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PSYCHOSOCIAL DEVELOPMENT OF ADOLESCENTS WITH CANCER

The Ohio State University

PH.D. 1984

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PSYCHOSOCIAL DEVELOPMENT OF ADOLESCENTS
WITH CANCER

DISSERTATION

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

By

Mary Patricia Gavaghan, B.S., M.A.

The Ohio State University

1984

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Dr. Dale Blyth

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Approved By

A handwritten signature in dark ink, appearing to read "Charles Wenar", is written over a horizontal line.

Adviser

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To the teenagers at Columbus Children's Hospital
whose cooperation and openness made this study possible.

ACKNOWLEDGMENTS

This research project was in no way a solitary endeavor and I am grateful for the support of a number of people.

I would like to thank the members of my committee, Dr. John Gibbs, Dr. Dale Blyth, and Dr. Thomas Linscheid, for the thoughtful and constructive comments and suggestions they provided throughout the course of this study. Special appreciation goes to my adviser, Dr. Charles Wenar, for his help and encouragement not only on this project but in all of my graduate work.

This study would not have been possible without the support and cooperation of the staff at Columbus Children's Hospital, particularly Dr. Jane Roach, Dawn Anderson, and Melinda Rager. Not only was their assistance invaluable but it was a pleasure to work with them.

Thanks are extended to my fellow student, Theresa Diserio, for her helpful scoring of research protocols.

Finally, I am grateful to my family and friends for making my time spent not working so enjoyable and enabling me to renew my efforts in the task at hand.

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PUBLICATIONS

- Gavaghan, M., Arnold, K., & Gibbs, J. (1983) Moral judgment in delinquents and nondelinquents: Recognition vs. production measures. Journal of Psychology, 114, 267-274.
- Gavaghan, M., Rasnake, K., Bailey, D., Lilley, R., & Clark, P. (Eds.) (1983) Readings in educational psychology for health professionals. Lexington, Mass.: Ginn Custom Publishing.
- Gibbs, J., Arnold, K., Morgan, R., Schwartz, E., Gavaghan, M., & Tappan, M. (1984) Construction and validation of a multiple-choice measure of moral reasoning. Child Development, 55, 527-536.

FIELDS OF STUDY

Major Field: Clinical Child Psychology

Area of Specialization: Pediatric Psychology

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Chapter I

INTRODUCTION

Due to recent advances in medical treatment, increasing numbers of patients are surviving the illness of cancer. Once considered to be a fatal disease, cancer is now viewed as "a chronic illness with an uncertain outcome" (Levine & Hersh, 1982, p. 369). Presently, about one-half of young patients diagnosed with cancer can expect to survive for a long time, and many will probably be cured. This change in prognosis has profound implications for the way in which mental health professionals will be called upon to deal with cancer patients. In the past, the role of the psychologist has been, primarily, to support the patient and his family, and to help them prepare for a death. Cancer survival has raised a number of new issues in mental health fields, most importantly, the impact of cancer on the long-term psychological adjustment of survivors. Cancer patients must cope with long periods of aversive treatments, unpredictable remissions and relapses, and the uncertainty of death. Recent investigations of the psychological adjustment of cancer survivors suggest that this population is at risk for the development of psychological sequelae (Koocher, O'Malley, Gogan & Foster, 1979; O'Malley, Koocher, Foster & Slavin, 1979).

A number of writers have suggested that adolescence is perhaps the most demanding stage of life in which to be called upon to deal with cancer (Levine & Hersh, 1982; Rainey, 1982; Marten, 1980). The

difficulties of coping with cancer are compounded by the conflicts that accompany adolescence. Cognitively, adolescents are fully able to comprehend their diagnosis and prognosis. However, they may not have developed the level of personality integration or the adult defense mechanisms needed to cope well with the diagnosis (Levine & Hersh, 1982). According to Erik Erikson (1968), adolescents are struggling with the important developmental task of identity formation. They are primarily concerned with what they appear to be in the eyes of others, as compared to what they actually believe themselves to be. The disruptions posed by an illness such as cancer, may have profound implications for the accomplishment of this developmental task. Further, ego identity development is considered by many to be an important factor in overall psychological maturity and long-term adjustment (Loevinger, 1966). For these reasons, it seems crucial to study the impact of the experience of cancer in adolescence, on the process of identity formation.

A frequently cited problem in dealing with adolescent patients, is noncompliance with medical regimens (Litt & Cuskey, 1980). Patient compliance has been related to a perception of personal autonomy and control (Strickland, 1975). Similarly, identity achievement has been associated with the perception of internal control (Adams & Shea, 1978). This raises questions about whether the noncompliance demonstrated by many adolescents is in some way related to the struggle of attempting to achieve a stable sense of identity and personal autonomy.

The present study will examine the process of identity formation in adolescents with cancer, as compared to healthy youths. The

relationship between identity formation, perception of control, and patient compliance will also be investigated.

Chapter II

LITERATURE REVIEW

Psychological Adjustment of Seriously Ill Adolescents

In a text on the hospitalized adolescent, Anna Freud (1976) characterizes adolescence as

" . . . a period when mind as well as body undergo changes which tax the individual's resources to the utmost. The shedding of infantile love-ties, the acceptance of sexual maturing, the assumption of social responsibilities are formidable tasks by themselves, causing serious upheavals. They become increasingly complicated if, at a time when physical sensations are in any case suspect and upsetting, illness intervenes and the body, instead of being a potential symbol of pride, strength and advance, becomes a source of pain, fear, deterioration and shame. Illness in adolescence negates the very progression toward independent adult status which is the aim of this developmental stage."

While controversy exists in the literature over the inherent turmoil of adolescence, a number of writers discuss the possible negative effects of serious illness on the normal progression through the adolescent period. Presently, theoretical writings dominate the literature and there is little objective data available on the psychological adjustment of ill adolescents.

Rainey (1982), in a text on psychosocial aspects of medical practice, has written a chapter on adolescents with cancer. He believes that these patients can best be understood against a matrix of normal adolescent development. His discussion focuses on the fundamental development task of adolescence--the achievement of a sense of identity, as it is classically described by Erikson (1963). Various components of the identity formation process are highlighted as they relate to serious illness. The first of these is the achievement of autonomy from dependent family ties. Rainey observes that serious illness can threaten autonomy and foster dependence and regression. Unfortunately, dependence-independence conflicts may be played out in problems with patient compliance. Another component of identity formation is the developing of a comfortable body image and a positive sense of self-esteem. The effects of serious illness, as well as treatment side effects, may set adolescents apart from peers and lead to feelings of inferiority and loss of self-esteem. Finally, preparing for future occupational and familial goals may be complicated by the uncertainty of disease prognosis. This theoretical discussion of psychosocial aspects of serious illness in adolescents is typical of those found in the medical literature.

Marten (1980) describes the adolescent's reaction to serious illness based on twelve years of observation and experience with this population. He views the normal adolescent struggle between dependency needs and striving for independence as being greatly intensified by a catastrophic illness such as cancer. He also finds that the adolescent's attempt to conform to peers (without dependence, weakness or

disfigurement) as a means of gaining self-esteem, is greatly hampered by the experience of serious illness. Marten calls for objective research to further assess these speculations regarding the impact of illnesses, such as cancer, in adolescence.

Hofman, Becker and Gabriel (1976) present a theoretical discussion of seriously ill adolescents which is drawn from the works of Blos, Erikson, Anna Freud and Piaget. They view illness as posing obstacles to the youth's efforts toward emancipation and role definition. They discuss issues which may be most salient at each stage of adolescence. The young adolescent, undergoing pubertal development, may be likely to present body image concerns, intensified by the effects of illness. In middle adolescence, independence and autonomy struggles may predominate. Finally, in late adolescence, the patient may be primarily concerned with achieving a functional role definition. A similar theoretical formulation of the primary concerns of patients in early, middle and late adolescence is presented by Lourie (1976).

Zeltzer (1980) describes the difficulty seriously ill adolescents have with the psychosocial tasks of:

- 1) development of a comfortable body-image and self-esteem
 - 2) creation of an identity through socialization
 - 3) establishment of emotional and economic independence
 - 4) sexual identity formation
 - 5) future goal-orientation and career development or employment"
- (p. 71).

Zeltzer notes the lack of objective data on the psychosocial development of seriously ill adolescents and calls for empirical validation of the notions widely discussed in the literature.

Theoretical presentations of the psychosocial impact of illness on adolescents similar to those already described abound in the medical literature (Coupley & Cohen, 1981; Spinetta, Deasy-Spinetta, McLaren, Kung, Schwartz & Hartman, 1982; Hofman, 1975; Becker, 1980) and in the nursing literature (Tiedt, 1972; Morrow, 1978).

Research

While much has been written about the psychological impact of serious illness, few empirical investigations have been conducted. And, unfortunately, only a very few investigations focus specifically on the adolescent's reaction to serious illness.

Early descriptive studies in this area concluded that adolescents often exhibited maladaptive or pathological responses to a serious physical illness and required psychiatric help (Easson, 1970; Lowenburg, 1970; Kaplan, Grobstein & Smith, 1976; Mattson, 1972; Knowles, 1971). These early studies have been criticized, however, due to their lack of objectivity and anecdotal nature. Some studies were based on patients referred to psychiatric clinics, thus skewing the sample. Finally, the looseness with which the term "pathological" was used has been criticized, as some researchers view the behaviors described as normal responses of healthy individuals to a non-normal crisis situation (Spinetta et al., 1982). Because of these criticisms, this review will be limited to objective, empirical investigations.

Theoretical writings in this area have often taken a developmental approach, that is, they have considered the impact of illness on the progression through normal adolescent developmental tasks. Empirical investigations have yet to utilize this approach. There have been investigations, however, which have examined constructs related to adolescent developmental tasks in ill populations.

One of the most comprehensive studies of psychological adjustment among pediatric cancer survivors has been conducted by a group of researchers at the Sidney Farber Cancer Institute (Koocher, et al., 1980; O'Malley, et al., 1979; Cogan, et al., 1979). One-hundred and fourteen cancer survivors, who had been diagnosed between birth and 18 years of age, were studied in this follow-up investigation. Subjects were assessed by means of the Ruter and Graham (1968) Interview Schedule. The cancer survivors were found to have a high rate of adjustment problems. Fifty-nine percent demonstrated at least mild psychiatric symptom formation, with 12% rated as markedly or severely impaired. A control group was not used in this investigation, rather the characteristics of the survivors rated as well-adjusted, versus those with adjustment problems, were compared. Interestingly, the most significant factor in determining long-term adjustment was the patient's age at diagnosis. Patients diagnosed as older children or adolescents were more likely to have problems in adjustment. The authors offer several possible explanations for this finding. It may be that the older patients are more aware of the seriousness of their illness. Or it may be that the developmental tasks of late childhood and adolescence are

more disrupted by serious illness than are the developmental tasks of earlier periods.

Harper (1978) compared MMPI profiles of disabled and nondisabled adolescents. The disabled group consisted of 52 male and female paraplegics and quadriplegics treated at a rehabilitation center. The disabled adolescents were found to have significantly higher scores than nondisabled adolescents on the following MMPI scales: for males - Scales 1 (Hypochondriasis), 2 (Depression), 5 (Masculinity-Femininity), 8 (Schizophrenia), and 9 (Mania); for females - Scales 1 (Hypochondriasis), 6 (Paranoia), 7 (Psychasthenia), 8 (Schizophrenia), and 9 (Mania). The investigator concludes that this data support the theory that the restrictions imposed on physically disabled youths increase vulnerability to emotional difficulties and adjustment problems.

Steinhausen (1981) has compared 210 chronically ill and handicapped children and adolescents to healthy, matched controls. The chronically ill group consisted of hemophiliacs and diabetics, and the handicapped children had disorders such as scoliosis and cerebral palsy. Subjects were assessed using Catell's Children's Personality Questionnaire scales from several other personality inventories measuring neuroticism, extraversion, aggression, and perceived parental behavior. Significant differences were not found between chronically ill and healthy subjects as a group, however, some deviant protocols were found among chronically ill patients with more severe symptomatology. Handicapped subjects were shown to be more introverted, hesitant, skeptical and withdrawn, and to possess less ego strength than healthy peers. No results are reported for children and adolescents separately. The authors concluded

that the visibility of an illness may play a role in the youngster's ability to cope with it.

Kellerman, Zeltzer, Ellenberg, Dash and Rigler (1980) have conducted a major investigation of 168 adolescents with various chronic and life threatening illnesses and 349 healthy high school students. The group of ill adolescents included patients with cancer, diabetes, cystic fibrosis and cardiac, renal and rheumatological disorders. All adolescents were given standardized measures of trait anxiety, self-esteem, and health locus of control. No significant differences were found between groups of healthy and ill adolescents on measures of trait anxiety of self-esteem. On the health locus of control measure, adolescents with oncologic, cardiac, renal, and rheumatological disorders were found to be more external than healthy peers. Youths with diabetes mellitus and cystic fibrosis did not differ significantly from healthy adolescents on this construct. Thus, some support is provided for the hypothesis that certain chronic and life-threatening illnesses are associated with a reduction in the adolescent's sense of control. In general, however, the authors conclude that the data do not support the notion of psychological deviance in seriously ill adolescent populations.

Using the same sample described above, Zeltzer, et al., (1980) examined the perceived impact of illness on adolescents. An illness-impact questionnaire (IIQ), designed by the authors, addresses the issues of relationships with family members, school and peer activities, independence and autonomy, perceptions of personal, social and sexual functioning, future orientation and effects of treatment. Healthy

adolescents responded to the questionnaire in terms of illnesses they had experienced, which were usually minor, e.g., colds, allergies, sinus problems, headaches and minor surgery. A surprising 30% of the healthy sample reported a current illness, while some subjects in the chronically ill group reported "no current illness." Results using the IIQ showed that total illness impact scores did not differ significantly between health and ill groups, however, there were differences in area of impact. Healthy adolescents reported greater disruptions in freedom, popularity and peer activities when illnesses occurred. Rheumatology patients reported disruptions in freedom, body image, relationships with parents, and disruptions due to side effects of treatment and changes in appearance. Cystic fibrosis patients reported disruptions due to treatment side effects and thinking about their illness when well. Cardiology patients reported disruptions in freedom, school activities, and concerns about sexuality. Adolescents with cancer reported the greatest number of areas of disruption, including freedom, body image, school activities, relationships with family members, treatment side effects and changes in appearance. Renal and diabetic patients reported concerns similar to those of healthy adolescents. Both severity of illness and prognosis of disease were related to total illness-impact scores. Also, significant correlations were found between illness-impact scores and the constructs trait anxiety, self-esteem, and health locus of control described in the previous study (Kellerman, et al., 1980). Adolescents reporting greater impact of illness were also likely to report higher anxiety, lower self-esteem, and reduced sense of control, and the correlations

between these constructs were greater in the illness group than in the healthy group. The investigators interpret the results to indicate that, in general, chronically ill adolescents do not represent a pathologically pathological population. However, the frequency and nature of the adolescents' concerns over illness issues should not be overlooked. It would be erroneous to conclude that this group did not require psychological attention and assistance (Deasy, et al., 1982). The lack of significant differences between total illness-impact scores of healthy and ill adolescents may be due to de-emphasis or denial of the illness process on the part of some ill adolescents, as evidenced by their reporting of "no current illness." The reliance on only self-report measures in these studies may be problematic. Another reason for lack of significant differences in illness-impact scores between healthy and ill groups is that chronically ill adolescents may have had opportunities to develop some successful mechanisms for coping with illness.

Most recently, Orr, Weller, Satterwhite, and Pless (1984) have looked at the effects of chronic nonfatal illnesses (e.g., asthma, diabetes) on children and adolescents. They initially sampled 160 children between the ages of 6 and 14 with a chronic illness. They were then able to contact 106 subjects from the original sample for a follow-up study when the patients' ages ranged from 13 to 22. At this time, they compared subjects who had recovered from their illness, those whose conditions had remained unchanged, those whose conditions had worsened and had some impairment in daily living, and a healthy, matched control group. The researchers attempted to evaluate the

psychosocial functioning of each group through use of the California Psychosocial Inventory and a structured interview focusing on social and family relationships. The investigators found no significant differences between the adolescents who had recovered from their childhood illnesses, and the control group that had always been well. While some differences were found between the chronically ill group without impairment and the control group, the greatest differences were found between the ill group with impairment and the healthy group. The main differences found centered around the adolescents' making plans for the future, gaining independence, involvement in peer activities, satisfaction with family life, and perception of personal well-being. The results supported the hypothesis that chronic illness in adolescence has a small, but measurable effect on psychosocial adjustment. The researchers concluded that "there is no inherent theoretical reason to believe that the impact of illness should be so global or severe as to produce consistent psychiatric disturbance." (p. 56). They believe, however, that chronic illness in adolescence, particularly when it is accompanied by a physical impairment, may be associated with problems in specific areas of psychological functioning. They suggest that counseling for these youths be tailored to these specific areas to prevent more general maladjustment.

A current reading of the literature on the psychological adjustment of seriously ill adolescents reveals confusion and contradictions. There are at least two reasons for this. First, investigators have approached the problem differently, examining different psychological constructs, and using different assessment techniques. It is

interesting that researchers have not as yet utilized a developmental approach to determine the impact of serious illness in adolescence, as has been so frequently suggested in theoretical discussions of this issue.

A second reason for discrepancies in study results is that researchers have differed on what behaviors are interpreted as pathological, as opposed to behaviors which are regarded as healthy or adaptive responses to a crisis. All of the investigators cited here have reported difficulties experienced by adolescents dealing with serious illness, however, Zeltzer, et al., (1980) and Kellerman, et al., (1980), concluded that these youths represented a psychologically normal or healthy population; while Steinhausen (1981), Harper (1978), O'Malley, et al., (1979) and Koocher, et al., (1980) reached the conclusion that this group was psychologically deviant. What seems important here is not what researchers choose to regard as healthy or pathological. Rather, the question should be whether seriously ill adolescents are developmentally in step with their peers, or whether the disruptions imposed by physical illness interfere with the accomplishment of age-appropriate developmental tasks. If the latter is the case, it would then seem appropriate to provide special interventions for these youths to forestall developmental delays and possible maladjustment.

Identity Formation

"I have called the major crisis of adolescence the identity crisis; it occurs in that period of the life cycle when each youth must forge himself some central

perspective and direction, some working unity, out of the effective remnants of his childhood and the hopes of his anticipated adulthood; he must detect some meaningful resemblance between what he has come to see in himself and what his sharpened awareness tells him others judge and expect him to be. This sounds dangerously like common sense; like all health, however, it is a matter of course only to those who possess it, and appears as a most complex achievement to those who have tasted its absence." (Erikson, 1958, p. 14).

The concept of an identity can be traced back to philosophical debates centuries old. More recently, psychologists and sociologists such as William James (1910), George Herbert Mead (1934) and Harry Stack Sullivan (1953), have written on the complex subject of the self, of which identity is one aspect. Currently, however, the most influential writer on the subject of identity has been Erik Erikson (1959, 1963, 1968; Marcia, 1980). This review will not attempt to survey the vast number of ways in which notions regarding the self or identity have been considered. Rather the concept of ego identity will be presented within the context of Eriksonian theory.

Erikson proposes a psychosocial developmental theory arising out of an ego analytic framework. Ego psychology, rather than rejecting Freudian theory, has extended and elaborated the theory, with a greater focus and emphasis placed on the ego and its ascribed functions. While Freud asserted that the ego developed in response to the

frustration of id impulses and was dependent on the id for psychic energy; ego psychologists (e.g., Hartmann, Kris & Loewenstein, 1946) proposed that the ego arose as an independent structure possessing its own energy.

Erikson describes the growth of the ego and differentiation of ego functions as requiring the progressive resolution of eight psychosocial crises. A crisis designates "a necessary turning point, a crucial moment, when development must move one way or another, marshalling resources of growth, recovery and further differentiation" (Erikson, 1968, p. 16). The developmental task or psychosocial crisis facing the individual at each age period is shown in Figure 1.

<u>Age</u>	<u>Psychosexual Stage</u>	<u>Psychosocial Crisis</u>
Infancy	Oral	Trust vs. Mistrust
Toddler	Anal	Autonomy vs. Shame
Preschool	Phallic	Initiative vs. Guilt
School Age	Latency	Industry vs. Inferiority
Adolescence	Genital	Identity vs. Identity Diffusion
Young Adulthood		Intimacy vs. Isolation
Middle Adulthood		Generativity vs. Stagnation
Older Adulthood		Ego Integrity vs. Despair

Figure 1. Erikson (1963)

The psychosocial stages of ego development are superimposed upon Freudian stages of psychosexual development. In describing development

as psychosocial, Erikson emphasizes the necessity of all development occurring within a social matrix. As the individual develops increasingly differentiated ego functions, society provides both institutions and caretakers who enable the individual to adapt that newly-developed function to social needs. Thus, Erikson's theory simultaneously considers shifting zones of libidinal concentration, growing ego capabilities, and social institutions.

The adolescent task of identity formation is considered, by many, to be the central crisis of all development (Gardner, 1982). Marcia (1976) describes the task in this way: "The formation of ego identity involves a synthesis of childhood identifications in the individual's own terms, so that he establishes a reciprocal relationship with his society and maintains a feeling of continuity within himself. It represents a reformulation of all that the individual has been into the core of what he will be. . . If one forms his own identity, some of those (parents) who have sought their identities in him are going to be displeased and non-supportive. There is a certain amount of pressure on many adolescents, particularly in the very competent one, to be everything to everyone. The price for this is that they must settle then for being no one to themselves and dilettantes. If one is to develop an identity, he must choose among alternatives and make commitments to the alternatives chosen." (p. 6-7).

Identity Statuses

Marcia (1966) has operationalized the concept of identity formation by focusing on the two criteria Erikson felt were necessary for identity achievement, namely crisis and commitment. In interviewing college

students, Marcia found that those individuals committed to goals and values were of two distinct types. Some had experienced a period of doubt, indecision and questioning before making choices. Others were committed to goals and values that they had always believed in, never really questioned, and these were typically those of their parents. Among uncommitted youths, again two variations were seen. Some seemed unconcerned and unbothered by their present state of indecision, while others were actively struggling to define and clarify goals and values. The latter were viewed as being in an identity crises. Thus, based on the two variables of crisis and commitment, Marcia defined four identity statuses as follows:

Identity Achievement. These individuals have experienced a period of questioning and decision-making and have committed to certain goals, values, or ideologies. (crisis, commitment)

Moratorium. These youths are not yet committed to goals, values or ideologies but are actively in a period of questioning and decision-making. (crisis, no commitment)

Foreclosure. These youths are committed to certain goals, values or ideologies, without having experienced a period of questioning or decision-making. (no crisis, commitment)

Identity Diffusion. These individuals are not committed to goals, values or ideologies and are unconcerned by their present state of indecision. (no crisis, no commitment)

Measurement of Identity Status

An individual's commitment to goals and values could clearly be evaluated in a number of different content areas. Investigators have

attempted to focus, however, on a limited number of content areas, those which appear to be the most salient, in order to standardize research efforts.

Marcia (1966) chose occupation and ideology (political and religious) as important content areas in the investigation of exploration and commitment. Erikson has written of these areas of commitment as being highly salient in adolescence.

Other investigators (e.g., Waterman, 1982) engaged in more current research efforts, and particularly in research involving both male and female subjects, have broadened the possible content areas of investigation to include: vocational plans, role of spouse, role of parent, family-career priorities, religious beliefs, political ideology, and sex-role attitudes.

Various methods have been used to assess the presence of crisis and commitment in these content areas. Marcia (1966) used a semi-structured interview format, as well as an incomplete sentence blank. He found that the semi-structured interview procedure enabled the investigator to obtain the most information about identity status. Waterman (1982) has expanded the original interview formats constructed by Marcia, adding the content areas described above.

Attempts have been made to develop objective measures to assess the presence of crisis and commitment in the areas of occupation and ideology (Adams, Shea & Fitch, 1979; Simmons, 1971), however, the validity of the information obtained from these does not equal that yielded using a semi-structured interview procedure.

Research

As stated earlier, no research has been done investigating identity status patterns in adolescents with serious physical illnesses, although theoretical and clinical literature suggest that this population may have difficulty negotiating the task of identity formation. This may be particularly true in identity content areas that require making plans for the future (e.g., career and family) as opposed to more ideological content areas (e.g., religion). Currently, there is much research data on identity patterns and variables associated with identity in normal adolescents.

Developmental aspects of identity. True longitudinal investigations of identity development have not, as yet, been conducted. Using a quasi-longitudinal approach, Meilman (1977) studied the formation of identity in five age groups of males: 12, 15, 18, 21, and 24 years old. It was found that early adolescents were typically in diffusion or foreclosure statuses and that a modal developmental shift to identity achievement generally occurs between the ages of 18 and 21. Stark and Traxler (1974) obtained similar results. Offer, Marcus and Offer (1970) studying 19 and 20 year old males found that most had not yet consolidated a committed stance on identity issues, but were on the verge of doing so. Significant age trends in overall identity development were noted by Wagner (1976) in males and females between 10 and 18 years of age. Finally, Constantinople (1969) found consistent increases in identity attainment over the four college years. In a review of the literature, Marcia (1980) concludes the following to be the safest generalization regarding identity formation

in the adolescent years: "Identity increases from early adolescence (age 12) until late adolescence (ages 18 to 21); at the earlier ages one may expect a predominance of (temporary) foreclosures and identity diffusions, many of whom will begin crossing over into the moratorium and identity achievement statuses around age 18. By age 21, the highest proportion of individuals will be identity achievements." (p. 169). The limit to this generalization is that it is drawn primarily from data on healthy, white males. More ambiguous patterns have been found in female samples (Constantinople, 1969; Matteson, 1974) and in samples of black adolescents (Hauser, 1971). Additionally, the majority of research in identity formation has been done with college students. However, work by several investigators, using non-college subjects, supports the critical nature of the 18 to 21 year old period in attaining identity achievement status (Meilman, 1977; Munroe & Adams, 1977; LaVoie, 1976).

Variables related to identity status. Identity status has been studied in relation to a number of different variables, several of which are relevant to the problems to be addressed in this study. Perhaps one of the most consistent findings in the literature to date is that identity status does not appear to be related to IQ or to scholastic aptitude in males or females (Marcia, 1966; Marcia & Friedman, 1970; Schenkel, 1975; Cross & Allen, 1970). Therefore, unlike age and race, intelligence does not appear to be an important determinant of identity status.

Another frequently replicated finding in the identity status literature is that adolescents in foreclosure score significantly higher

on measures of authoritarianism than adolescents in other statuses. Youths in moratorium score significantly lower on such measures than youths in other statuses (Marcia, 1966, 1967). It should be noted that in these studies, authoritarianism was measured using the "authoritarian submission and conventionality" subscale of the California F Scale (Adorno, et al., 1950). In considering ill adolescent patients in various identity statuses, one might expect foreclosed adolescents to be the most submissive and complaint patients, while adolescents in moratorium may be more questioning of medical authorities.

Another interesting finding in the literature is the relationship between identity status and perceived locus of control and autonomy (Waterman, Buebel & Waterman, 1970; Howard, 1975; Neuber & Genthner, 1977; Orlosfsky, Marcia & Lesser, 1973; Adams & Shea, 1979). It has consistently been found that adolescents in the identity achievement status have a more internal sense of control, while diffuse youths have an external locus of control. Findings regarding adolescents in foreclosure and moratorium are contradictory. These relationships will be discussed in further detail in the following section.

Locus of Control

The internal-external locus of control construct was formulated by Jullian Rotter (1966). The construct is based on the observation that individuals regard rewards or reinforcements differently depending upon their view of the causal relationship between behavior and reinforcement. An individual may view reinforcement as contingent upon his own behavior or personal attributes. He would thus be characterized

as having an internal locus of control. Alternately, an individual may perceive reinforcement as the result of luck, chance, fate, or under the control of powerful others in the environment. Such individuals would be identified as having an external locus of control. Using scales constructed to measure the dimension of internality-externality, Rotter (1966) demonstrated that there are consistent differences in the degree to which individuals perceive control as being internal or external. Additionally, the locus of control variable was found to be a major determinant of behavior on various learning and performance tasks.

Levenson (1981) has further developed the locus of control construct by making an important differentiation between two external orientations. One perception is that the nature of the world is basically unordered and random. Here, reinforcement is attributed to chance. Alternately, there may be a belief in the basic order and predictability of the world with the expectation that powerful others are in control. It is felt that individuals having this perception will think and behave differently because, rather than viewing the world as unpredictable, the potential for control exists. In addition to these two external orientations, Levenson describes an internal orientation similar to Rotter's. Levenson (1981) presents data to support the validity of separating Rotter's unidimensional internality-externality scale into three dimensions of expectancy: Internality (I scale), Powerful Others (P scale), and Chance (C scale).

Research

The locus of control construct has been related to a multitude of variables. Those relevant to the present study will be reviewed.

Demographics. Some investigators find sex differences in the locus of control construct (Levenson, 1972). Males typically score higher on P scales. Gender differences have also been found to be important moderating variables in examining relationships between locus of control and other personality variables (Platt, Pomeranz, Eisenman & DeLisser, 1970). Socioeconomic and racial differences have also been found using the scales (Garcia & Levenson, 1975). Low-income subjects perceive greater control by chance, while black subjects have significantly higher expectations of control by chance and powerful others than white subjects. In terms of age, Ryckman and Malikioski (1975) provide evidence for developmental trends in the locus of control construct. Internality has been shown to increase from youth to adulthood.

Locus of control and identity status. Adams and Shea (1978) proposed the notion that locus of control may be related to identity status in youths since both constructs "serve as integrative psychological mechanisms to give meaning, structure, and direction to behavior through their screening and evaluative function." (p. 62). Indeed, when college students were studied, relationships between these variables were found. Committed youths, that is, youths who were identity achieved or foreclosed, scored significantly higher on internal locus of control than diffused youths. Youths in moratorium fell between the aforementioned groups. The opposite rank-ordered

differences were found on the chance locus of control scale, with diffusion subjects scoring significantly higher than identity achieved and foreclosed subjects. On the powerful others scale, diffusion males scored significantly higher than other male groups, and no significant differences were found among female identity groups.

Waterman, Beubel, & Waterman (1972) obtained similar findings using Rotter's (1966) unidimensional internality-externality scale. Youths scoring high on ego identity were found to have a more internal locus of control, while those scoring low on ego identity perceived control as being external. This measure did not differentiate the external orientations of control by powerful others and chance. The authors viewed the locus of control scale as measuring the achievement of a "sense of autonomy," which is related to Eriksonian psychosocial development.

While the literature is fairly consistent in finding identity achievement subjects to be more internal and diffused subjects to be more external, some discrepancies are noted in studies of foreclosed and moratorium subjects. Matteson (1974) found foreclosure and diffusion subjects to score lower on perception of internal control than moratorium and identity achieved subjects. This pattern of results was also reported by Orlosky, Marcia, and Lesser (1973). This confusion of results may be due to the failure to differentiate external orientations of chance and powerful others in early research.

Health Locus of Control

The locus of control construct has proven to be quite useful in the field of health. Perception of control has been found to be

relevant to a number of health-related behaviors, such as the adoption of sick role behaviors, the use of preventative measures, and receptivity to medical regimens (Levenson, 1981). In light of these findings, a number of investigators have focused on the locus of control variable in health settings and have attempted to construct health-specific locus of control scales.

The Health Locus of Control Scale (HLC; Wallston, Wallston, Kaplan, & Maides, 1976) is a unidimensional internality-externality measure similar to Rotter's instrument. More recently, Wallston, Wallston and DeVilles (1978) have developed the Multidimensional Health Locus of Control (MHLC) Scales along the lines of Levenson's measure. The three health-specific scales of Internality, Chance, and Powerful Others are correlated with the respective global scales of Levenson's instrument.

Locus of control and illness. Several studies have found seriously ill patient groups to have a lower internal locus of control than healthy control subjects. Greber (cited in Levenson, 1981), comparing 35 female cancer patients to matched controls, found that they scored significantly lower on Levenson's Internality Scale. DeVellis, DeVellis, Wallston and Wallston (1980) administered both Levenson's general measure and a health specific locus of control measure to seizure patients. It was found that, in patients whose seizure activity was more severe and less predictable, locus of control was more external. The researchers believe that the data support the notion that negative experiences over which there is little control are conducive to the development of a high belief in external control and low belief in internal control. Kellerman, et al., (1980) study of locus of control

in seriously ill adolescents also supports this notion. Adolescents with cancer, cardiac disorders, renal disorders, and rheumatologic disorders were found to have significantly more external perceptions of control than their healthy peers.

In the preceeding studies, locus of control has been viewed as a dependent variable related to health status. A substantial body of research examines locus of control as an independent variable in relation to various health-related behaviors, such as compliance with medical treatment. These relationships will be considered in the following section.

Patient Compliance

Patient compliance has been defined as the extent to which a patient's behavior coincides with recommended medical treatment or prescription (Sackett & Haynes, 1976). Estimates of patient non-compliance rates suggest that it is a serious problem in current health care delivery. Davis (1966) reports the incidence of patient non-compliance to range from 15 to 93%. Sackett (1976) cites 54% as the average rate of compliance with different long-term medication regimens for different illnesses in different settings. In a study of out-patients in a general practice setting, Stimson (1974) found non-compliance rates to range from 19 to 72%. The problem appears to be widespread, irrespective of type of illness (Besch, Gold, McDermott, & Richardson, 1983).

Adolescents, in particular, have become stereotyped as noncompliant patients. Because of this commonly held expectation, adolescents are, in some cases, treated using surgical procedures or injections, instead

of prescribing oral medications to be self-administered (Litt & Cuskey, 1980). Research evidence to support actual differences in compliance rates among renal transplant patients, found that the majority of noncompliant patients were adolescents. Similarly, Smith (1979) has found lower compliance rates for adolescent patients. Litt, Cuskey, and Miller (cited in Litt & Cuskey, 1980), however, did not find lower compliance rates in adolescent patients. One reason for contradictory findings may be the variety of ways in which patient compliance has been measured.

Measurement of Compliance

Patient compliance has been measured or estimated using a variety of direct and indirect methods. Direct methods involve the analysis of body fluids for the presence of prescribed medications. While this appears to be the most objective measure of compliance, variability is introduced due to individual differences in drug metabolism, and interactions with other drugs or foods. Such methods are also often not the most feasible due to the time, inconvenience, and expense of such procedures as venipunctures and the subsequent laboratory analyses.

Indirect measures of patient compliance have included such things as checking prescription filling, doing pill counts, obtaining physicians' estimates of compliance, evaluating therapeutic outcomes, interviewing patients regarding compliance, and monitoring appointment keeping. Basch, et al., (1983) have considered the validity of various measures of patient compliance specifically in cancer patient populations. There appears to be widespread evidence that physicians'

assessments of compliance are inaccurate (Caron & Roth, 1968; Davis, 1966; McClellan & Cowan, 1970; Moulding, Onstad & Sbarbaro, 1970). In a review of the literature, Balckwell (1973) notes that physicians fail to detect compliance problems on better than a chance basis and compliance tends to be overestimated. Taylor, et al., (1977) have demonstrated the limitations of judging compliance by therapeutic outcome, due to individual differences in patient recovery. Prescription filling and pill counts prove to be weak indicators of whether the patient has actually taken the prescribed medication. Discrepancies have been found between these measures and physiological indicators (Bergman & Werner, 1963; Roth, Caron & Hsi, 1972). Patient reports of compliance, using both questionnaires and skilled interview techniques have been shown to yield inaccurate results when verified by physiological measures (Grace, MacDonald & Davis, 1977; Greenwald, Becker & Nevitt, 1978; Kardinal & Cupper, 1977; Mettlin & Murphy, 1980). These studies indicate that patient reports of noncompliance are generally valid, but that reports of compliance are often overestimated.

In contrast to other indirect measures, patient appointment keeping may be a variable means for measuring compliance (Greenwald, Becker & Nevitt, 1978; Mettlin, Reese & Murphy, 1980). This is a particularly appropriate measure when treatments are administered at the time of appointment, as is often the case with cancer treatment. Basch, et al., (1983) conclude that measuring appointments kept by patients has potential merit for determining compliance among cancer populations.

Variables Related to Compliance

Thus far, the factors influencing compliance have been studied almost exclusively in adult populations. If it is the case, however, that adolescents are less compliant than other age groups, issues of specific importance to this age group certainly warrant study. In a review of the literature, Litt and Cuskey (1980) have called for an investigation of the influence of adolescent's level of psychosocial development on patient compliance.

Litt, Cuskey and Rosenberg (1982) have examined the importance of two adolescent issues on patient compliance. Self-image and autonomy were assessed in adolescents with juvenile rheumatoid arthritis being managed with salicylate therapy. Adolescents perceiving themselves as autonomous on Eysenk's (1975) Autonomy Scale were more compliant with salicylate therapy. Compliant patients also had higher mean scores on the Piers-Harris (1969) Self-Concept Scale.

A number of studies have examined the relationship between locus of control and patient compliance in adult samples. In a review of the literature, Strickland (1978) concludes that the bulk of the literature supports the expected theoretical assumption that individuals with an internal locus of control are more likely to assume responsibility for their health. This appears to be the case in healthy populations engaging in preventive health practices (Dabbs & Kirscht, 1971; Sonstroem & Walker, 1973; Balch & Ross, 1975; Wallston, Wallston, Kaplan & Maides, 1976, Lundy, 1972), as well as in chronically ill populations (Lewis, Morisky & Flynn, 1978; Levin & Schultz, 1980; Battle & Halliburton, 1979). Similar results have also been found

in a sample of healthy, high-school students engaging in preventative health practices (Williams, 1972).

While no studies to date have looked directly at the relationship between patient compliance and the adolescent task of identity formation, such a relationship is suggested by the fact that each of these variables has been consistently related to the locus of control construct.

Chapter III

STATEMENT OF THE PROBLEM

Adolescence is perhaps the most difficult time of life to be called upon to deal with a serious illness, such as cancer. A number of writers have speculated about the possible detrimental effects of experiencing such an illness on the normal course of adolescent development. There has been as yet, however, no systematic investigation of the effects of serious illness on the major adolescent developmental task of identity formation. Such an investigation is called for, comparing adolescents with cancer to healthy adolescents matched for age, sex, race, socioeconomic status and college attendance. The following is hypothesized:

- I: Healthy adolescents will achieve higher levels of identity formation than adolescents with cancer matched on relevant variables, in the content areas of career, marriage, and children. In the content area of religion, it is predicted that there will be no differences, or that adolescents with cancer may achieve higher levels of identity formation.

Certain groups of chronically ill patients have been found to hold a more external locus of control than healthy individuals. This

relationship may be tested in this study of adolescent oncology patients. The hypothesis is as follows:

II: Healthy adolescents will have a more internal and less external locus of control than adolescents with cancer matched on relevant variables.

Investigators have noted a relationship between identity status and locus of control in healthy subjects. This relationship can be examined in healthy adolescent subjects, as well as adolescent oncology patients. The following is hypothesized:

III: In healthy subjects, higher identity status will be associated with a higher internal and lower external locus of control when relevant variables of age, sex, race and socioeconomic status are controlled. For ill subjects the investigation of the relationship between identity status and locus of control will be considered exploratory.

Finally, adolescents have often been regarded as a noncompliant patient population. Compliance has been related to a perception of an internal locus of control. The relationship between compliance and identity status has not yet been directly tested. The relationships between patient compliance and identity formation and locus of control may be examined in this adolescent oncology sample. The hypothesis is as follows:

IV: Patient compliance will be associated with higher levels of identity formation, perception of internal

control and control by powerful others, and a lower level of perception of control by chance.

Chapter IV

METHODOLOGY

Subjects

A sample of cancer patients included 42 adolescents and young adults being treated at Columbus Children's Hospital. Children's Hospital draws patients from urban and rural areas in central and southern Ohio. Ninety-three percent of patients asked agreed to participate in the study. The subjects ranged in age from 14 to 22, with a mean age of 17.5. The sample was composed of 23 females and 19 males. Socioeconomic status was assessed by asking subjects to indicate parents' occupations which were then categorized as white collar or blue collar jobs according to the revised Duncan Scale (Mueller & Toby, 1981). Fifty percent of the sample were children of white collar workers and 50% were children of blue collar workers. Seven percent of the sample was black and 93% was white. Thirty of the subjects were high school students, eight were college students and four had attended college and were working.

The diagnoses of the patients were as follows. Twelve patients had leukemia, a malignancy of the blood forming cells which has a 50% disease free survival rate. Ten patients had lymphomas or cancer of the lymph nodes in which there is about an 80% disease free survival rate. Five patients had sarcomas or bone cancers with approximately a 50% disease free survival rate. Three patients had a Wilm's or kidney tumor where there is an 80% disease free survival

rate and seven patients had other tumors. This sample is fairly representative of the pediatric cancer population in the United States (Altman & Schwartz, 1983). The average age at diagnosis for patients was 13 and the average length of illness was 5.7 years. Patients had spent an average of 46 days in the hospital for cancer treatment.

Each cancer patient was matched with a healthy control subject on the variables of age, sex, race, socioeconomic status, and college attendance. Control subjects were questioned regarding their health history and only those who had never experienced any serious or chronic illnesses were included. The control sample was made up of students from The Ohio State University, and from two high schools, one in a small city in southern Ohio, and one in a rural community in central Ohio. Thus, this sample reflected the same mean age and proportions of males and females, racial groups, and socioeconomic backgrounds as the sample of cancer patients.

Instruments

Ego Identity Interview. The Ego Identity Interview, developed by Waterman and Archer (1982) is an extension and elaboration of Marcia's (1966) original identity status interview. This structured interview is designed to assess whether the subject has undergone periods of questioning and reflection (crisis) and subsequently formed commitments in seven possible content areas. Four content areas, which were most appropriate to the age group to be interviewed (Personal communication, Waterman, 1983), were assessed in the present

study. These were: Career, Marriage and role of Spouse, Children and Parental Role, and Religious Beliefs. Separate interview formats were used for high school and post-high school individuals, with slightly different wording appropriate to the subject (see Appendices A and B). In scoring the identity interviews, an identity status determination is made for each content area individually and then an overall identity status is determined.

Ego Identity Incomplete Sentence Blank (EI-ISB). The Ego Identity Incomplete Sentence Blank was developed by Marcia (1966). It consists of 23 sentence stems concerning behaviors that Erikson has related to identity achievement (see Appendix C). Sentences are completed by the subject and then scored a 1, 2, or 3 based on the degree of identity achievement demonstrated. An Ego Identity Score represents the sum of the ratings for the 23 sentences. The EI-ISB has been used by Marcia (1966) and by Adams, Shea and Fitch (1978) as a primary validation tool with other ego identity measures. It was used in the present study to increase the validity of identity status determination.

Multidimensional Locus of Control Scales. The Multidimensional Locus of Control Scales were developed by Hanna Levenson (1981). They consist of three eight-item scales tapping perceptions of internal control, control by powerful others, and chance. Each item is rated by the subject on a seven-point Likert scale ranging from strongly agree to strongly disagree (see Appendix D). In a review of the literature, Levenson (1981) cites numerous studies which support the validity and reliability of these scales. The scales are not correlated with measures of social desirability.

Multidimensional Health Locus of Control Scales. The Multidimensional Health Locus of Control Scales were developed by Wallston, Wallston, and DeVillis (1978) following the approach used by Levenson in measuring general locus of control. Items tap perception of control specifically regarding health related issues. As with Levenson's measure, there is an Internal Scale, a Powerful Others Scale, and a Chance Scale, each of which contain six items (see Appendix E). These scales have been used in numerous studies and normative data is available (Wallston & Wallston, 1981).

Appointment Keeping. Patient compliance was assessed by tabulating the numbers of clinic appointments kept and broken over a three year period. All patients had had a minimum of ten appointments scheduled during this time period. The proportion of scheduled clinic appointments broken was calculated. Basch, et al., (1983) has found this to be a viable measure of patient compliance, particularly for cancer patients, when treatments are administered during clinic visits.

Procedure

Oncology patients were asked to participate in the study in hospital clinics while waiting for regularly scheduled appointments. They were given a letter to read explaining the study and its purpose (see Appendix F) and asked for their informed consent (see Appendix G). Informed consent was also obtained from parents when participants were under the age of eighteen.

Healthy subjects were recruited through two public high schools and The Ohio State University. Students who matched ill adolescents

on age, sex, race and socioeconomic status were asked to participate. The study and its purpose were explained to potential subjects, as well as the fact that they were participating as part of a healthy control group (see letter, Appendix H). Informed signed consent was obtained from all subjects and from parents when subjects were under the age of eighteen (see Appendix I).

Subjects were interviewed and completed questionnaires in the hospital clinic or school. Interviews were conducted by a trained doctoral student in clinical child psychology. Interviews were tape recorded to allow scoring by two judges for purposes of inter-rater reliability.

Scoring of identity protocols. Taped identity status interviews and ego identity incomplete sentence blanks were scored by two psychology graduate students according to the guidelines of Marcia's and Waterman's scoring manuals, respectively. Blind scoring was not possible due to the fact that cancer patients invariably mentioned their illness during interviews and in completing sentences. The second scorer, however, was unaware of the hypotheses of the current study. Inter-rater reliability between scores was established: Identity Status Interview - 89% agreement on identity status determination; Ego Identity - Incomplete Sentence Blank - $r(28) = .96$, $p < .0001$.

Statistical Analysis

In order to test the first hypothesis, chi-square analyses were performed on the identity status variables, comparing healthy and ill

adolescent groups, matched on relevant variables. Also, a matched pairs-T-test procedure was used to compare the Ego Identity Scores of healthy and ill adolescents.

The second hypothesis was tested by performing matched pairs T-tests on the mean locus of control scale scores for healthy vs. ill adolescent samples.

In order to test the third hypothesis, analysis of covariance were performed using identity status as an independent variable and each locus of control scale as a dependent variable. Each analysis included age, sex, race, and socioeconomic status as covariates. Multiple regression analyses were used to examine the relationship between Ego Identity Scores and each of the six locus of control scales. Again, relevant variables were controlled for in each analysis.

Finally, the last hypothesis was tested by performing an analysis of covariance using identity status as the independent variable and proportion of broken appointments as the dependent variable. The relationships between Ego Identity scores and locus of control scores and the compliance measure were considered using multiple regression analyses. All analyses were controlled for the relevant variables of age, sex, race, and socioeconomic status.

Chapter V

RESULTS

Identity Measures

Several initial analyses were performed to gain information about the properties of the identity variables used in this study, namely the Identity Status (IS) determinations obtained through Waterman's Identity Status Interview and the Ego Identity Scores (EIS) obtained from Erikson's Ego Identity Incomplete Sentence Blank. Correlations performed between these identity variables and demographic characteristics of the subjects demonstrated that only age was correlated with Identity Status level (see Table 1). Ego Identity Scores were not correlated with age. No sex, race, or socioeconomic differences were found on either measure.

Table 2 illustrates the correlations between Identity Status ratings in the four content areas of Waterman's interview, as well as an overall Identity Status rating and the Ego Identity Score. Correlations of various magnitudes were obtained between all of the identity variables, with the exception of the Identity Status ratings in the content area of religion, which was not significantly correlated with Identity Status ratings in the area of career, or with the Ego Identity Score.

An analysis of covariance was performed to examine the relationship between the various Identity Status determinations obtained through

Table 1
Correlations Between Identity Variables and Demographic Variables

	Identity Status Level	Ego Identity Score
Age	.21*	.10
Sex	-.11	-.06
Race	.06	-.15
Socioeconomic Status	-.07	.08

*p < .05

Table 2
Intercorrelations Between Identity Variables

	Identity Level- Career	Identity Level- Marriage	Identity Level- Children	Identity Level- Religion	Ego Identity Score
Overall Identity Level	.55****	.78****	.81****	.45****	.49****
Identity Level- Career		.38***	.35***	.15	.40***
Identity Level- Marriage			.68****	.36***	.33**
Identity Level- Children				.27**	.39***
Identity Level- Religion					.13

****p < .0001

***p < .001

**p < .01

interview and the Ego Identity Scores on the incomplete sentence blank. The results, shown in Table 3, demonstrate that a significant relationship does exist with the identity achieved group obtaining the highest mean Ego Identity Score (52.8), followed by the identity foreclosures (47.7), the moratoriums (46.4), and finally, the identity diffusions (42.7). A student-Newman-Keuls test performed on these means demonstrates that the identity achieved group scored significantly higher than all other groups and the identity diffused group scored significantly lower than all other groups, while the foreclosed and moratorium groups did not differ significantly from one another. All significant relationships were at the .05 level of significance. These expected findings support the validity of the identity status determinations.

Following these initial analyses, chi-square tests and a T-test were performed on Identity Status determinations and Ego Identity Scores, respectively, to see whether any differences existed between the healthy and ill samples. Such analyses were appropriate since healthy and ill subjects had been matched on relevant variables, namely age, sex, race, and socioeconomic status. A chi-square analysis on overall Identity Status determinations demonstrated a significant difference between healthy and ill samples. More healthy subjects were rated in the achieved and moratorium categories, while more ill subjects were rated in the foreclosed and diffusion categories. Actual and expected cell frequencies are shown in Table 4. Similar results were obtained when separate analyses were done on the Identity Status

Table 3
ANCOVA of Ego Identity Scores by Identity Status
with Covariates of Age, Sex, Race, and SES

Source	df	SS	MS	F
Identity Status	7	1108.11	158.30	5.27****
Error	75	2254.40		
Total	82	3362.51		

****p < .001

	<u>Mean</u>
Achievement	52.8
Moratorium	46.4
Foreclosure	47.7
Diffusion	42.7

ratings in the individual content areas of career (see Table 5), marriage (see Table 6), and children (see Table 7). In the content area of religion, no significant differences were found between healthy and ill groups (see Table 8).

A matched pairs T-test on Ego Identity scores showed healthy adolescents to score significantly higher (51.5) than ill adolescents (43.5; see Table 9).

Multidimensional Locus of Control Scales

As with the identity variables, some initial analyses were performed to gain information about the properties of the locus of control scales. All six scales were used in these analyses, three of which tap general locus of control and three tap locus of control in specifically health-related situations. In each content area, there is an internal scale and two external scales, measuring perception of control by powerful others and chance.

Correlations performed between subjects' LOC scores and demographic variables showed age to be negatively correlated with both the general and health-related Powerful Others scales. Thus perception of control by powerful others decreased with age. No sex or race differences were found in this sample on the LOC scales. Socioeconomic status was related only to the health-specific Chance scale. A belief in control by chance in health-related situations was greater for lower socioeconomic groups (see Table 10).

Table 11 illustrates the intercorrelations between the six locus of control scales. The Internal locus of control scale was not

Table 4
Overall Identity Status
Healthy vs. Ill Subjects

	Diffusion	Foreclosure	Moratorium	Achievement
Numbers of Healthy Ss	3	11	11	17
Numbers of Ill Ss	17	18	4	3
Expected Numbers	10	14.5	7.5	10

df = 3

$\chi^2 = 24.56^{****}$

****p < .0001

Table 5
Identity Status - Career
Healthy vs. Ill Subjects

	Diffusion	Foreclosure	Moratorium	Achievement
Numbers of Healthy Ss	6	8	13	15
Numbers of Ill Ss	22	5	7	8
Expected Numbers	14	6.5	10	11.5

df = 3

$\chi^2 = 13.77^{**}$

$^{**}p < .01$

Table 6
Identity Status - Marriage
Healthy vs. Ill Subjects

	Diffusion	Foreclosure	Moratorium	Achievement
Numbers of Healthy Ss	5	11	8	18
Numbers of Ill Ss	14	18	2	8
Expected Numbers	9.5	14.5	5	13

df = 3

$\chi^2 = 13.40^{**}$

$^{**}p < .01$

Table 7
Identity Status - Children
Healthy vs. Ill Subjects

	Diffusion	Foreclosure	Moratorium	Achievement
Numbers of Healthy Ss	5	11	11	15
Numbers of Ill Ss	18	18	2	4
Expected Numbers	11.5	14.5	6.5	9.5

df = 3

$\chi^2 = 21.64$ ****

****p < .001

Table 8
Identity Status - Religion
Healthy vs. Ill Subjects

	Diffusion	Foreclosure	Moratorium	Achievement
Numbers of Healthy Ss	11	16	4	11
Numbers of Ill Ss	13	17	3	9
Expected Numbers	12	16.5	3.5	10

df = 3

$\chi^2 = .54$

Table 9
Ego Identity Scores
Matched Pairs T-test
Healthy vs. Ill Subjects

	n	Ego Identity Score Means
Healthy Ss	42	51.5
Ill Ss	42	43.5

T = 7.29****

****p < .001

Table 10
Correlations Between Locus of Control
and Demographic Variables

	<u>General Locus of Control</u>			<u>Health Locus of Control</u>		
	Internal	Powerful Others	Chance	Internal	Powerful Others	Chance
Age	.15	-.36**	-.18	.06	-.26**	-.16
Sex	-.11	-.18	-.11	-.06	-.03	-.19
Race	-.16	.11	.09	-.12	.13	.03
SES	.15	-.04	-.17	-.05	-.07	-.24*

**p < .01

*p < .05

Table 11
Intercorrelations Between Locus of Control Scales

	<u>General Locus of Control</u>			<u>Health Locus of Control</u>		
	Internal	Powerful Others	Chance	Internal	Powerful Others	Chance
<u>General LOC</u>						
Internal	-	.04	-.04	.55****	-.02	-.15
Powerful Others		-	.48****	-.02	.32**	.37***
Chance			-	.07	.19*	.57****
<u>Health LOC</u>						
Internal				-	-.17	-.10
Powerful Others					-	.41****
Chance						-

****p < .0001

***p < .001

**p < .01

*p < .10

correlated to either external scale, supporting Levenson's assertion that internality and externality should be measured as separate concepts rather than as opposite extremes of one dimension. The two external scales, Powerful Others and Chance, were correlated with one another. Also each general LOC scale was correlated with its respective health-related LOC scale, e.g., general internal locus of control was correlated with health-related internal locus of control.

Matched pairs T-tests between healthy and ill groups were performed on each locus of control scale. Significant differences were found on two of these scales (see Table 12). Ill subjects demonstrated a greater belief in control by powerful others in health-related situations. In general situations, however, the opposite was the case. Ill subjects indicated a lower perception of control by powerful others.

The Relationship Between Identity Formation and Locus of Control

Since significant differences had been found between healthy and ill samples on identity variables and locus of control scales, analyses of the relationship between identity and locus of control were performed separately for these two groups.

The hypothesis that higher identity status would be associated with a more internal and less external locus of control received only partial support. Analyses of covariance were performed on each of the six locus of control scales. In each analysis, identity status was the independent variable, and the covariates of age, sex, race, and socioeconomic status were included. No significant relationships were found either with the ill sample or the healthy sample.

Table 12
Locus of Control Scores
Matched Pairs T-tests
Healthy vs. I11 Subjects

	<u>General Locus of Control</u>			<u>Health Locus of Control</u>		
	Internal	Powerful Others	Chance	Internal	Powerful Others	Chance
Healthy Ss (42)	11.6	-1.6	-4.0	6.6	-2.0	-3.5
I11 Ss (42)	11.0	-5.5	-4.8	5.8	1.0	-3.3
T	.37	2.12*	.40	.56	2.27*	.10

*p < .05

Multiple regression analyses were performed on each of the six locus of control scales using Ego Identity Scores as the independent variable. Again, covariates of age, race, sex, and socioeconomic status were included. Some significant relationships were found in these analyses.

In the healthy sample, the Ego Identity Score was a significant determinant of belief in control by powerful others, accounting for 80% of the variance (see Table 13). A higher Ego Identity Score was associated with a lowered perception of control by powerful others. Also, in the healthy sample, the Ego Identity Score was significantly related to a lowered belief in control by chance. Eight percent of the variance on the Chance scale was accounted for by this relationship (see Table 14). Finally, a higher Ego Identity Score was significantly related to a lower score on the health-related Powerful Others scale, accounting for 8% of its unique variance when other relevant variables were controlled (see Table 15).

In the ill sample, the Ego Identity Score was significantly related only to the general Internal scale. A higher Ego Identity Score was associated with a greater belief in internal control. Eleven percent of the variance of this scale was unique to the identity variable (see Table 16).

Identity, Locus of Control, and Patient Compliance

The final hypothesis of the study concerned whether identity status or locus of control in adolescent patients would be related to compliance as measured by appointment keeping.

Table 13

Multiple Regression Analysis on Healthy Sample
 Independent Variable: Ego Identity Score
 Dependent Variable: LOC - Powerful Others Scale
 Covariates: Age, Sex, Race, SES

Source	df	SS	MS	R ²
Ego Identity Score	5	785.87	157.17	.08*
Error	36	1610.04	44.72	
Total	41	2395.90		

*p < .05

Table 14

Multiple Regression Analysis on Healthy Sample
 Independent Variable: Ego Identity Score
 Dependent Variable: LOC - Chance Scale
 Covariates: Age, Sex, Race, SES

Source	df	SS	MS	R ²
Ego Identity Score	5	782.20	156.44	.08*
Error	36	2334.77	64.85	
Total	41	3116.98		

*p < .05

Table 15

Multiple Regression Analysis on Healthy Sample
 Independent Variable: Ego Identity Score
 Dependent Variable: Health LOC -Powerful Others Scale
 Covariates: Age, Sex, Race, SES

Source	df	SS	MS	R ²
Ego Identity Score	5	343.88	68.78	.08*
Error	36	1298.02	36.06	
Total	41	1641.90		

p < .05

Table 16

Multiple Regression Analysis on I11 Sample
 Independent Variable: Ego Identity Score
 Dependent Variable: LOC - Internal Scale
 Covariates: Age, Sex, Race, SES

Source	df	SS	MS	R ²
Ego Identity Status	5	338.77	67.75	.11*
Error	35	1625.13	46.43	
Total	40	1963.90		

*p < .05

An analysis of covariance performed to test whether a relationship existed between identity status and proportion of broken appointments was not significant. Similarly, a multiple regression analysis testing the relationship between patients' Ego Identity Scores and appointment keeping records was not significant.

Multiple regression analyses were performed using each of the six locus of control scales as an independent variable and appointment keeping record as the dependent variable. Controlling for the variables of age, sex, race, and socioeconomic status, one of these relationships was found to be significant (see Table 17). A greater perception of control by powerful others in health-related situations was associated with a better appointment keeping record or less broken appointments. The health LOC-Powerful Others scale accounted for 17% of the variance in appointment keeping records.

Table 17

Multiple Regression Analysis
 Independent Variable: Health LOC - Powerful Others Scale
 Dependent Variable: Proportion of Broken Appointments
 Covariates: Age, Sex, Race, SES

Source	df	SS	MS	R ²
Health LOC - Powerful Others	5	222.71	44.54	.17*
Error	31	754.58	24.34	
Total	36	977.30		

*p < .05

Chapter VI

DISCUSSION

The present investigation had several purposes. One main goal was to assess the psychosocial development of adolescents with cancer as compared to that of healthy peers, in the specific areas of identity formation and locus of control. A second purpose was to consider the relationships between identity status, locus of control and the important behavior of patient compliance.

Before evaluating the support for the hypotheses of this study, the validity of the measures used to operationalize various constructs will be considered.

Identity formation was operationalized through the use of two measures - Waterman and Archer's (1982) Identity Status Interview and Marcia's (1966) Ego Identity Incomplete Sentence Blank. The measures proved to be reliable in terms of interpretation and scoring in that a high degree inter-rater reliability was obtained with each measure. The interview schedule most commonly seen in the literature to date has been Marcia's original identity interview. This interview is limited in terms of content areas (only occupation and ideology are included) and has been criticized for its vagueness (Cote & Levine, 1982). Waterman's elaborated interview is more applicable to female samples by the inclusion of family role content areas, and is also much more structured and specific, both in terms of administration and

scoring. While new to the literature, it appears to be a substantial improvement over the original measure.

To assess the validity of the measures, correlations with demographic variables were performed, as well as intercorrelations among the measures themselves. In terms of demographics, an expected age trend was seen in identity status ratings. The Ego Identity Incomplete Sentence Blank (EI-ISB) was not correlated with age. One explanation for this may be that youths committed through foreclosure tend to score high on this measure, as well as youths committed through identity achievement. Thus, the measure does not always differentiate this developmentally lower committed identity status, precluding a significant age trend from appearing. Sex differences were not found on either measure. Sex differences have been found in the past using Marcia's original interview schedule and the lack of such differences using Waterman's schedule may be due to the use of content areas which are more representative for both males and females. Racial differences were not found, however, the ratio of black to white subjects in this sample was extremely small (6:78). Consistent with previous studies (Marcia, 1976) no significant socioeconomic differences were found on the identity variables. Since all of the post-high school subjects in this study had attended at least some college, it was not possible to assess differences between college and non-college attending youths.

Intercorrelations between identity variables were as expected. Ratings of identity status in various content areas of the interview

were all correlated with the exception of the relationship between Career and Religion. Ego identity scores for each identity status group varied as expected, with the identity achieved group scoring highest and the diffused group scoring lowest. These findings, similar to those of Marcia (1966), support the validity of Waterman's new interview measure.

The first hypothesis of this study predicted that adolescents with cancer would not have attained levels of identity achievement as high as those of healthy adolescents matched for age, sex, race, and socioeconomic status. This hypothesis was supported by the data. Significant differences were found on the EI-ISB, on overall identity status ratings and on specific identity status ratings in the areas of career, marriage, and children. While these findings in no way suggest that adolescents with cancer are maladjusted, they do point to a difficulty these youths may be having in exploring values, formulating goals, and making future commitments. Interview protocols suggest that this is likely due to overriding concerns these patients have about their illness and future prognosis. In addition to uncertainty about the future, many of these adolescents were restricted from normal socialization experiences with peers due to hospitalization and cancer treatments. Erikson (1963) has noted that peer socialization processes are important in identity formation. The findings of this study are consistent with those of Orr, et al., (1984) who found that adolescents with serious illnesses had difficulty making future plans.

The exception to the finding of significant differences between healthy and ill teenagers was in the content area of relation. One

explanation for this might be that while making commitments in the areas of career and family requires making plans for the future; a commitment in the area of religion is more a decision about one's beliefs and is less dependent on future expectations. In fact, many of the ill adolescents who were identity achieved in the area of religion had experienced a religious "crisis" when they became seriously ill. Thus, these adolescents did not show a delay in identity achievement in this area.

These findings support the theoretical notions that have been frequently discussed in the medical literature (e.g., Rainey, 1982; Marten, 1980; Lourie, 1976), namely that serious illness may impede an individual's progress through normal psychosocial developmental stages. The findings do not imply that adolescents with cancer represent a pathological group, as other researchers have suggested (Easson, 1970; Lowenburg, 1970; Mattson, 1972). Failure to negotiate the important developmental task of identity formation, however, may predispose the group to future adjustment problems. As Coles (1970) has stated: "Ego identity is the central personality structure. . . it is in essence a statement about the past, present, and future." Zabusky and Kymissis (1983) view adolescence, with its accompanying task of identity formation, as the "rallying point or bridge between childhood and adulthood" (p. 100) and consider it, therefore, to be one of the most crucial psychological periods of one's life. Thus, the difficulty adolescents with cancer may have in attaining identity achievement requires serious attention.

In considering the concept of locus of control, new multidimensional scales were used to measure perception of control, and adolescents were assessed both in the areas of general expectations and health-related expectations. The data obtained on the general properties of the scales were in line with those of other researchers (Levenson, 1981; Wallston, Wallston, & DeVillis, 1978). A perception of control by powerful others decreased with age and a belief in control by chance was greater in lower socioeconomic groups. As expected, the two external scales were correlated with one another, neither correlated with the internal scale, and each health-related scale was correlated with its respective general scale.

The second hypothesis of the study, that ill adolescents would have a less internal and more external locus of control, was only partially supported by the data. In terms of health locus of control, cancer patients did show a greater belief in external control by powerful others. There was no difference in perception of internal control between healthy and ill adolescents.

It is somewhat difficult to compare these results with those of other studies, since many of them have used older scales to measure locus of control. Kellerman, et al., (1980), using a unidimensional health locus of control scale, found ill adolescents to score more toward the external control end of the scale than healthy adolescents. With a single dimension scale it cannot be determined whether this difference was due to greater externality or less internality of the part of the ill adolescents. The present study would suggest that the significant results had been due more to differences in externality.

DeVillis, DeVillis, Wallston and Wallston (1980) did administer the multidimensional health locus of control scales to adult seizure patients. Consistent with the present study, the greatest difference between more and less severe seizure patients was found on the Powerful Others scale. Significant differences were also found on the Internal and Chance scales with severe seizure patients being more external and less internal. One reason that these additional findings were obtained in the study may be that these adults had had seizure disorders for much longer periods of time than the adolescents in the present study had been ill with cancer. Also, seizures constitute a disorder that is even less predictable than is cancer. In any case, the present study suggests that in comparing adolescents with cancer to healthy adolescents, differences exist only in a perception of control by powerful others.

Moving to general locus of control, the results of this study are quite interesting. Contrary to expectation, ill adolescents' more external locus of control in health-related situations did not generalize to non-health related situations. The opposite, in fact, was the case. Ill adolescents perceived even less control by powerful others in general situations than did healthy adolescents. Such a finding has not been previously reported in the literature. However, no other studies have compared general and health-specific locus of control in an adolescent sample. DeVillis, et al., (1980) did administer two of the general locus of control scales (Internal and Chance) to their sample of seizure patients. Unfortunately, they did not

administer the general Powerful Others scale for the sake of brevity. The findings using the general Internal and Chance scales were similar to those obtained with the respective health-related scales. That is, patients with more severe disorders were generally less internal and perceived greater control by chance than patients with less severe disorders. Again, differences in findings between this and the present study may be due to different sample characteristics. One explanation for the lowered belief in control by powerful others on the part of the ill adolescents of this sample may be a form of rebellion. Since teenagers with cancer are forced to rely to a large extent on authority figures in the health care setting, they may compensate by resisting this kind of control in other settings. In any event, these unique findings may be regarded as preliminary and will require replication using other ill adolescent samples.

In examining the relationship between identity and locus of control, it was decided to perform analyses separately for healthy and ill groups due to the differences found on these constructs individually. This study hypothesized that higher identity status would be associated with a more internal and less external locus of control.

Using the identity status ratings obtained through the identity interview, no significant relationships were found with locus of control. This is not in line with the findings of Adams and Shea (1978) who showed committed youths (achieved and foreclosed) to score higher on internality and lower on the chance scale than uncommitted youths (moratorium and diffusion).

Some significant relationships were found between identity achievement ratings on the EI-ISB and locus of control. Examining the relationships in the healthy group first, greater identity achievement was associated with a lowered perception of external control on both the Powerful Others and Chance scales. In the ill group, greater identity achievement was associated with a greater perception of internal control. One reason that the EI-ISB may have shown significant relationships with locus of control while the identity statuses did not is that both groups of committed youths tend to score high on internal control and low on external control. Similarly, committed youths, whether identity achieved or foreclosed, score higher on the EI-ISB. Also, fewer significant relationships may have been found in the present study due to the very small sample size of 42 when healthy and ill groups were divided, as compared to Adams and Shea's sample size of 294.

Finally, another possible explanation for the failure to find more significant relationships between identity status and locus of control has to do with the age of the sample tested. If it is true that a change in perception of control follows identity achievement, then the adolescents in this study may be just achieving higher levels of identity formation but may not yet have developed the concomitant changes in perception of control. The subjects in Adams and Shea's study were all of college age, allowing relationships between identity and locus of control a longer time to develop and stabilize.

Finally, this study sought to determine whether there was any relationship between the noncompliant behavior often observed among teenage patients and the variables of identity status and locus of control. It was thought that adolescents as a group may be less cooperative than other age groups of patients because of the identity and autonomy struggles associated with this period. In this sample, however, no relationships were found between the identity variables and the compliance measure. It would appear then that adolescent compliance problems may not be systematically related to level of identity status.

In examining the relationship between locus of control and patient compliance, one significant relationship was found. As expected, patients with a stronger perception of control by powerful others in health-related situations had better records of appointment keeping. No differences were found on the Internal or Chance scales. Results of previous studies addressing this issue are difficult to interpret because many of them used unidimensional scales of locus of control which combined perception of control by powerful others and chance at the external end of the continuum. A previous assumption that patient compliance is related to greater internality was not supported by this study.

The lack of significant findings in the relationships between the developmental variables considered and patient compliance may be due to a small sample size or may be because the proportion of variance in patient compliance accounted for by these variables is not great.

In a recent review of the literature, DiMatteo and DiNicola (1982) have found that patient characteristics, in general, do only explain a small proportion of the variance in compliance rates. They are looking more to the relationship between patients and health care professionals to explain variability in compliance. They postulate that such things as effective communication, patient rapport, and support may be more determinant of patient cooperation. If such is the case, it may be appropriate to begin looking at the ways in which health care professional interact with teenage patients in an attempt to explain noncompliance problems.

In summary, while the hypothesized relationships between identity, locus of control, and patient compliance were not always demonstrated to be as predicted, the most important findings of this study were the differences between healthy and ill adolescents on psychosocial developmental variables. The adolescents with cancer clearly lagged behind healthy teenagers on the important developmental task of identity formation. While it is not the contention of this writer that these youths are "maladjusted," it does appear that concerns about illness may be hampering their progress in the resolution of important adolescent issues. The feelings of the adolescent with cancer are typified by this statement a 17 year old girl made on the EI-ISB: For me success would be. . . "hard because I'm not sure what I want to do. I haven't planned anything because of my illness."

In light of these findings, it would seem very important that adolescents with cancer receive appropriate psychological attention

in an effort to prevent developmental difficulties from becoming larger problems of adjustment. Rachman (1975) and Zabusky and Kymissis (1983) have suggested the use of group therapy with adolescents as a tool to strengthen ego identity. Such an intervention may be helpful to adolescent cancer patients and warrants investigation.

REFERENCES

- Adams, C. & Shea, J. (1979). The relationship between identity status, locus of control and ego development. Journal of Youth and Adolescence, 8, 81-89.
- Adams, G., Shea, J., & Fitch, S. (1979). Toward the development of an objective assessment of ego-identity status. Journal of Youth and Adolescence, 8, 223-237.
- Balch, P., & Ross, A. (1975). Predicting success in weight reduction as a function of locus of control: A unidimensional and multidimensional approach. Journal of Consulting and Clinical Psychology, 43, 119.
- Basch, C., Gold, R., McDermott, R., & Richardson, C. (1983). Confounding variables in the measurement of cancer patient compliance. Career Nursing, 285-293.
- Battle, E., & Halliburton, A. (1979). Self-medication among psychiatric inpatients and adherence after discharge. Unpublished manuscript, Veteran's Administration Medical Center, Murfreesboro, Tennessee.
- Becker, R. (1979). Adolescent in the hospital: Psychological and cognitive aspects of chronic illness, a developmental perspective. Israeli Annals of Psychiatry, 17, 328-352.
- Becker, R. (1980). Illness and hospitalization in adolescence: A developmental perspective. Pediatrician, 9, 242-260.
- Bergman, A., & Werner, R. (1963). Failure of children to receive penicillin by mouth. New England Journal of Medicine, 268, 11314-11338.
- Blackwell, B. (1973). Drug therapy: Patient compliance. New England Journal of Medicine, 289, 249-252.
- Bourne, E. (1978). The state of research on ego identity: A review and appraisal. Journal of Youth and Adolescence, 7, 223-251; 371-392.
- Caron, H. & Roth, H. (1968). Patients' cooperation with a medical regimen. Journal of the American Medical Association, 203, 120-124.

- Coles, R (1970). Erik Erikson: The growth of his work. Boston: Little-Brown.
- Constantinople, A. (1979). An Eriksonian measure of personal development in college students. Developmental Psychology, 1, 357-372.
- Cote, J., & Levine, C. (1982). Marcia and Erikson: The relationships among identity status, neuroticism, dogmatism, and purpose in life. Journal of Youth and Adolescence, 1, 43-53.
- Coupey, S., & Cohen, M. (1981). The adolescent with chronic disease. Pediatrician, 10, 183-190.
- Cowen, E., Huser, J., Beach, D., & Rappaport, J. (1970). Parental perceptions of young children and their relation to indexes of adjustment. Journal of Consulting and Clinical Psychology, 34, 97-103.
- Cross, J., & Allen, J. (1970). Ego-identity status, adjustment and academic achievement. Journal of Consulting and Clinical Psychology, 34, 288.
- Dabbs, J., & Kirscht, J. (1971). Internal control and taking influenza shots. Psychological Reports, 28, 959-962.
- Davis, M. (1966). Variations in patients' compliance with doctors' orders. Journal of Medical Education, 41, 1037-1048.
- DeVillis, R., DeVillis, B., Wallston, B., & Wallston, K. (1980). Epilepsy and learned helplessness. Basic and Applied Social Psychology, 1, 241-253.
- DiMatteo, R., & DiNicola, D. (1982). Achieving patient compliance: The psychology of the medical practitioner's role. New York: Pergamon Press.
- Easson, W. (1970). The dying child. Springfield, IL: Thomas.
- Erikson, E. (1959). Identity and the life cycle. Psychological Issues, 1, 1-171.
- Erikson, E. (1963). Childhood and society. New York: Norton.
- Erikson, E. (1968). Identity: Youth and crisis. New York: Norton.
- Eysenk, H. (1975). Know your own personality. New York: Penguin Books.

- Freud, A. (1976). The hospitalized adolescent (foreword). In Hofmann, Becker, & Gabriel (Eds.). New York: Free Press.
- Garcia, C., & Levenson, H. (1975). Differences between black's and white's expectations of control by chance and powerful others. Psychological Reports, 37, 563-566.
- Gardener, H. (1982). Developmental Psychology. Boston: Little, Brown, & Co.
- Gogan, J., Koocher, G., Fine, W., Foster, D., & O'Malley, J. (1979). Pediatric cancer survival and marriage: Issues affecting adult adjustment. American Journal of Orthopsychiatry, 49, 423-430.
- Grace, M., MacDonald, R., & Davis, F. (1977). Follow-up care of patients with cancer. Canadian Journal of Public Health, 68, 403-406.
- Greenwald, H., Becker, S., & Nevitt, M. (1978). Delay and noncompliance in cancer detection: A behavioral perspective for health planners. Milbank Memorial Fund Quarterly, 56, 212-231.
- Harper, D. (1978). Personality characteristics of physically impaired adolescents. Journal of Clinical Psychology, 34, 97-103.
- Hartman, H., Kris, E., & Loewenstein, R. (1946). Comments on the formation of psychic structure. Psychoanalytic Study of the Child, 2, 11-38.
- Hauser, S. (1971). Black and white identity formation. New York: Wiley.
- Hofman, A. (1973). The hospitalized adolescent. Pediatric Annals, 2, 49-64.
- Hofman, A. (1975). The impact of illness in adolescence and coping behavior. Acta Paediatrica Scandinavia, 256, 29-38.
- Hofman, A., & Becker, R. (1973). Psychotherapeutic approaches to the physically ill adolescent. International Journal of Child Therapy, 2, 492-511.
- Hofman, A., Becker, R., & Gabriel, H. (1976). The hospitalized adolescent: A guide to managing the ill and injured youth. New York: Free Press.
- Howard, M. (1975). Ego identity status in women, fear of success, and performance in a competitive situation. Unpublished doctoral dissertation, SUNY at B.

- James, W. (1910). Psychology: The briefer course. New York: Holt.
- Kaplan, D., Grobstein, R., & Smith, A. (1976). Predicting the impact of severe illness in families. Health Social Work, 1, 72-81.
- Kardinal, C., & Cupper, H. (1977). Reactions of patients with advanced cancer to their diagnosis and treatment. Military Medicine, 142, 374-376.
- Kellerman, J., Ellenberger, L., Dash, J., Rigler, D., & Zeltzer, L. (1980). Psychological effects of illness in adolescence, 1. Anxiety, self-esteem, and perception of control. Journal of Petiatrics, 97, 126-131.
- Koocher, G., O'Malley, J., Gogan, J., & Foster, D. (1980). Psychological adjustment among pediatric cancer survivors. Journal of Child Psychology and Psychiatry, 21, 163-173.
- Korsch, B., Fine, R., & Negrete, V. (1978). Noncompliance in children with renal transplants. Pediatrics, 61, 872-876.
- LaVoie, J. (1976). Ego identity formation in middle adolescence. Journal of Youth and Adolescence, 5, 371-385.
- Levenson, H. (1972). Distinctions within the concept of internal-external control: Development of a new scale. Proceedings of the 80th Annual Convention of the American Psychological Association, 261-262.
- Levenson, H. (1981). Differentiating among internality, powerful others and chance. In H. Lefcourt (Ed.), Research with the locus of control construct, New York: Academic Press.
- Levin, A., & Schulz, M. (1980). Multidimensional health locus of control and compliance in low and high participation hemodialysis programs. Unpublished master's thesis, University of Wisconsin.
- Levine, A., & Hersh, S. (1982). The psychosocial concomitants of cancer in young patients. In A. Levine (Ed.), Cancer in the young. New York: Masson.
- Lewis, F., Morisky, D., & Flynn, B. (1978). A test of construct validity of health locus of control: Effects of self-reported compliance for hypertensive patients. Health Educational Monographs, 6, 138-148.
- Litt, I., & Cuskey, W. (1980). Compliance with medical regimens during adolescence. Pediatric Clinics of North American, 27, 3-15.

- Litt, I., Cuskey, W., & Rosenberg, A. (1982). Role of self-esteem and autonomy in determining medication compliance among adolescents with juvenile rheumatoid arthritis. Pediatrics, 69, 15-17.
- Loevinger, J. (1976). Ego development. San Francisco: Jossey-Bass.
- Lourie, R. (1976). Psychology of adolescence. In Gallagher, Heald & Garrell (Eds.), Medical care of the adolescent. New York: Appleton-Century-Crofts.
- Lowenberg, J. (1970). The coping behaviors of fatally ill adolescents and their parents. Nursing Forum, 9, 269-287.
- Lundy, J. (1972). Some personality correlates of contraceptive use among unmarried female college students. Journal of Psychology, 80, 9-14.
- Marcia, J. (1964). Determination and construct validity of ego identity status. Unpublished doctoral dissertation, The Ohio State University.
- Marcia, J. (1966). Development and validation of ego identity status. Journal of Personality and Social Psychology, 3, 551-558.
- Marcia, J. (1967). Ego identity status: Relationship to change in self-esteem, general maladjustment and authoritarianism. Journal of Personality, 35, 119-133.
- Marcia, J. (1976). Studies in ego identity. Unpublished research monograph. Simon Fraser University.
- Marcia, J. (1980). Identity in adolescence. In J. Adelson (Ed.), Handbook of adolescent psychology. New York: Wiley & Sons.
- Marcia, J., & Friedman, M. (1970). Ego identity status in college women, Journal of Personality, 38, 249-263.
- Marten, G. (1980). Psychological effects of cancer in the adolescent: Clinical management and challenge for research. In Schulman & Kupst (Eds.), The child with cancer. Springfield, IL: Thomas.
- Mattson, D. (1972). Long-term physical illness in childhood: A challenge to psychosocial adaptation. Pediatrics, 50, 801-811.
- Matteson, D. (1974). Alienation vs. exploration and commitment: Personality and family correlates of adolescent identity statuses. Report from Project for Youth Research. Copenhagen: Royal Danish School of Educational Studies.

- Matteson, D. (1977). Exploration and commitment: Sex differences and methodological problems in the use of identity status categories. Journal of Youth and Adolescence, 6, 353-374.
- McClellan, T., & Cowasn, G. (1970). Use of antipsychotic and anti-depressant drugs by chronically ill patients. American Journal of Psychiatry, 126, 113-115.
- Mead, G. (1934). Mind, self and society. Chicago: University of Chicago Press.
- Meilman, P. (1977). Crisis and commitment in adolescence: A Developmental study of ego identity statuses. Unpublished doctoral dissertation, University of North Carolina.
- Mettlin, C., Reese, P., & Murphy, G. (1980). Care-seeking behavior among positive screenees. Preventive Medicine, 9, 518-524.
- Morrow, M. (1978). Nursing management of the adolescent: The effect of cancer chemotherapy on psychosocial development. Nursing Clinics of North America, 13, 319-336.
- Moulding, T., Onstad, G., & Sbarbaro, J. (1970). Supervision of outpatient drug therapy with the medication monitor. Annals of Internal Medicine, 73, 559-564.
- Munro, G., & Adams, G. (1977). Ego identity formation in college students and working youth. Developmental Psychology, 13, 532-534.
- Neuber, K., & Genther, R. (1977). The relationship between ego identity, personal responsibility, and facilitative communication. Journal of Psychology, 95, 45-49.
- Offer, D., Marcus, D., & Offer, J. (1970). A longitudinal study of normal adolescent boys. American Journal of Psychiatry, 126, 917-924.
- O'Malley, J., Koocher, G., Foster, D., & Slavin, L. (1979). Psychiatric sequelae of surviving childhood cancer. American Journal of Orthopsychiatry, 49, 608-616.
- Orlofsky, J., Marcia, J., & Lesser, I. (1973). Ego identity status and the intimacy vs. isolation crisis of young adulthood. Journal of Personality and Social Psychology, 27, 211-219.
- Orr, D., Weller, S., Satterwhite, B., & Pless, B. (1984). Psychosocial implications of chronic illness in adolescence. The Journal of Pediatrics, 104, 152-157.

- Piers, E. (1969). The Piers Harris Children's Self-Concept Scale. Nashville, TN.
- Platt, J., Pomeranz, D., Eisenmann, R., & DeLisser, O. (1970). Importance of considering sex differences in relationships between locus of control and other personality variables. Proceedings of the 78th Annual Convention of the American Psychological Association, 463-464.
- Rachman, A. (1975). Identity group psychotherapy with adolescents. Springfield, IL: Thomas.
- Rainey, L. (1982). Adolescents with cancer. In R. Pasnau (Ed.), Psychosocial aspects of medical practice: Children and adolescents. Menlo Park, CA: Addison-Wesley.
- Roth, H., Caron, H., & Hsi, B. (1978). Measuring intake of prescribed medication: A bottle count and tracer method compared. Clinical Pharmacology Therapy, 13, 463.
- Rotter, J. (1966). Generalized expectancies for internal versus external control of reinforcement. Psychological Monographs, 80, 260-295.
- Ryckman, R., & Malikioski, M. (1974). Differences in locus of control orientation for members of selected occupations. Psychological Reports, 34, 1224-1226.
- Sackett, D. (1976). Priorities and methods for future research. In Sackett & Haynes (Eds.), Compliance with therapeutic regimens. Baltimore: Johns Hopkins University Press.
- Sackett, D. & Haynes, R. (1976). Compliance with therapeutic regimens. Baltimore: Johns Hopkins University Press.
- Schenkel, S. (1975). Relationship among ego identity status, field-independence and traditional femininity. Journal of Youth and Adolescence, 4, 73-82.
- Simmons, D. (1970). Development of an objective measure of identity achievement status. Journal of Projective Techniques and Personality Assessment, 34, 241-244.
- Smith, S. (1979). A reliable method for evaluating drug compliance in children with cancer. Cancer, 43, 169-173.
- Sonstroem, R., & Walker, M. (1973). Relationship of attitude and locus of control to exercise and physical fitness. Perceptual and Motor Skills, 36, 1031-1034.

- Spinetta, J., Deasy-Spinetta, P., McLaren, H., Kung, F., Schwartz, D., & Hartman, G. (1982). The adolescent's response to cancer. In C. Tebbi (Ed.), Major topics in pediatric and adolescent oncology. Boston: Hall.
- Stark, P., & Traxler, A. (1974). Empirical validation of Erikson's theory of identity crisis in late adolescence. Journal of Psychology, 86, 25-33.
- Steinhausen, H. (1981). Chronically ill and handicapped children and adolescents - Personality studies in relation to disease. Journal of Abnormal Child Psychology, 9, 291-297.
- Stevens, G., & Featherman, D. (1981). A revised socioeconomic index of occupational status. Social Science Research, 10, 364-395.
- Stimson, G. (1974). Obeying doctor's orders: A view from the other side. social Science and Medicine, 8, 97.
- Strickland, B. (1978). Internal-external expectancies and health-related behaviors. Journal of Consulting and Clinical Psychology, 46, 1192-1211.
- Sullivan, H. (1953). The interpersonal theory of psychiatry. New York: Norton.
- Taylor, D. (1978). Compliance with antihypertensive drug therapy. Annals of the New York Academy of Science, 4, 154-155.
- Tiedt, E. (1972). The adolescent in the hospital: An identity-resolution approach. Nursing Forum, 11, 121-140.
- Wagner, J. (1976). A study of the relationship between formal operations and ego identity in adolescence. Unpublished doctoral dissertation, SUNY at B.
- Wallston, K., Maides, S., & Wallston, B. (1976). Health-related information seeking as a function of health related locus of control and health value. Journal of Research in Personality, 10, 215-222.
- Wallston, K., & Wallston, B. (1981). Health locus of control scales. In H. Lefcourt (Ed.), Research with the locus of control construct. New York: Academic Press.
- Wallston, K., Wallston, B., & DeVillis, R. (1978). Development of the multidimensional health locus of control scales. Health Education Monographs, 6, 160-170.

- Wallston, B., Wallston, K., Kaplan, G., & Maides, S. (1976). Development and validation of the health locus of control scale. Journal of Consulting and Clinical Psychology, 44, 580.
- Waterman, A. (1982). Identity development from adolescence to adulthood: An extension of theory and a review of research. Developmental Psychology, 18, 341-358.
- Waterman, A., & Archer, S. (1982). The Ego Identity Interview. Trenton State College.
- Waterman, C., Buebel, M., and Waterman, A. (1970). The relationship between resolution of the identity crisis and outcomes of previous psychosocial crises. Proceedings of the 78th Annual Convention of the American Psychological Association, 5, 467-468.
- Williams, A. (1972). Personality characteristics associated with preventive dental practices. Journal of American College of Dentists, 39, 225-234.
- Zabusky, G., & Kymissis, P. (1983). Identity group therapy: A Transitional group for hospitalized adolescents. International Journal of Group Psychotherapy, 33, 99-109.
- Zeltzer, L. (1980). The adolescent with cancer. In Kellerman, J. (Ed.), Psychological aspects of childhood cancer. Springfield, IL: Thomas.
- Zeltzer, L., Dash, J., Ellenberger, L., Rigler, D., Kellerman, J. (1980). Psychological effects of illness in adolescence, 2. Impact of illness in adolescence - crucial issues and coping styles. Journal of Pediatrics, 97, 132-138.

APPENDIX A
Ego Identity Interview
High School Form

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APPENDIX B
Ego Identity Interview
Post High School Form

APPENDIX C

Ego Identity Incomplete Sentence Blank

APPENDIX D
Multidimensional Locus of Control Scales

APPENDIX E

Multidimensional Health Locus of Control Scales

APPENDIX F
Letter to I11 Subjects



CHILDREN'S HOSPITAL

700 Children's Drive
Columbus, Ohio 43205
Telephone (614) 461-2000

Dear Patient or Parent:

Here at Children's Hospital we are greatly concerned with the psychological as well as the physical well-being of our patients. We realize that coping with cancer may be a trying ordeal. Naturally we seek increasingly better ways of helping our patients work through this difficult time.

Specifically, we are interested in the ways in which adolescents go about establishing personal values and goals and developing a sense of independence while they are coping with cancer. It is hoped that by gaining information about the development of adolescents during the course of cancer treatment, health professionals will be better able to work toward keeping possible negative experiences to a minimum. We are also interested in how any impact upon development might affect patient participation in the medical treatment plan.

As part of a major research project co-sponsored by the Clinical-Child Psychology Program at Ohio State University and the pediatricians in the Hematology Department here at Children's Hospital, we are seeking to get a clearer picture of the development of our adolescent patients. This is where we ask your cooperation.

While you are at the clinic today, we ask for your consent (or consent for your son or daughter) to meet with someone from the Clinical-Child Psychology Program. During this meeting you will be asked questions about values and goals you have established or are considering. You will also be asked to fill out several questionnaires concerning your understanding and experience of illness. All this can be expected to take about an hour and a half of your time; many adolescents find the interview and questions to be interesting.

Your decision to participate in this study and to answer any questions are voluntary and you may expect the same care for your illness whether or not you decide to participate. You need not answer any questions which are stressful.

Furthermore, your responses will be kept strictly confidential; that is, participants will be referred to by a code number only, and information, including audiotape gathered, will be destroyed after the data are analyzed.

Finally, for purposes of data analysis, certain information regarding your medical history is needed. This will include general data such as number and duration of hospitalizations, type of treatments used, and duration and

Page two

illness. This information may be obtained from medical records and, like information obtained during the interview, shall be kept absolutely confidential.

We hope you will decide to participate in this study. To do so, please sign the attached consent form and return it to Ms. Gavaghan. If you have any questions, please feel free to ask.

Sincerely,

Jane E. Roach

Jane E. Roach, M.D.
Pediatric Hematology

Frederick B. Ruyman

Frederick B. Ruyman, M.D.
Director, Pediatric Hematology

Mary P. Gavaghan

Mary P. Gavaghan, R.N., M.A.
Clinical Child Psychology

Charles W. Wenar

Charles W. Wenar, Ph.D.
Professor, Ohio State University

APPENDIX G
Consent Form for Ill Subjects

NU-37
(Rev. 2/80)

CONSENT TO SPECIAL TREATMENT
OR PROCEDURES
CHILDREN'S HOSPITAL RESEARCH FOUNDATION
Columbus, Ohio

Date _____ Time _____ a.m.
p.m.

I consent to the performance upon _____
born _____, the following treatment or procedures: to be inter-
viewed and fill out questionnaires regarding personal goals, values, and feelings of
independence.

of which part _____
is an experimental (product) (procedure).
This is done as part of an investigation entitled: "Psychosocial Development of
Adolescents with Cancer"

This treatment or procedure is to be done by, or under the direction of Drs. Jane Roach,
Fred Ruvmann, and Charles Wenar who is authorized to use the services of others in
the performance of this procedure.

1. Nature and purpose of the procedure or treatment: to relate to clients the infor-
mation about the attitudes and values of adolescents who have been under therapy for
cancer.
2. Other possible methods of treatment: no other method of obtaining information
3. Known risks involved: Some individuals may find certain questions personal or
sensitive; however, you may choose not to answer any questions and all responses
will be kept strictly confidential.
4. Possible benefits to the patient: No immediate benefit.

STATEMENT OF CONFIDENTIALITY: I understand that the confidentiality of my response will
be observed in a manner consistent with the goals of the project and my individual
right to privacy.

COMPENSATION STATEMENT: I understand that in the unlikely event of physical injury
occurring during the course of this study, The Children's Hospital and The Children's
Hospital Research Foundation are not in a position to provide either free medical care
or financial compensation.

The above have been explained to me and I understand them. I understand that any
further questions I may have concerning the procedure described will be fully answered.
Finally, I understand that I am free to withdraw my consent and stop participation in
the project at any time. My signature represents a free and voluntary act.

Witnesseth:

(Investigator)

Signed _____

(parent or person authorized to consent
for patient)

Signed _____

(patient)

APPENDIX H
Letter to Healthy Subjects

Dear Participant or Parent:

Members of the Psychology Department at Ohio State University are conducting a study concerning the psychological impact of serious illness on the lives of adolescents. We are concerned about the ways in which adolescents go about establishing personal values and goals and developing a sense of independence while they are coping with illness. We would like to compare responses of ill adolescents to those of healthy individuals. This is where we ask your cooperation since you currently do not have a serious illness.

If you (or your child) would like to participate in this study, you (s/he) will be interviewed by someone from the Clinical Child Psychology Program at Ohio State concerning your personal goals and values. You will also be asked to fill out several questionnaires concerning your views of illness and feelings of independence. Your decision to participate in this study and to answer any questions is voluntary. All of your responses will be considered strictly confidential.

We hope you will decide to participate (or give your child permission to participate) in this study. Many young people find the interview and questions interesting. If you have any questions please feel free to ask.

Sincerely,

Mary Pat Cavaghan, M.A.

Charles Wenar, Ph.D.
Department of Psychology

APPENDIX I
Consent Form for Healthy Subjects

THE OHIO STATE UNIVERSITY

Protocol No. _____

CONSENT FOR PARTICIPATION IN
SOCIAL AND BEHAVIORAL RESEARCH

I consent to participating in (or my child's participation in) research entitled:

"Psychosocial Development of Adolescents with Cancer: Relationship to
Patient Compliance"

Charles Wenar, Ph.D. or his/her authorized representative has
(Principal Investigator)

explained the purpose of the study, the procedures to be followed, and the expected duration of my (my child's) participation. Possible benefits of the study have been described as have alternative procedures, if such procedures are applicable and available.

I acknowledge that I have had the opportunity to obtain additional information regarding the study and that any questions I have raised have been answered to my full satisfaction. Further, I understand that I am (my child is) free to withdraw consent at any time and to discontinue participation in the study without prejudice to me (my child). The information obtained from me (my child) will remain confidential unless I specifically agree otherwise by placing my initials here _____.

Finally, I acknowledge that I have read and fully understand the consent form. I sign it freely and voluntarily. A copy has been given to me.

Date: _____

Signed: _____
(Participant)Signed: _____
(Principal Investigator or his/
her Authorized Representative)Signed: _____
(Person Authorized to Consent
for Participant - If Required)

Witness: _____

HS-027 (Rev. 12-81) -- To be used only in connection with social and behavioral research.