope. The overall mean for the Hope Scale was 164.46 with a standard deviation of 16.31 and standard error of 0.72. The range of scores was 105 to 198. The distribution of the scores of the 522 subjects is skewed to the left with a skewness value of -0.633 and standard error of the skewness of 0.107 which was significant ($t = -5.92$, $p < 0.01$). A significant leptokurtic curve is also noted ($p < 0.01$) with a kurtosis value of 0.70 and standard error of the kurtosis of 0.213. Since the instrument was tested on a group representing healthy young adults, the high hope score and skewness to the left are expected. Tabachnick and Fidell (1983) suggest the median be reported for skewed distributions; the median was 165 and does not vary greatly from the mean in this case.

The possible range of scores for the Index of General Affect also called Psychological Well-being Scale (PWB), is 10 to 70. The mean was 55.22, standard deviation 9.21, with a range of scores from 16 to 70. The mean for the Purpose and Meaning in Life Scale or Existential Well-being Scale (EWB) was 41.64, standard deviation of 5.19, with a range of scores from 24 to 50. Select descriptive statistics are summarized on Table III.

TABLE III

DESCRIPTIVE DATA ON INSTRUMENTS
EXCLUSIVE OF BINARY RESPONSE DATA ON HOPELESSNESS SCALE

Descriptive Statistics	Miller Hope Scale	PWB	EWB
Item range possible	1 - 5	1 - 7	1 - 5
Range[a] of scores possible	40 - 200	10 - 70	10 - 50
Observed range	105 - 198	16 - 70	24 - 50
Mean	164.46	55.22	41.54
Standard deviation	17.65	9.21	5.19
Skewness	-0.633	-0.696	-0.797
S.E. Skewness	0.107	0.112	0.112

[a]High scores indicate high value on the variable.

Descriptive data were calculated on each item, including frequencies for each response level on the five point scale. The frequency of selecting the undecided response on the hope scale ranged from 4 respondents on item 4, "I am flexible in facing life's changes," to 115 undecided respondents for item # 13, I find myself becoming passive toward life." The mean number of undecided responses per item was 50. The total proportion of undecided responses was 0.097. The proportion of subjects selecting extreme scores (the low or high hope score) on the 5 point response scale of the hope instrument was also calculated. Only 0.01 selected the no hope extreme response whereas 0.33 selected the highest possible hope response. Item #5, "There are things I want to do in life," had the highest mean score of 4.77, while item #11, "Time seems to be closing in on me," had the lowest mean score of 3.3, despite reverse scoring of this item.

B. Reliability

Reliability refers to consistency of the measurement across repeated measures as well as consistency within the measure. The amount of random error (unsystematic) error present is inversely related to the degree of

reliability of the measuring instrument (Carmines and Zeller, 1979). Reliability was calculated using Cronbach's alpha and test retest correlation.

1. Cronbach's Internal Consistency Alpha

Cronbach's alpha is an estimate of internal consistency and depends upon the average inter-item correlation as well as the number of items on the scale (Carmines and Zeller, 1979; Nunnally, 1978). The internal consistency alpha coefficient of the Miller Hope Scale (MHS) was 0.93. Alpha coefficients were also calculated for the Hopelessness Scale (0.82), the Index of General Affect (0.91) and Existential Well-being (0.86). See Table IV.

Item to total correlations were calculated with lowest r = 0.14 for item # 35, " Although it is hard to pin down, I feel hopeful." Item # 11, "time seems to be closing in on me," had an r = 0.30. The beginning phrase for item 35 may have been problematic in that some subjects disagree with that component of the item, "although it is hard to pin down." Item # 16 had an item to total correlation of 0.32, "I am apathetic toward the life." The word "apathetic" in item 16 may not have been understood by all respondents. (During the data collection phase, the investigator was asked by two

subjects to define the term). The highest item to total correlation was 0.68 for item # 15, "I am positive about the future." The r of item # 29, "I am satisfied with life" was 0.67. Item # 8, "My life has meaning," had a correlation of 0.63. Subjects with missing data were dropped from the analysis so that of the 522 subjects, 486 were included in the internal consistency calculation.

2. Test-retest Reliability

Test-retest reliability was conducted on 308 subjects at a two week interval. The test-retest reliability was 0.82

C. Construct Validity

Construct validity refers to the extent to which an instrument is in accordance with theoretical expectations (Cronbach and Meehl, 1955). Criterion related methods also referred to as concurrent validity, convergent, and/or divergent validity are used to establish construct validity (Zeller and Carmines, 1983). Criterion related validation for the study consisted of convergent validation by correlating scores on the Hope Scale with scores on the Index of General Affect (measuring psychological well-being) (Campbell et al., 1976), Existential Well-being (measuring purpose and meaning in

life) (Paloutzian and Ellison, 1982), and a one item 10 point hope self-assessment scale from one = no hope to 10 = filled with hope. A divergent validation approach, correlating the Hope Scale to the Hopelessness Scale (HS) (Beck et al., 1974) was also done.

A Pearson Product moment correlation was used to correlate each of the instruments to the Miller Hope Scale with the exception of the binary response Hopelessness Scale. Because of the nominal response scale on the Hopelessness tool (true-false), a Spearman correlation coefficient was calculated for the Hopelessness Scale and the Hope Scale. Results of the correlations appear in Table V. Significant positive correlations are noted between the Hope Scale and: the one item self assessment of hope ($r = 0.69$), Psychological Well-being ($r=0.71$), and Existential Well-being ($r = 0.82$). As expected a negative correlation was obtained between the Hope Scale and the Hopelessness Scale ($r = -0.54$). See Table V.

D. Factor Analysis

The objective of factor analysis is to represent a set of variables in terms of a smaller number of hypothetical variables (Kleinbaum and Kupper, 1978). It is an efficient way of determining the minimum number of

TABLE IV

INTERNAL CONSISTENCY ALPHA COEFFICIENTS
Of CRITERION-RELATED VALIDITY SCALES AND
MILLER HOPE SCALE TEST-RETEST RELIABILITY

Coefficients	Miller Hope Scale	Hopelessness Scale	PWB	EWB
Alpha	0.93	0.82	0.91	0.86
Test retest reliability	0.82			

TABLE V

CORRELATIONS OF THE MILLER HOPE SCALE TO
CONSTRUCT VALIDATION INSTRUMENTS

MHS	Hope Self-Assessment	PWB	EWB	HS
Miller Hope Scale	0.69	0.71	0.82	-0.54

"hypothetical" factors that account for the observed variance in a set of data (Kim and Mueller, 1978a). An exploratory factor analysis without prior specification about the nature of the underlying factors was done using BMDP (Dixon et al., 1983). A maximum likelihood procedure was used with varimax and oblimin rotations. The underlying dimensions of the Hope Scale were explored with the intent of more clearly explicating the construct.

1. Rationale for selecting procedures

A factor components approach to factor analysis rather than a principal components approach was used so that communalities, the amount of shared variance, would appear on the diagonal of the correlation matrix instead of one's on the diagonal. The maximum likelihood procedure was chosen because it "best represents" the population values and it maximizes the variance with each successive factor extracted (Gorsuch, 1983).

The high internal consistency alpha coefficient ($r = 0.93$) calls for an oblique rotation to be performed (Gorsuch, 1983). Oblimin was the recommended BMDP oblique procedure (Dixon et al., 1985).

The chi square test of significance of the factors extracted is the "most satisfactory solution from a purely

statistical point"; however with large samples, large numbers of factors may be retained (Kim and Mueller, 1978b, p. 42). Lawley's ratio as a means of determining the significance of variance remaining in additional factors to be extracted was utilized (Tatsuoka, 1971).

Statistical, mathematical and theoretical-conceptual fit criteria were used in deciding the number of factors to extract. Lawley's test of significance was performed on two, three, four, five and six factor solutions. Mathematically, factors with eigenvalues greater than one are to be retained (Gorsuch, 1983). The scree test was used, whereby factors are plotted against the eigenvalue or amount of variance accounted for. When the curve levels off, no further factors are interpreted (Cattell, 1978). Loadings of items on a factor must reach the 0.30 level in order to be interpreted as salient (Tabachnick and Fidell, 1983; Nunnally, 1978; Gorsuch, 1983).

The residual matrix was examined to determine that all residual correlations are less than 0.10 to be assured that the reproduced correlation matrix is similar to the original correlation matrix and that factor extraction is adequate (Tabachnick and Fidell, 1983). Decisions about the substantive importance of a factor are also based on conceptual fit in terms of research and theoretical

developments on the construct (Kim and Mueller, 1978b). The logic and importance of the factor is determined by the researcher.

2. Exploration of the Correlation Matrix

The correlation matrix was examined to be sure that there are correlations between variables at r = 0.30 or above and yet do not reach r = 0.98 which would indicate multicolinearity. Multicolinearity results in a determinant of zero and therefore a singular matrix which cannot be inverted (Tabachnick and Fidell, 1983). The correlation matrix for the 40 item hope scale contains correlations above 0.30 with the highest correlation being 0.58 between item 7 (at peace with self) and item 27 (interest in previous enjoyable activity). The correlation between item 30 (needed by others) and item 37 (feel loved) was 0.56. Multicolinearity does not exist in this data.

3. Extraction of the Factors

Factors were extracted using maximum likelihood factor analysis with oblimin rotation. Varying factor solutions were studied: 2, 3, 4, 5 and 6 factor solutions. Criteria as described were applied. The Scree

test indicated that variance accounted for by the factors leveled off between 5 and 6 factors. Lawley's ratio of the sum of the eigenvalues divided by the sum of the communalities was calculated for each factor solution. If the ratio exceeds 0.85 or 0.90, then the remaining factors account for less than 10 to 15% of the relevant variance (Tatsuoka, 1971). Lawley's ratios for the 2, 3, 4, 5 and 6 factor solution were 0.85, 0.82, 0.774, 0.74 and 0.726 respectively. The ratio for the 3 factor solution was 0.82 indicating additional factors would contribute little to understanding the variance.

Simple structure was achieved by each factor solution. Simple structure refers to each variable loading on as few factors as possible without competing high loadings (above 0.30) on more than one factor (Gorsuch, 1983). No other factor contained a loading on the same variable close to the 0.30 or above level except for item # 36, "motivated to do what's important", had loadings of 0.34 and 0.33 on Factors 1 and 3 respectively. All eigenvalues on all solutions were greater than one. See Table VI. The variance explained by both two and three factor solutions is displayed in Table VII. A total of 28.34 percent of the variance is explained by a three factor solution. As indicated by Murphy, Powers, and

TABLE VI

EIGENVALUES FOR 2, 3, 4, 5, AND 6 FACTOR SOLUTIONS

	Eigenvalues				
Factors	2 Factor	3 Factor	4 Factor	5 Factor	6 Factor
1	7.598	6.446	4.127	3.239	3.041
2	3.168	3.295	3.370	2.417	2.308
3		1.59	2.626	2.398	2.021
4			1.223	2.227	1.79
5				1.260	1.384
6					1.171

TABLE VII

VARIANCE EXPLAINED BY TWO AND THREE FACTOR SOLUTIONS

Type of Variance	2 Factor solution I	2 Factor solution II	3 Factor solution I	3 Factor solution II	3 Factor solution III
Eigenvalue	7.598	3.168	6.446	3.295	1.59
Percent of total variance explained	19	7.92	16.12	8.24	3.98
Percent of cumulative variance	70.58	29.42	56.88	29.08	14.04

Jalowiec (1985), the small proportion of variance explained is related to the complexity and multiple determinants of human behavior.

The values of the residual correlation matrix were all less than the recommended value of 0.1 for all factor solutions.

Using Gorsuch (1983) criteria for a trivial factor as a factor having only two or three loadings of 0.30 and above, none of the factor solutions had trivial factors. However, the five factor solution had 4 variables with 0.30 to 0.475 loadings. This could be approaching trivial. The four factor solution had 4 loadings of between 0.30 to 0.52. Factor extraction criteria are summarized in Table VIII.

4. Interpreting the Factors

It was determined that a three factor solution would best reproduce the correlations among the observed items. Final decisions were based on the criteria in Table VIII as well as on the investigator's discretion regarding the reasonableness of the solution considering the conceptual underpinnings of hope. Variable loadings for the three factor solution are presented in Table IX.

Items loading above 0.30 for factor I are items

TABLE VIII

SUMMARY OF FACTOR EXTRACTION CRITERIA

Factors	Scree[a]	All Eigenvalues > 1	Lawley's Ratio	Simple Structure	Trivial Factors	Residuals <0.1
2	Yes	Yes	0.85	Yes	No	Yes
3	Yes	Yes	0.82*	Yes	No	Yes
4	Yes	Yes	0.77	Yes	No	Yes
5	Yes	Yes	0.74	Yes	Yes	Yes
6	No	Yes	0.73	Yes	Yes	Yes

[a]Whether plot continued to slope at the number of factors.

* Remaining factors explain less than 15% of the variance.

dealing with satisfaction with self in terms of self competence, personal beliefs, being at peace with self; satisfaction with others in terms of being loved, needed, having someone to share concerns, feeling help is available; and satisfaction with life in terms of life's meaning and being positive about most aspects of life Factor I was labelled "Satisfaction with self, others, and life."

Items loading on Factor II were all 12 of the reverse scored items which represented threats to hope (lack of hope) such as: feeling overwhelmed, trapped, pinned down, lack of inner strength, apathetic, passive, preoccupied with troubles which prevent future planning. Factor II was labelled "Avoidance of hope threats."

Factor III contained items about anticipation, expectation, planning for a future, planning to accomplish goals and do things in life. Factor III was labelled "Anticipation of a future."

5. Correlation between Factors

Correlations between the three factors is presented in Table X. Very high correlations between factors indicates redundancy (Cattell, 1978); however, this problem does not exist with the three factors extracted.

TABLE IX

FACTORS WITH ITEM LOADINGS

Items	Factors I	II	III
Factor I: Satisfaction with self, others and life			
29 Satisfied with my life	.74	.14	-.23
8 Life has meaning	.72	-.03	.04
23 Valued for what I am	.71	-.03	.04
7 Peace with self	.71	.08	-.23
37 Feel loved	.62	.06	.04
30 Needed by others	.60	-.02	.01
2 Positive about my life	.58	.16	-.09
10 Imagine positive outcomes	.57	.04	.15
24 Have someone to share concerns	.54	-.02	-.10
9 Make future plans	.53	-.09	.23
3 Anticipate enjoyable future	.50	.09	.06
15 Positive about future	.50	.23	.13
22 Ability to accomplish life goals	.44	.17	.26
4 Flexible with life challenges	.44	.04	.08
17 Have ability to handle problems	.40	.11	.14

TABLE IX (cont.)

FACTORS WITH ITEM LOADINGS

Items	Factors I	II	III
Factor I Continued			
19 Personal beliefs enable hope	.40	.13	.20
32 Can get through difficulties	.40	.10	.18
14 Intend to make the most out of life	.37	.15	.20
1 Receive help when ask for it	.38	-.08	.11
12 Have energy to do what's important	.32	.21	.06
36 Motivated to do what's important	.34	.21	.33
38 Try to find meaning in life	.30	.10	.27
Factor II: Avoidance of hope threats			
34 Feel overwhelmed	.03	.64	.16
18 Feel trapped	.17	.63	-.17
25 Feeling hopeless about some aspects of life	.12	.58	-.15
40 Feel uninvolved with life	.07	.54	.04
39 Preoccupied with troubles	.20	.53	-.21
28 Support withdrawn	.14	.50	.01
16 Apathy	.17	.50	.20

TABLE IX (cont.)

FACTORS WITH ITEM LOADINGS

Items	Factors I	II	III
Factor II continued			
13 Passive	-.05	.48	.14
11 Time closing in	.07	.45	-.25
33 No luck in life	.20	.37	.07
27 Uninterested in previous enjoyments	.06	.33	.02
31 Lack inner strength	.24	.30	.25
Factor III: Anticipation of a future			
5 Have things to do yet in life	.15	.10	.41
20 Value freedom	.10	.12	.40
26 Look forward to enjoyable things	.30	.14	.33
6 Set goals	.26	.10	.31
21 Spend time planning for the future	.24	.03	.30
35 Feel hopeful	.06	-.03	.30

The original correlation matrix was examined to assure that items having high correlations were also grouped together in the factors after the rotation. This procedure is recommended by Gorsuch (1983) to confirm that the factor rotation is adequate.

Factor I, Satisfaction with self, others, and life, had a correlation of 0.60 with Factor II, Avoidance of hope threats, and r = 0.35 with Factor III, Anticipation of future. Factor II had a lower correlation with Factor III of 0.24.

5. Screening for Outliers

The Mahalonobis distances were calculated for each respondent from the centroid of all cases, for factor scores and for each factor. The resulting chi square analysis for each distance revealed no outliers in this data.

TABLE X

FACTOR CORRELATIONS

Factors	Factor I	Factor II	Factor III
I	1		
II	0.60	1	
III	0.35	0.24	1

E. Summary

Initial psychometric evaluation of the Miller Hope Scale on 522 healthy young adults revealed a high internal consistency alpha coefficient of 0.93 and a two week test-retest reliability of 0.82. Correlations with the instruments for criterion related validity were also high, r = 0.71 with PWB, 0.82 with EWB and -0.54 with the Hopelessness Scale. The Hope Scale had an r of 0.69 with the one item hope self-assessment. As a result of the maximum likelihood factor analysis with an oblique rotation, a 3 factor solution was determined to best represent the original correlations.

V. DISCUSSION

The purpose of this study was to develop an instrument to measure hope in adults and to evaluate its psychometric properties.

A. Instrument Development

A systematic process of instrument development was used based on a thorough exploration of the nature and etymology of hope. Literature was reviewed and a qualitative research study about hope was conducted in order to arrive at valid indicators of the construct. Eleven critical elements of hope which were derived from the literature and from an exploratory study of hope of 59 persons who survived a critical illness (whose hope states had been threatened). These critical elements provided the framework for writing items which were intended to comprehensively capture the multiple dimensions of hope. (See Appendix B). A review of existing hope measures revealed that valid and reliable hope instruments developed from a thorough conceptualization of the construct was lacking. Previous attempts to measure hope were based on a narrow conceptualization of it as an

expectation for goal achievement (Erickson et al., 1975; Stoner, 1982) and did not encompass the multidimensionality 22 of hope.

A 56 item hope scale was developed and pretested using content and psychometric experts as well as 75 university students. The instrument was subsequently refined. An internal alpha coefficient of 0.95 and a two week test-retest reliability of 0.87 was obtained on the refined 40 item hope instrument using the 75 pretest subjects.

B. Psychometric Evaluation

Initial psychometric evaluation of the Miller Hope Scale was completed on a convenience sample of 522 healthy young adult university students. The intent was to develop a generic hope scale for adults and investigate normative properties of the instrument before attempting to study hope levels with the new instrument in persons who are ill. The decision whether to obtain a large enough sample to establish some norms on the instrument while at the same time having a somewhat unrepresentative sample (young adults) and not study an ill group of adults was weighed.

1. Reliability

The internal consistency alpha coefficient was 0.93, with a two week test-retest reliability of 0.82. Nunnally (1978) indicates that an internal consistency of 0.70 or greater is satisfactory for new instruments. Cattell (1978) expresses concern over high internal consistency (>0.95) as an indication of redundancy. Nunnally on the other hand does not pose these concerns but is interested in a very high internal consistency when the instrument is to be used for making treatment decisions. He recommends an internal alpha of 0.90 to 0.95 for using an instrument in a diagnostic and treatment situation.

2. Construct Validity

Criterion related construct validity using valid and reliable measures of constructs integral to hope (psychological well-being, purpose and meaning in life and a one item hope self-assessment) were correlated with the Hope Scale. A divergent method of correlating the Hope Scale with the Hopelessness Scale was also completed. Significant positive correlations were obtained between the Hope Scale and: the one item hope self-assessment ($r = 0.69$, Psychological Well-being ($r = 0.71$) and Existential

Well-being (r = 0.82). The expected negative correlation was obtained with the Hopelessness Scale (r = -0.54).

An effort to establish construct validity is essential when there is no universal acceptance of and/or knowledge about the essence of the domain (Nunnally, 1978; Kerlinger, 1973). The predicted positive and negative correlations with the Hope Scale were found with this sample. Specific facts need to be considered in interpreting construct validity. The criterion measures themselves must have validity. Whether the criterion measures selected fit the nomological network must also be considered (Cronbach and Meehl, 1955).

3. Factor Analysis

Factor analysis is another approach to construct validity and is used to summarize the interrelationships among items as an aid in the conceptualization of hope. A maximum likelihood factor analysis procedure was used to find the underlying dimensions of the hope scale that have the greatest likelihood of producing the observed correlation matrix of the items. The intent was to find the hypothetical configuration of factors such that the canonical correlation between the common factors and observed variables (items in this case) is the maximum

(Gorsuch, 1983). It was determined that a three factor solution would satisfactorily reproduce the correlations among the observed variables. Factor decisions were based on statistical, mathematical, and conceptual fit criteria. See Table VIII, Chapter IV. Salient loadings (measures of the degree of generalizability between the factor and each item) summarized from the factor structure matrix are found in Table IX, Chapter IV.

a. Factor I, Satisfaction with Self, Others and Life

Twenty-two of the 40 items had salient loadings (over 0.30) on factor one. Ten items were related to self (confidence, satisfaction): valued for what I am; at peace with self; have ability to handle problems; personal beliefs enable hope; have ability to accomplish life goals; flexible; intend to make the most out of life; can get through difficulties; have energy to do what is important. Four items were related to relationships with others: feel loved; needed by others; have some one to share concerns; receive help when ask. The remaining eight items were related to finding life meaningful: satisfied with life; life has meaning; positive about life; imagine positive outcomes; make future plans;

anticipate enjoyable future; positive about the future; and try to find meaning in life.

b. Factor II: Avoidance of Hope Threats

All twelve of the reverse score items (negative hope) or threats to hope loaded on factor II. These items include: feel overwhelmed; feel trapped, pinned down; hopeless about some aspects of life; feel uninvolved with life; preoccupied with trouble; passive; feel time closing in; uninterested in previously enjoyed activities; seems as though support has been withdrawn; lack inner strength; has no luck in life and apathetic toward life.

c. Factor III: Anticipation of a Future

Six items had salient loadings on factor III. These include: value freedom; spend time planning for the future; look forward to enjoyable things in life; set goals; feel hopeful; have things to do in life yet.

The three factor solution is congruent with the theoretical definition of hope used in this study. The eleven critical elements of hope used as a framework for

item generation are also reflected in the three factors:

I. Satisfaction with self, others and life,

II. Avoidance of hope threats, and

III. Anticipation of a future.

All forty items had a salient loading on one of the three factors.

C. Sample: Select Group

An effort was made to obtain a very large sample of healthy adults so as to establish norms on the Hope Scale prior to using the tool in health care settings. Subjects were 522 university adults and were included in the study if they had no chronic illness so that findings could be reported in terms of persons having no obvious threats to hope due to physical or mental illness. In this initial psychometric evaluation phase, limiting the subjects in this manner was justified. However, the group studied is a select group, university students, and is not representative of all young adults. Males were under represented in this sample (27.8% of the sample was male with 7.9% missing values on sex). Although the age range was 18 to 52, 75% of the subjects were in the 18 to 22 year age group with the next largest group being 23 to 27 year olds comprising only 8% of the sample. See Table I,

Chapter III. Facts about the nature of this sample will need to be considered as hope scores are compared with other groups of subjects. Further testing and refinement using representative samples in terms of age, sex and culture is needed.

D. Select Items: Reliability

Specific items having low item to total hope score correlations need to be examined, refined or dropped from the Hope Scale. Of the total 522 subjects, internal consistency alpha reliability was calculated on those respondents without any missing values (N = 486). As noted in Chapter IV, item # 35, "Although it is hard to pin down, I feel hopeful," had the lowest item to total r of 0.14. This item may have been problematic due to the phrase, "although it is hard to pin down." Since the hope scores of this sample were skewed, grouped at the high end of the hope scale, they may have disagreed with the introductory phrase of this item. That is, they are hopeful and it is not hard for them to pin it down. The total internal reliability coefficient for the MHS was 0.9298. Dropping item # 35 however, only resulted in a modest increase of the total alpha to 0.9312. The next

lowest item to total correlation was r = 0.3022 for item # 11, "Time seems to be closing in on me." Agreement with this item may be specific to the nature of this sample and may not be reflected in a different sample. That is, all of the respondents were university students, completing course requirements, meeting deadlines and preparing for exams. Time pressures may have been provoked by the nature of their role and have nothing to do with hope for time left to do what they enjoy in life. If item # 11 was dropped, once again, only a modest increase in the total alpha would occur to 0.9312.

It is interesting to note that satisfaction with life and optimism about the future had the highest item to total correlation. Item # 15, "I am positive about my future," having an r of 0.68 and item # 29, "I am satisfied with my life," having an r of 0.67.

E. On the Nature of Hope: A Recapitulation

Hope has been described as being as fundamental to human life as food and water (Fitzgerald, 1979). Rycroft (1979) says hope is a mental attitude toward the future, which recognizes uncertainty but at the same time envisages possibility. The future for some extends beyond wordly existence and involves transcendence in a

spiritual sense. Hope is not a passive waiting, but underpins action (Marcel, 1963; 1966). Belief and hope are inseperable (Gelwick, 1979). Hope is a belief that what is desirable and good is possible.

Human beings have capacity for hope partly because humans have ability to find meaning in the world and specifically in events which surround them (Charlesworth, 1979; Smith, 1965). Meaning and hope are inextricably bound to each other. If human existence is meaningless, it is also hopeless (Charlesworth, 1979). Despair is a loss of meaning and therefore loss of hope (Fitzgerald, 1979).

Hope is anticipation, expectation, assuming reality in futurity, a patient waiting for the "not yet" (Bloch, 1970b). Hope is said to activate, shape, and sustain psychological development (Aardema, 1984). It is intrinsic to ongoing psychological well-being. Since meaning in life and psychological well-being are integral to hope, valid and reliable measures of these constructs were used in establishing construct validity of the Miller Hope Scale.

The Miller Hope Scale encompassed the dimensions of hope espoused by philosophers, theologians, psychologists,

sociologists, anthropologists, and nurses. The scale was organized by the identified critical elements of the domain of hope: mutuality-affiliation, sense of the possible, avoidance of absolutizing, anticipation, achieving goals, psychological well-being, purpose and meaning in life, freedom, reality surveillance, optimism and mental activation. The theoretical definition of hope which undergirds the MHS is: Hope is a state of being characterized by an anticipation for a continued good state, an improved state, or a release from a perceived entrapment. The anticipation may or may not be founded on concrete, tangible evidence. Hope is an anticipation of a future which is good as is based upon identified critical elements, specifically: mutuality, sense of personal competence, coping ability, psychological well-being, purpose and meaning in life, and a sense of "the possible." A distinction can be made between particularized hope (a specific object for hope exists) and fundamental or generalized hope (described in terms of fulfillment, transcendence and meaning) (Fitzgerald, 1979; Dufault, 1981; Dufault and Martocchio, 1985).

Inspiring hope has been a significant role function for nurses. Watson (1979) has identified "instilling

faith-hope" as one of 10 carative factors in her humanistic model of nursing. Although the importance of hope in influencing behavior has been recognized by nurses (Travelbee, 1971; Vaillot, 1970; Buehler, 1975; Limandri and Boyle, 1978; Stanley, 1978; Heacock, 1983; Stoner and Keampfer, 1985; Burckhardt, 1975; Dufault and Martocchio, 1985; McGee, 1984; Hinds, 1984; Miller, 1983; 1984; 1985; Hickey, 1986), precision in evaluating hope states has been lacking.

Since hope is not easily quantified, little investigation about hope and its impact on response to therapy, survival or well-being has been done. Post hoc examination of events and subjects' subjective recall of hope promoting themes have provided some direction for hope instrument development (Frankl, 1962; Bettelheim, 1960; Henderson and Bostock, 1975; 1977; Miller, 1984; Miller, 1985).

F. Recommendations for Future Research

As a result of the development and initial psychometric evaluation of the Miller Hope Scale, the following suggestions for future research are made.

1. Use the Miller Hope Scale to compare levels of hope

in groups of persons with specific chronic health problems such as arthritis or cancer to norms established in healthy adults.

2. Compare levels of hope in differing developmental age groups, young adults, middle aged adults and elderly; in groups experiencing differing levels of stress; and in groups with differing coping resources.

3. Study the relationship between hope and adjustment to chronic physical illness.

4. Study the impact of hope and survival of critical illness.

5. Continue exploratory research of persons surviving crises to identify hope inspiring themes.

6. Study the impact of therapists' hope levels on client hope in psychotherapeutic environments.

7. Test specific interventions to inspire hope using the MHS as a measure of the dependent variable.

8. Conduct multivariate analyses in which the influence of hope, self-esteem, existential well-being and social support on quality of life is depicted.

9. Continue psychometric evaluation of the MHS using representative samples of age, sex and race.

10. Continue construct validation by studying "known groups" that is, groups expected to differ on the MHS.

G. Conclusions

The strengths of this research are similar to strengths of any instrument development exercise and can be summarized as follows: having systematically developed the hope scale using a framework of the identified critical elements of hope; completing an exploratory study on the nature of hope; pretesting research as a basis for continuing conceptualization of the construct as well as instrument refinement; and having used a multitrait approach and multiple analyses to arrive at construct validity. Perhaps the greatest strengths of this research lie in presenting an exemplar process of instrument development, concretizing an elusive construct and providing stimulation for nurses to consider the power of hope in helping patients achieve well-being.

VI. APPENDICES

Appendix A

SELECT HOPE DEFINITIONS

Author and Type of Report	Hope Defined
Dufault (1981) Research	Hope is a multidimensional life force characterized by confident yet uncertain anticipation of a possible and personally significant future. Concomitants of hope: faith, trust, love, courage, patience, uncertainty, joy, peace, humor, involvement, sense of well-being. Antecedents of hope: stress, major hardship, suffering, life review, threatening situation, challenge with uncertain outcome.
Hinds (1984) Research	Hope is the degree to which an adolescent believes that a personal tomorrow exists; this belief spans 4 hierarchical levels: 1. Forced effort - degree to which person tries to take on a more positive view. 2. Personal possibilities - extent of belief in second chance for self. 3. Expectation for a better tomorrow - positive yet nonspecific future orientation. 4. Anticipation of a personal future - identification with specific and positive personal future possibilities.

Appendix A (cont.)

Gottschalk (1974) Research	Hope is a psychological state rather than a trait; based on self-reliance. It is a measure of optimism that a favorable outcome is likely, not only in one's personal earthly activities, but also in cosmic and spiritual events. It includes a feeling of receiving help, support, confidence from others, being the recipient of good fortune, God's blessings, and optimism.
Raleigh (1980) Research	Hope involves goal attainment. It is an expectation, an orientation toward the future. Antecedent to hope is a sense of control over the environment to attain the goal.
Lieberman and Tobin (1983) Research	Hope is a set of personally significant affective-cognitive predictions the person makes about the future. It involves a pleasurable anticipation that things will change for the better. It is a confident expectation of personally gratifying change in the intermediate future.
Obayuwana and Carter (1982) Research	Hope is a state of mind resulting from the positive outcome of ego strength, religion, perceived human family support, education, and economic assets. Five themes of hope include: 1. Religion, spiritual awareness, 2. Positive self-concept, drive, 3. Group support, 4. Economic success or plentifulness, and 5. Joyful anticipation, positive outlook.

Appendix A (cont.)

Meissner (1973) Clinical	Hope is a sense of the possible. It includes purposeful intention. Hope is an elemental strength of the human ego.
Henderson and Bostock (1977) Clinical	Hope is a coping strategy for dealing with overwhelming emotions such as fear or sadness. Hope is thinking that the distressing situation will be ameliorated.
Bernard (1977) Conceptual	Hope is the belief and expectation that one has some control over life and the future, that unpleasant events are products of both personal perspective and fate, and that problems will be mastered or will fade.
Frank (1968) Conceptual	Hope inspires a feeling of well-being and is a spur to action. Hope is desire accompanied by expectation.
Green (1977) Conceptual	Hope is the felt anticipation of anything desired. The affect, hope, has an activating effect in mobilizing energy to facilitate achieving the expected outcome.
Stotland (1969) Conceptual	Hope is an expectation greater than zero of achieving a goal. Hope is a prerequisite for action. People who are hopeful are active, vigorous, and energetic.
Wright and Shontz (1969) Conceptual	Hope is maintained by use of reality surveillance - searching for clues that confirm that maintaining hope is feasible.

Appendix A (cont.)

Lynch (1974) Conceptual	Hope is a sense of the possible. It is a fundamental knowledge and feeling that there is a way out of difficulty. Hope is an interior sense that help is available exterior to the person. Hope is freedom from entrapment.
Marcel (1962) Conceptual	Hope is a refusal to accept an intolerable situation as final. Hope is meaningful in the fullest sense when the individual is tempted to despair. "to hope" is different from "to hope that."
Pruyser (1963) Conjectural	Reality to hopeful persons is not fixed and crystallized, but open-ended. Hoping is a continual re-evaluation of reality, perceiving reality in a larger scope than when not hoping.
Kiesler (1977) Conjectural	Hope is a belief that positive things will or may occur in the future.

Appendix B

CRITICAL ELEMENTS OF THE DOMAIN OF HOPE WITH INITIAL ITEMS GENERATED

Items were written with this response scale in mind:

SA = Strongly agree U = Undecided
A = Agree D = Disagree
SD = Strongly Disagree

I refers to an Illness Subscale item.

Mutuality (Lynch, 1974,)
Affiliation (Dufault, 1981)
Nonalienation (Bloch, 1970)
I-thou relationship (Marcel, 1962; Buber, 1970)
Communion with another (Marcel, 1962)
Trust in another (Dufault, 1981).
Unconditional love (Vam Kaam, 1976)
Significant others are hopeful (Buehler, 1975; Butler, 1962; Frank, 1968; Fitzgerald, 1972; Streeter, 1973; and Wright and Shontz, 1968.

1. When I ask for help, I will receive it.

2. I know there are others who care about me.

3. I have someone who shares my concerns.

4. I receive affection from others.

5. I feel loved.

6. I am needed by others.

Sense of the possible (Lynch, 1974)

1. Hope can be present in all aspects of my life.

2. I am hopeful.

I 3. Although there are setbacks, I remain hopeful.

4. Although it is hard to pin down, I feel hopeful. (Hope as a mystery, Marcel, 1962).

Appendix B (cont.)

Avoid absolutizing (Lynch, 1974)

1. I am flexible in confronting life's challenges.

2. When facing problems, I try to explore all options.

3. I recognize that there are aspects of my life I cannot control (Lynch, 1974).

Anticipate future; anticipation-waiting (Lynch, 1974)
Expectation (Entralgo, 1956) anticipate pleasure

1. There are things I want to do in life.

I 2. Despite setbacks, I maintain an optimistic outlook.

I 3. Although the waiting seems long, I anticipate having better days.

4. I spend time planning for the future.

I 5. I know there are better days ahead (Lynch, 1974).

I 6. I trust that things will work out.

7. I look forward to an enjoyable future.

8. I enjoy my surroundings.

9. I look forward to enjoying life's beauty.

Firm beliefs, set goals (Stotland, 1969)

1. I can set up goals I want to achieve.

2. I am preoccupied with troubles which prevent my planning for the future.

3. I am able to accomplish goals in life.

Appendix B (cont.)

Identity-Autonomy (Bettelheim, 1960)
Self-competence (Lange, 1978)
Self-esteem (Lange, 1978)

I 1. Despite any physical changes due to illness, I'll still be the same me.

2. I regard myself as a unique person.

3. I am valued for what I am.

4. I am confident of my abilities.

Psychological well-being (Haberland, 1972; Kastenbaum and Kastenbaum, 1971; Menninger, 1959)
Psychological comfort (Lange, 1978; Stanley, 1978)
Enduring (Bloch, 1970)
Hope is a resource for coping - adaptive functioning (Meissner, 1973)

1. I am at peace with myself.

2. I am happy.

I 3. When my pain is controlled, I feel hopeful.

4. I maintain a sense of humor (Dufault, 1981).

Purpose - meaning in life (Frankl, 1962; Smith, 1965; Haberland, 1972)
Religiosity, renewed spiritual self (Castles and Murray, 1979; Raliegh,1980)

1. My life is meaningful.

2. My personal religious beliefs help me be hopeful (Dufault, 1981).

3. God's love and presence are sources of hope.

4. Hope can result from prayer (Dufault, 1981).

Appendix B (cont.)

5. I try to find meaning in life events.

6. I can rise above difficulties I encounter. (Stanley, 1978).

7. I know I can get through difficulties.

Freedom (Lynch, 1974)

1. I am able to make plans for my own future.

2. I feel trapped, pinned down.

3. I am free to form my own attitudes.

4. A freedom that cannot be taken away from me is my freedom to form my own attitudes. (Bettelheim, 1960; Frankl, 1962)

Reality surveillance (Wright and Shontz, 1968)
Mental mechanisms

1. I am able to imagine a positive outcome to most of life's challenges.

2. It would be helpful if I said positive things to myself to get me through difficult times.

I 3. I can search for clues which help me be hopeful.

4. Despite the lack of obvious clues which support hope, I can still maintain hope.

5. My coping ability is great.

I 6. Thinking about beauty in the world helps me overcome suffering.

Appendix B (cont.)

Optimism about past, present, future (Gottschalk, 1974)
Past life satisfaction (Verwoerdt and Elmore, 1967)
Life review of past hopes fulfilled (French, 1952)
Perception of having time - extension of time (Raleigh, 1980)

1. My past successful life helps me stay optimistic about the future.

2. It is easy for me to develop positive attitudes.

3. I have coped successfully with life's challenges.

I 4. I have been successful in getting through problems in the past.

5. I intend to make the most out of life.

6. Time seems to be closing in on me.

Mental and physical activation - Energy (Lange, 1978)
Motivating force (Menninger, 1959)

1. I am filled with energy.

2. I am eager to do things I enjoy.

3. When it comes to things that are important to me, I am motivated.

Passivity of hopelessness (Lynch, 1974; Gottschalk, 1974)

1. I find myself becoming passive toward most things in life (Lynch, 1974).

2. I feel I do not have any inner resources (Lynch, 1974).

3. I am apathetic toward life.

4. I feel noninvolved with life (Lynch, 1974).

5. I am hopeless about some parts of my life.

Appendix B (cont.)

6. It seems as though all my support has been withdrawn.

7. It is hard for me to maintain my previous interest in enjoyable activities.

8. I have not been the recipient of good luck in life (Gottschalk, 1974).

9. I am so overwhelmed, nothing I do will help.

Appendix C

MILLER HOPE SCALE

Please record the last four digits of your social security number_____

Record your birthdate_____

Circle one number for each statement which best describes how much you agree with that statement right now. The numbers refer to:

1 = Strongly Disagree
2 = Disagree
3 = Undecided
4 = Agree
5 = Strongly Agree

There are no right or wrong answers.

	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
1. When I ask for help I usually receive it.	1	2	3	4	5
2. I am positive about most aspects of my life.	1	2	3	4	5
3. I look forward to an enjoyable future.	1	2	3	4	5
4. I am flexible in facing life's challenges.	1	2	3	4	5
5. There are things I want to do in life.	1	2	3	4	5
6. I am able to set goals I want to achieve.	1	2	3	4	5
7. I am at peace with myself.	1	2	3	4	5
8. My life has meaning.	1	2	3	4	5
9. I make plans for my own future.	1	2	3	4	5

Appendix C (cont.)

	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
10. I am able to imagine a positive outcome to most challenges.	1	2	3	4	5
11. Time seems to be closing in on me.	1	2	3	4	5
12. I have energy to do what is important to me.	1	2	3	4	5
13. I find myself becoming passive toward most things in life.	1	2	3	4	5
14. I intend to make the most out of life.	1	2	3	4	5
15. I am positive about the future.	1	2	3	4	5
16. I am apathetic toward life.	1	2	3	4	5
17. I have ability to handle problems.	1	2	3	4	5
18. I feel trapped, pinned down.	1	2	3	4	5
19. My personal beliefs help me feel hopeful.	1	2	3	4	5
20. I value my freedom.	1	2	3	4	5
21. I spend time planning for the future.	1	2	3	4	5
22. I am able to accomplish my goals in life.	1	2	3	4	5
23. I am valued for what I am.	1	2	3	4	5

Appendix C (cont.)

	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
24. I have someone who shares my concerns.	1	2	3	4	5
25. I am hopeless about some parts of my life.	1	2	3	4	5
26. I look forward to doing things I enjoy.	1	2	3	4	5
27. It is hard for me to keep up my interest in previously enjoyable activities.	1	2	3	4	5
28. It seems as though all my support has been withdrawn.	1	2	3	4	5
29. I am satisfied with my life.	1	2	3	4	5
30. I am needed by others.	1	2	3	4	5
31. I do not have any inner strengths.	1	2	3	4	5
32. I know I can get through difficulties.	1	2	3	4	5
33. I will not have good luck in life.	1	2	3	4	5
34. I am so overwhelmed, nothing I do will help.	1	2	3	4	5
35. Although it is hard to pin down, I feel hopeful .	1	2	3	4	5

Appendix C (cont.)

	Strongly Disagree		Undecided		Stronly Agree
36. I am motivated to do things that are important to me.	1	2	3	4	5
37. I feel loved.	1	2	3	4	5
38. I try to find meaning in life events .	1	2	3	4	5
39. I am preoccupied with troubles that prevent my planning for the future.	1	2	3	4	5
40. I feel uninvolved with life.	1	2	3	4	5

41. Please rate your present state of hope (how hopeful you are now) by circling one number on the following scale from 1 to 10, with 1 indicating no hope and 10 indicating having the most hope possible.

1	2	3	4	5	6	7	8	9	10
No Hope									Filled with Hope

Appendix D

ITEMS ELIMINATED FROM THE REFINED MILLER HOPE SCALE

-I regard myself as a unique person.

-My past successful life helps me stay optimistic about the future.

-It is easy for me to develop positive attitudes.

-I receive affection from others.

-When facing problems, I try to explore all options.

-God's love and presence are sources of hope.

-A freedom that cannot be taken away from me is my freedom to form my own attitudes.

-I have coped successfully with life's challenges.

-I recognize there are aspects of my life I cannot control.

-I am hopeful.

-I am confident of my abilities.

-I maintain a sense of humor.

-I enjoy my surroundings.

-It would be helpful if I said positive things to myself to get me through difficult times.

-I can rise above difficulties I encounter.

-I know there are others who care about me.

Appendix E

ILLNESS SUBSCALE

	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
1. I know there are better days ahead.	1	2	3	4	5
2. I trust that things will work out.	1	2	3	4	5
3. I can find reasons to keep positive about my health.	1	2	3	4	5
4. When I am comfortable, I am more optimistic.	1	2	3	4	5
5. Despite any physical changes due to illness, I'll still be the same me.	1	2	3	4	5
6. Even though there are setbacks, I keep an optimistic outlook.	1	2	3	4	5
7. I am hopeful even though I see no signs of improvement.	1	2	3	4	5
8. There is nothing I can do to help myself.	1	2	3	4	5
9. I no longer care about the things I used to care about.	1	2	3	4	5

Appendix F

HOPELESSNESS SCALE

Please respond to each item by circling T if you think the statement is a TRUE description of yourself right now or F if you think the statement is a FALSE description of yourself right now.

	TRUE	FALSE
1. I look forward to the future with hope and enthusiasm.	T	F
2. I might as well give up because I can't make things better for myself.	T	F
3. When things are going badly, I am helped by knowing they can't stay that way forever.	T	F
4. I can't imagine what my life would be like in 10 years.	T	F
5. I have enough time to accomplish the things I most want to do.	T	F
6. In the future, I expect to succeed in what concerns me most.	T	F
7. My future seems dark to me.	T	F
8. I expect to get more of the good things in life than the average person.	T	F
9. I just don't get the breaks and there's no reason to believe I will in the future.	T	F
10. My past experiences have prepared me well for my future.	T	F
11. All I can see ahead of me is unpleasantness rather than pleasantness.	T	F
12. I don't expect to get what I really want.	T	F

Appendix F (cont.)

13. When I look ahead to the future, I expect I will be happier than I am now.	T	F
14. Things just won't work out the way I want them to.	T	F
15. I have great faith in the future.	T	F
16. I never get what I want so it's foolish to want anything.	T	F
17. It is very unlikely that I will get any real satisfaction in the future.	T	F
18. The future seems vague and uncertain to me.	T	F
19. I can look forward to more good times than bad times.	T	F
20. There's no use in really trying to get something I want because I probably won't get it.	T	F

Appendix G

PSYCHOLOGICAL WELL-BEING SCALE

Place an X on one place between each pair of words for the following items, 1 through 10, indicating how you tend to view your life right now. There are no right or wrong answers.

1. Miserable	___	___	___	___	___	___	___	Enjoyable
2. Empty	___	___	___	___	___	___	___	Full
3. Disappointing	___	___	___	___	___	___	___	Rewarding
4. Doesn't give me a chance	___	___	___	___	___	___	___	Brings out the best in me.
5. Boring	___	___	___	___	___	___	___	Interesting
6. Discouraging	___	___	___	___	___	___	___	Hopeful
7. Lonely	___	___	___	___	___	___	___	Friendly
8. Useless	___	___	___	___	___	___	___	Worthwhile
9. Tied-down	___	___	___	___	___	___	___	Free
10. Hard	___	___	___	___	___	___	___	Easy

Appendix H

EXISTENTIAL WELL-BEING SCALE

Circle one number for each statement which best describes how much you agree with that statement right now. The numbers refer to:

1 = Strongly disagree
2 = Disagree
3 = Undeciced
4 = Agree
5 = Strongly agree

There are no right or wrong answers.

	Strongly disagree	Disagree	Undecided	Agree	Strongly agree
1. I feel that life is a positive experience.	1	2	3	4	5
2. I don't know who I am, where I came from, or where I'm going.	1	2	3	4	5
3. I feel unsettled about my future.	1	2	3	4	5
4. I feel very fulfilled and satisfied with life.	1	2	3	4	5
5. I feel a sense of well-being about the direction my life is headed.	1	2	3	4	5
6. I don't enjoy much about life.	1	2	3	4	5
7. I feel good about my future.	1	2	3	4	5
8. I feel that life is full of conflict and unhappiness.	1	2	3	4	5

Appendix H (cont.)

	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
9. Life doesn't have much meaning.	1	2	3	4	5
10. I believe there is some real purpose for my life.	1	2	3	4	5

Appendix I

GENERAL INFORMATION

Thank you for participating in a research effort to develop a new instrument to be used in the area of health care. Please read carefully each item on the attached questionnaires and answer each item honestly. Your responses are needed to evaluate these instruments.

Your identity will not be known to this investigator or to any professors at your college.

Thank you very much.
Judith F. Miller
Doctoral Student, Nursing
University of Illinois, Chicago

Last four digits of your Social Security Number_____

Birthdate_____

Do not put your name on the questionnaires but continue to use the same identifying number (last four digits of your social security number). Please answer the following.

Age _____

Sex: 1. Female _____
2. Male _____

Please indicate your status by checking one of the following:

Faculty member _____
Graduate Student _____
Undergradute student _____
Other _____

Are you being treated for a chronic health problem?

Yes _____
No _____

If yes, what it the problem?

Do you take medication regularly?

Yes _____
No _____

If yes, please list the medicines.

VII. CITED LITERATURE

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Davis-Taber National League for Nursing Doctoral Fellowship, 1985-1986

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Book of the Year Award from the American Journal of Nursing, for Coping with Chronic Illness: Overcoming Powerlessness, 1983

Marquette University Intramural Research Grant for Inspiring Hope in the Seriously ill: Patient and Nurses' Perspectives, 1982-1983

Marquette University Intramural Research Grant for Loneliness and Well-being in Chronically Ill and Healthy Adult, 1981-1982

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