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Factors Related to Resilience Abilities and Self-Care Practices in Adolescents

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FACTORS RELATED TO RESILIENCE ABILITIES AND SELF-CARE

PRACTICES IN ADOLESCENTS

by

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ABSTRACT

Factors Related to Resilience Abilities and Self-Care

Practices in Adolescents

Identification of resilience factors in adolescents is necessary to promote

health and decrease the incidence of negative health outcomes related to risk-

behaviors in this age group. The purpose of this descriptive-correlational research

was twofold: (1) to investigate the inter-relationships of perceived health status,

perceived self-efficacy, resilience abilities, self-care agency and self-care

practices in adolescents and (2) to evaluate a revised measure, The Solem

Adolescent Resilience Abilities Scale (SARAS-R). Orem's self-care theory was

used as the theoretical framework for this study.

The convenience sample of 100 adolescents from San Diego county in

southern California were recruited through health professionals and secondary

school educators. The data collection instrument, SARAS-R, was used to measure

factors that influence health practices in adolescents. SARAS-R was a 46 item,

sequentially integrated questionnaire derived through a matrix analysis.

Descriptive statistics and cross-tabulation were used to describe the sample and

the study variables. Pearson product-moment correlation, chi-square analysis,

multiple regression and analysis of variance were used to analyze the data.

Statistically significant relationships were found between all variables. No

inverse relationships were found. Perceived health status, perceived self-efficacy

and resilience abilities were found to be predictors of self-care agency. However,

only perceived health status and resilience abilities were found to be the strongest

predictors of self-care practices. The strongest predictors of self-care practices were the following items: *I am able to depend on my own resources* and *I am able to ask others for help*. Chronbach's alpha was .84 for the total SARAS-R.

Conclusions drawn from this study indicate that SARAS-R may be a reliable instrument for use in identifying resilience factors that enable health outcomes, positive health promotion and self-care practices. Perceived health status and resilience abilities need to be encouraged since they were found to be the strongest predictors of self-care practice. Resilience is an important factor when adolescents initiate and perform behaviors on their own behalf.

DEDICATION

I would like to dedicate this dissertation to:

The memory of my parents, Oscar and Amelia Rose. Both of them lived their life with dignity, hard work, a positive and quiet spirit, and love of family. I learned valuable lessons from them.....maintaining a positive spirit and persevering bring peace of heart and service to others.

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CHAPTER I

INTRODUCTION

Background

A growing national concern exists regarding the large number of young people who engage in risk behaviors that result in negative social, emotional, and physical health outcomes such as drug abuse, teen pregnancy, AIDS, delinquency, depression, school dropout and suicide (U.S. Department of Health and Human Services, Public Health Service [DHHS], 1991). In 1999, strong evidence for these behaviors was found in data from San Diego youths (Youth Risk Behavior Survey, 1999). Despite these facts, a growing body of resilience research provides empirical evidence that many at-risk adolescents can develop into confident, competent and caring adults despite these adversities (Bloom, 1996; Earles & Earles, 1987; Garmezy, 1990; Werner & Smith, 1992). However, nursing research concerning the phenomenon of adolescent resilience is limited. Nursing can take a leadership position in research, development and evaluation of measures to assess resilience among adolescents during this challenging time of growth and development. Innovative and proactive intervention strategies must be established to reduce risk behaviors.

Study of resilience is particularly important during the dynamic period of adolescence. Adolescence is an important transitional life phase that presents a host of new challenges. Developmentally, it is a period of great stress, high vulnerability, mood changes, and emotional liability (Hamburg, 1997; Hartzell, 1984). It is a crucial formative period because roles of adulthood begin to be addressed as the adolescent searches for self-definition and a personal set of values to guide decision-

making (McCaleb & Cull, 2000). However, conflict and uncertainty may mark this period of development as adolescents attempt to form intimate relationships with peers and dating partners, particularly in the absence of healthy role models, but even in their presence as well.

Major developmental challenges for adolescents include separating effectively from parents and establishing self-identities capable of independent action; developing mature senses of sexuality; and realizing vocational goals, positive self-images and personal codes of ethics (O'Dougherty & Brown, 1990). Promotion of health for adolescents during this period of development poses challenges to parents, health care providers, and educators. Thus, design of instruments that measure specific dimensions and expansion of the domains of adolescent resilience are important steps in the development of health promotion activities and preventive healthcare strategies in the care of adolescents.

Resilience, the ability to "spring back" in the face of adversity or uncertainty, is of particular interest to nurses because of its health implications (Baldwin, Kasser, Zax, Sameroff, & Seifer, 1993; Egeland, Carlson, & Stroufe, 1993; Werner, 1993). Although the concept of resilience has been defined both as a personality trait (Jacelon, 1997; Wagnild & Young, 1990) and as a process (Dyer & McGuinness, 1996; Hunter & Chandler, 1999), instruments to assess adolescent resilience have not yet been published by nursing or other health care disciplines. Test of a theory-driven instrument to measure resilience abilities, designed specifically for use with adolescents, may be the critical first step in identifying resilience factors that enable

healthy outcomes, positive health promotion and self-care practices during adolescence.

Inconsistencies in the conceptualization of resilience have contributed to some confusion concerning the nature of resilience. Resilience has been conceptualized both as an aggregate of resources, including specifically a sense of self-efficacy and the help of supportive adults (Werner & Smith, 1992), and as a capacity and desire for satisfying intimate relationships with others (Holaday & Terrell, 1994). Rutter (1985, 1987, 1993) conceptualized resilience as a buffering factor that functions as a protective mechanism consisting of environmental and constitutional factors.

A review of the theoretical literature in nursing and other disciplines finds resilience discussed from a variety of perspectives with unique and overlapping dimensions and critical attributes. Three major process dimensions for the concept of resilience are cited: rebounding, surviving, and persevering (Bloom, 1996; Dyer & McGuiness, 1996; Jacelon, 1997). Protective factors are discussed as specific competencies necessary for the process of resilience to occur. Competencies include the healthy skills and abilities that can be accessed in the individual, interpersonal and familial domains (Dyer & McGuiness, 1996). Protective factors include a sense of self, determination, pro-social attitude, self-efficacy, social support and personal competence (Bloom, 1996; Dyer & McGuiness, 1996; Mangham, Reid, & Stewart, 1996).

Contradictory findings exist concerning adolescent resilience research. Numerous studies have found that when the resilience process is fostered appropriately, it can contribute to a positive state of health (Haas, 1997; Rak &

Patterson, 1996; Rew, Taylor-Seehafer, Thomas & Yockey, 2001; Stewart, Reid, & Mangham, 1997; Werner & Smith, 1982, 1992). However, findings from one nursing study question whether resilience is really a healthy trait for adolescents (Hunter & Chandler, 1999).

Examination of the literature also reveals the lack of standardized and validated instruments to measure resilience in adolescents. Holaday and Terrell (1994) postulate that despite the fact that excellent progress has been made in the refinement of instruments measuring psychopathology or maladaptive behavior, little progress has occurred in the development of measurements of adaptive behavior and resilience. Presently there are no published instruments to measure adolescent resilience. One instrument, the Resiliency Scale (RS), is currently available to measure resilience in adult women (Wagnild & Young, 1993). To determine whether the Resiliency Scale (RS) developed by Wagnild and Young (1993) can accurately measure adolescent resilience, a triangulated design was used by Hunter and Chandler (1999) to explore the concept of resilience. Findings indicated "current instruments cannot adequately allow investigators to assess the phenomenon of resilience, especially resilience in adolescents, because the instruments do not allow investigators to determine potentially maladaptive and psychopathologic responses pervasive in this culture" (p.246).

One theory-driven measure, the Solem Adolescent Resilience Abilities Scale (SARAS), was developed for use with adolescents (Solem, Kim & Boren, 1999). Psychometric evaluation from a convenience sample of adolescents (n=47) provided empirical evidence of its construct validity and reliability. Evaluation of the measure

was statistically significant to support two distinct subscales of Interactive and Personal Resources called *anchoring forces*. This salient finding expanded the concept of adolescent resilience and supported the need for this study with a larger and more culturally representative sample of adolescents to strengthen the generalization of findings.

For the purpose of this research, the concept of resilience is defined as "a complex, dynamic process which is influenced by *anchoring forces*, where individuals can spring back from adversity and uncertainty to move forward in life" (Solem et al., 1999). The term *anchoring forces* was derived from an earlier pilot study of women to represent resiliency factors/attributes that include personal and interactive resources. Pilot study participants were mothers who had witnessed or been survivors of family violence during their own adolescence, and were not replicating this behavior in adult life. The interviews focused upon mother's attitudes toward violence, and whether they believed they transferred these attitudes to their adolescent children. The term *anchoring forces* was actually used by the participants in describing the protective mechanisms that assisted them in their process of survival as an adolescent.

Literature on resilience in adolescents suggests that, in the presence of challenging life events, a sense of self efficacy significantly contributes to positive outcomes (Masten, Best & Garmezy, 1990; Werner & Smith, 1992). Self-efficacy, or the belief that one has the ability to produce a desired outcome, is an important characteristic of healthy adolescent development (Grubbs et al., 1992). In addition,

self-care, which is the central concept of Orem's (1980, 1985, 1991) theory, is an essential component in promoting one's own and others' health. People engage in self-care practices that are directed toward the maintenance and promotion of health. Nursing studies have investigated perceived health status, perceived self-efficacy, self-care agency, and self-care practices of adolescents (James, 1990; Pender, 1987; Rakowski, 1986), but have not addressed the factor of resilience abilities and how this might be related to positive health promotion.

A deeper understanding of this concept may assist nurses in understanding why one individual may react with symptoms to an objectively minor event while another even in the face of a major disruption may not experience distress and develop interventions to promote adolescent self-care. Further testing of the reliability of the revised SARAS instrument with a more diverse population of adolescents may provide a clinically relevant tool for screening adolescent populations and development of interventions to positively influence health promotion.

Statement of the Problem

Given the findings of the 1999 YRBS and the lack of valid and reliable instruments to measure how resilient adolescents avoid these risks, further research is needed to identify the relationships between perceived health status, perceived self-efficacy, resilience abilities, self-care agency and self-care practices. The inter-relationships discovered between variables are important to gain a more thorough understanding of this phenomenon prior to future examination of causality. This research is embedded in the work of Orem's (1980, 1985, 1991) model of self-care.

With shrinking resources, uncertain health care systems, and a more culturally diverse society, failure to promote the health of adolescents to act on their own behalf would be a significant oversight. Research that illuminates the most powerful explanations of positive and preventive health practices among adolescents should be a priority for nursing. Improving the self-care abilities of adolescents is central to the health and well being of teens during this dynamic period of development.

Purpose

The purpose of this descriptive correlational study was twofold: (1) to investigate the inter-relationships of perceived health status, resilience abilities, perceived self-efficacy, self-care agency and self-care practices of adolescents and (2) to evaluate a revised measure, SARAS R, in a larger more culturally diverse convenience sample of adolescents for use in identifying resilience factors that enable healthy outcomes, positive health promotion and self-care practices in adolescents.

Significance of the Study

This research is needed to provide nurses, physicians, and educators in a variety of settings with a tool that is generally useful with culturally diverse adolescents to employ intervention strategies that may promote healthy self-care behaviors. A clearer understanding of how adolescents perceive their health, self-efficacy, and resilience abilities, and discovering the relationships between these variables with self-care agency and self-care practices, can also be used to guide health care providers and educators in setting realistic goals and interventions. These findings may be used to enhance adolescents' existing strengths or to remediate their

self-care limitations. In addition, potential hypothesis to be tested may emerge from the results of this study for further research.

Theoretical Framework

The nursing conceptual framework developed by Orem (1980, 1985, 1991) can serve as the primary theoretical model used for nursing research related to health promotion involving adolescents. Orem's model revolves around the concept of self-care. Self-care involves purposeful and deliberate actions that are learned by the individual and directed toward maintaining life, health, and well-being. The individual's motivation, knowledge, and skills influence his/her ability to carry out self-care (Orem, 1991).

Self-care practices are influenced by basic conditioning factors, which are human factors or events that influence a person's ability to participate in self-care activities. These basic conditioning factors include age, gender, developmental state, health state, sociocultural orientation, health care system factors, family system factors, patterns of living or life experiences, availability of resources and environmental factors (Orem, 1991). According to Orem (1991), the requirement for nursing intervention exists when a client is unable to meet his or her own needs for the basic necessities of life. Nursing interventions must assist the individual in the development or regulation of self-care.

The basic conditioning factors designated as the study variables became the independent variables (perceived health status, perceived self-efficacy and resilience abilities) and will be further explored. Orem (1991) refers to the basic conditioning factors of health state, developmental state, and environmental factors respectively in

reference to the independent variables cited. Denyes (1980) and James (1990) established that adolescents were capable of performing and reporting self-care, also known as self-care agency. Thus, self-care agency was designated as the intermediate variable to this design. Together, the intermediate variable and dependent variable (self-care practices) are depicted in the schematic model presented in Figure 1. The model is seen to advance as indicated by the arrows in the schematic and is influenced by each of the individual variables influencing the intermediate variable (self-care agency) and further influencing the adolescent's self care practices. Self-care agency is also combined with the basic conditioning factors (perceived health status, perceived self-efficacy and resilience factors) to explore their total influence on the dependent variable, self-care practices.

Perceived health status is an index of an individual's total sense of well-being (Tessler & Mechanic, 1978). This variable is specifically identified as a basic conditioning factor by Orem (1985). The three remaining individual variables are each related to a category listed by Orem and appropriately reflect Orem's interpretation of relevant content for understanding self-care abilities and hence, self-care practices or health promoting behaviors. These three variables are: (1) perceived self-efficacy (related to developmental stage)—a belief of one's capability to successfully perform the behavior required to produce a desired outcome; (2) resilience abilities which can be both personal and interactive (environmental factors), and (3) self-care agency or an individual's capability or power to engage in self-care and requires conscious, deliberate actions aimed at attaining and maintaining health (Orem, 1985).

Nursing studies have used Orem's model of self-care to focus particularly on the self-care activities of teenagers (Denyes 1980, 1982, 1988; Frey & Denyes, 1989; James, 1990). A study conducted by Denyes (1980) expanded on Orem's model by applying theories of development to self-care in adolescents and resulted in the development of an instrument to measure self-care agency in adolescents. In her studies, she explored the relationships between basic conditioning factors and self-care agency to self-care practices and established that adolescents were capable of performing and reporting self-care.

Figure 1.

Model for Positive Health Promotion in Adolescents

Independent Variables   **Intermediate Variable**   **Dependent Variable**

Assumptions

The assumptions on which this correlation study are based include:

1. Basic conditioning factors (perceived health status, perceived self-efficacy and resilience abilities) have yet to be correlated with self-care agency and self-care practices as a health promotion strategy among adolescents.

2. Health-related behaviors developed during adolescence may often persist into adulthood making self-care practices and factors that influence these practices an important area of research with adolescents.

3. Self-care behaviors are critical for positive health and well being.

4. Perceptions are legitimate indicators of individual behavior.

5. Identification of resilience abilities, which enable healthy outcomes, may provide nurses with strategies for intervention to promote healthy self-care practices (health promotion) in adolescents.

Research Questions

1. What are the inter-relationships between perceived health status, perceived self-efficacy and resilience abilities?

2. What are the inter-relationships among perceived health status, perceived self-efficacy, resilience abilities, and self-care agency of adolescents and their self-care practices?

3. To what degree do perceived health status, perceived self-efficacy and resilience abilities predict self-care agency in adolescents?

4. To what degree do perceived health status, perceived self-efficacy, resilience abilities, and self-care agency predict adolescent self-care practices?

Definition of Terms

Adolescence: a life stage in which young people are very much preoccupied with two critical tasks: (1) the establishment of an identity and (2) a search for autonomy (Borman & Schneider, 1998).

Perceived health status: individual's subjective assessment of current and prior health, health outlook, resistance to illness, and general health worries or concerns as measured by the General Health Rating Index (GHRI) (Davies & Ware, 1981).

Perceived self-efficacy: belief of an individual's capability to successfully perform the behavior required to produce a desired outcome as measured by the General Self-Efficacy subscale (GSES) (Sherer et al., 1982).

Resilience: a complex, dynamic process which is influenced by *anchoring forces*, where individuals can spring back from adversity and uncertainty to move forward in life. *Anchoring forces* support the resilience concept and include personal and interactive resources (Solem et al., 1999).

Resilience Abilities: abilities (healthy skills and behaviors) which an individual accesses during times of adversity or uncertainty which may occur within the individual (personal) or the interpersonal or family environment (interactive resources) as measured by the Solem Adolescent Resilience Abilities Scale (Solem et al., 1999).

Self-Care Agency: power to engage in the estimative and production operations essential for self-care (Nursing Development Conference Group, 1979) as measured by the Denyes Self-Care Agency Instrument (Denyes, 1980).

Self-Care Practices: behaviors that individuals initiate and perform on their

own behalf in maintaining life, health, and well being (Orem, 1991) as measured by

Denyes Self-Care Practice Instrument (Denyes, 1988).

CHAPTER II

LITERATURE REVIEW

The health of our youth is in jeopardy. One out of every five adolescents has experienced at least one critical health problem, such as injuries resulting from a gunshot wound or motor vehicle accident; severe depression leading to suicide attempts; HIV infection; and drug, alcohol, and/or tobacco use (Irwin et al, 1994; Ozer et al, 1998). Adolescence is a unique developmental stage distinct from both childhood and adulthood. As a developmental stage, the second decade of life has special vulnerabilities, health concerns and challenges. During this time, an increasing number of adolescents are exposed to deleterious environmental conditions and engage in risky behaviors that threaten their current and future health.

During this past decade, analyses of large datasets, including the YRBS (1999) have focused their attention on resiliency and protective factors in the lives of young people. Here, a focus on resiliency means that the inquiry is directed toward understanding success and well-being, identifying those factors that buffer against the stresses of everyday life that might otherwise result in adverse physical, social or psychological outcomes for youth (Garmezy, 1990; Luther & Zigler, 1991; Werner, 1992).

Many health related behaviors developed during adolescence persist into adulthood (Mickalide, 1986), making positive health practices and factors that influence these practices an important area to study in adolescents. Perceived health status, self-efficacy and self-care agency are cited in the literature as contributing to

positive health practices during adolescence (Gaut & Kieckhefer, 1988; James, 1990; Rakowski, 1986).

No studies to date have directly looked at how factors of resilience are related to self-care practices in adolescents. Continued research in the area of resilience and positive health practices for adolescents is needed so that a better understanding of health behaviors for this age group is achieved.

This chapter presents a review of the literature concerning the study variables of resilience, perceived health status, perceived self-efficacy, self-care agency and self-care practices. For the purpose of this study, significant strengths as well as limitations in the literature are discussed.

Resilience

Historically, resilience has been described as a complex concept that involves interaction between adversity and an individual's internal and external protective factors, allowing one to overcome adversity (Luther & Zigler, 1991; Rutter, 1987). Recent nursing research supports the historic perspective of resilience in adolescents as a positive state (Haas, 1997; Rew et al, 2001). These studies support early psychology research identifying protective factors that assisted a child in developing resilience for a positive outcome (Garmezy & Rutter, 1983; Werner and Smith, 1982). Some authors state that resilience can be fostered through appropriate interventions (Mangham, Reid, & Stewart , 1996; Werner & Smith, 1982). Health related behaviors developed during adolescence persist into adulthood (Mickalide, 1986), however one study questions whether adolescent resilience is really an

unhealthy state (Hunter & Chandler, 1999) which clearly shows the need for future research.

Psychosocial Attributes

The concept of resilience is first reported in psychology literature by Norman Garmezy, a pioneer investigator who began to focus risk and outcome studies on resiliency and misfortune (Garmezy, 1981, 1983). He was among the first to emphasize that, no matter how high the risks, morbid outcome in high risk populations do not reach 100%. He defines resilience as "attributes of persons, environments, situations, and events that appear to temper predictions of psychopathology based upon an individual's at-risk status" (Garmezy, 1981, p. 73). In this historic perspective, resilience is seen as a healthy state as Garmezy began to appreciate a growing concern for the "protective factors" that Rutter (1985, 1987) found in his epidemiological research on psychosocial resilience and protective mechanisms in a child's response to stress and adversity. Garmezy (1981) studied resilience in children exposed to the stressors of poverty and prejudice in urban ghettos whose risks for maladaptation were high, but whose behaviors were marked instead by patterns of behavioral adaptation. Teachers and clinicians rated these children as possessing "social skills, a positive sense of self, self-esteem and personal power rather than powerlessness. Some studies reported students had an internal locus of control and were capable of exercising some control over their environment" (p. 75). Maintenance of a high level of self-esteem and self-efficacy despite adversities by resilient children is significant in prevention and intervention (Garmezy, 1981).

Studies investigating resilience factors that enhanced the health of children who suffered severe burns revealed a number of personal attributes, including: perception of personal control and independence rather than dependent helplessness or hopelessness, stable self-esteem, positive self-regard, social competence, capacity and desire for a satisfying and intimate relationships with others rather than isolation and withdrawal, and an ability and willingness to tolerate stress with the capacity for personal control under most situations (Byrne et al, 1986; Holaday & Terrell, 1994). If nurses and other health care professionals invest time and effort in children suffering from such adversity, they may develop high expectations for these young patients to make a positive adjustment. If this expectation is communicated in some way, it might be an important yet unidentified factor contributing to resilience in high-risk teens.

Traits of resilience connote emotional stamina and have been used to describe persons who display courage and adaptability in the wake of life's misfortunes (Wagnild & Young, 1990). Cowen and Work (1988) together with Wagnild and Young (1993) highlight personal, family, and community factors present in individuals who are successful despite adversity in their lives. Critical attributes of above average intelligence, wide range of interests and activities, self-reliance, independence, positive outlook, and strong sense of self are presented as traits of resilient individuals (Jacelon, 1997). Jacelon also discusses self-reliance, leading engaged lives, and having the social support of a caring adult as important dimensions of the concept of resilience. The literature on resilience overlaps with discussions of

personal and social support (Bloom, 1996; Cowen & Work, 1988; Jacelon, 1997;
Wagnild & Young, 1990, 1993).

Resilience is to a certain degree an innate characteristic described in the
literature. Studies of children and adolescents indicate that those who become
resilient adults were resilient during childhood and adolescence. They are likely to be
outgoing rather than shy; comfortable with themselves and willing to adapt to new
situations; perceptive of themselves as in control and independent rather than
dependent and helpless; possessing a positive self-regard and a desire to satisfy
intimate relationships with others rather than living in isolation and withdrawal
(Bloom, 1996; Cowen & Work, 1988; Jacelon, 1997).

The literature also discusses resilience as a dynamic process in which
individuals who are faced with adversity are able to successfully persevere or proceed
with their lives. In this process the individual maintains a strong sense of self, a pro-
social attitude, and a direction in one's life plan (Dyer & McGuinness, 1996). Several
authors (Dyer & McGuinness, 1996; Mangham et al., 1996; Polk, 1997) also address
resourcefulness in problem solving as a critical attribute in the resilience process.
According to Jacelon (1997), a lack of clarity exists regarding the steps in this
process. Through a concept synthesis of the resilience literature, Polk (1997) defines
characteristics of the resilience process through a four-dimensional construct
suggesting dispositional, relational, situational, and philosophical patterns. Although
the literature discloses interrelatedness with this these patterns, no empirical evidence
is available to support it.

Protective Factors

The studies cited in this section are important to the concept of resilience, although they focus primarily on studies involving the impact of violence and the adolescent's response and abilities to survive despite this adversity. Garmezy's (1981) findings from children without fathers who were exposed to poverty and prejudice but not violence, correlate with findings from a field study project conducted by this author with navy wives who were mothers of adolescent children. The women were interviewed to explore their attitudes toward violence, how they developed their attitudes, and how they conveyed these attitudes to their adolescents. Like the families in Garmezy (1981) work, father-absence was consistent in the families studied. Participants spoke of violence as having been a part of their world as adolescents, whether it was "outside" their family of origin or "within" it and they were passionate in descriptions of how they did not want to "pass on" the violence to their adolescents. In their role as mothers, the participants spoke of their need to be "the rock of Gibraltor" in times of family stress during their youth and the continued desire to retain this stable role. In both studies, the participants had at least one adult role model who meaningfully touched their lives, a positive sense of self, and a sense of personal power rather than powerlessness as identified resilient characteristics. An intact family was not identified as a consistent correlate.

A major limitation of both studies is the lack of any consistent correlation of father-absence and academic or social achievement. A mother's style of coping and compensating for an absent father appeared to be a powerful redemptive variable. Although mothers shared that they had experienced violence "outside" or "within"

their family of origin during adolescence, they constructed their social reality as one of strength, coping and achievement. Participants expressed adamant resolve that violence witnessed as adolescents would not be handed down to their children. This supports research by Kaufman and Zigler (1987) on intergenerational violence who concluded that the experience of family violence as a child does not necessarily result in later abuse of one's own children. The experience of family violence as a child is not the primary focus, rather the resilience demonstrated by the adolescent experiencing such adversity and the healthy response to such adversity as an adult.

Kaufman and Zigler (1987) conclude that certain factors appear to influence the effects of family violence on adolescent and adult coping responses. For example, studies of parents whose families of origin were violent, but who did not abuse their own children suggest several factors: (a) more extensive social supports; (b) fewer ambivalent feelings about their children; (c) healthier children; (d) open anger about their earlier abuse; (e) better ability to give detailed accounts of those experiences; (f) likeliness to have been abused by only one of their parents; and (g) aptness to report a supportive relationship with one parent (Hunter & Kilstrom, 1979). Egeland, Jacobvitz and Stroufe (1988) reported that parents who did not abuse their children, despite experiencing abuse in their family of origin, were more likely to be involved in an emotionally supportive relationship with their partner and resolved not to repeat the pattern of abuse with their own children. One can conclude that a history of abuse experienced by children and adolescents does not automatically mean they will grow into an abusive adult. Positive coping strategies can be encouraged by nurses working

with teens and their families in a variety of adverse conditions, including violence, to promote positive self-care behaviors.

Studies have shown that being resilient is not equivalent to being happy and secure. Children displaying resilience in their desire to offer protection and nurturing to their mothers and younger siblings may stay at home with the violence when they could leave (Jaffe, 1990). By trying to protect their mothers and younger siblings and to calm their fathers' anger, they generate cross-generation coalitions that violate the integrity of both the spouse and child systems. The resilient child is put in the position of having to mature more quickly and take on added responsibility within the family than is developmentally appropriate (Barnett, 1989). Despite these difficulties, some children show resilience in terms of functioning well academically and with peers (Jaffe, 1990). Turning to schoolwork and peers provides an avenue of day-to-day escape and can lay the groundwork for future life success. These coping strategies can be encouraged in settings where the adversity faced by the adolescent is not of a violent nature, but significantly impacts the ability for healthy self-care behaviors. An example of this may include a family setting where alcohol, drugs, and/or illegal activities are parental behaviors faced by the teen.

Parental/Adult Influences

What lessons might children learn from their parent's childhood abuse that could encourage the development of resilient abilities? Some abused women continue to be nurturing parents (Jaffe, 1990) and researchers have underscored the potency of strong emotional support from a nonabusive adult in aiding resilience (Egeland, Jacobvitz, & Stroufe, 1988; Kaufman & Ziegler, 1987; Masten et al., 1990).

Garbarino, et al. (1992) hypothesized that the ability of the mother to provide a strong, nurturing adult role model who can give meaning to the violent events might provide a positive cognitive accommodation, thus generating resilience in the child. Alternatively, while parents involved in marital conflicts may possess decreased parenting skills, children with natural competencies and feelings of self-worth can accommodate for the decreased parenting skills (Emery, 1982). Jaffe (1990) reported that older girls may be especially likely to try to protect their younger siblings during episodes of violence and to offer nurturing behaviors at the end of these episodes of violence. The child can learn that respect and love from mothers and younger siblings can be gained through these supportive, nurturing relationships. These findings might also be applicable to children in an environment where abuse is not the main focus, but a chronic illness, disability or disease impacts the parental role and the adolescent becomes the family provider of care to younger siblings.

Children may see their parents' problem solving and communication patterns as ineffectual: their fathers explode and their mothers focus on survival of, rather than escape from, the violence (Walker, 1984). Relationships with supportive adults and peers outside the family provide children with concrete evidence that rewarding relationships exist and that people can be available to them in time of need (Egeland et al., 1988). For adolescents who have the capacity for abstract reasoning, these experiences allow them to imagine and test relationship patterns different from their parents. Finally, through observations of the negative effects of violence on family members, children can make conscious decisions about differences in their own future family lives (Egeland et al., 1988).

Research also indicates that resilience can be engendered in children who do not have that quality. There are examples in which a parent, teacher, or relative has taught a child to appreciate his or her strengths, to become more adaptable, and to face challenges (Egeland et al., 1993; Rutter, 1990). In other circumstances, an adult has helped a child to learn resilience simply by setting a good example, regardless of risk conditions, consistently highlighting the importance of supportive caregiving in the protective process (Cicchetti & Garmezy, 1993; Egeland et al., 1993; Rutter, 1990). What remains uncertain in the literature are resilience abilities that promote healthy self-care behaviors in adolescents and the inter-relationship among resilience abilities, perceived health status, perceived self-efficacy, self-care agency and self-care practices.

Limitations in Resilience Research

Study findings must be interpreted in light of certain limitations. Selection of articles for review by Garmezy (1981) were conducted through a meta-analysis in which the literature itself became the database. Conceptual articles are becoming dated, yet when one looks for the historical significance, a review of all works is necessary.

Qualitative methods have been the choice of researchers in studying resilience since the lack of standardized and validated tools has limited the use of quantitative research. Lindenburg et al., (1994) used preliminary research with seven Hispanic women to explore resilience as prevention in substance abuse. The study findings must be cautiously viewed with no generalizations in light of the small, unrepresentative nature of the sample. Use of a focus group method in this study may

lead to possible social desirability bias and reactivity as a common threat to its validity. The potential for such bias is enhanced by the sensitive nature of the topic under investigation, substance abuse. Can generalizations be made from research on resilience that suggests that its role is the same whether the focus is on the prevention of substance abuse or violence, coping mechanisms in chronic or debilitating diseases, or in health-risk behaviors of adolescents? Further research is warranted focused on resilience because of its implications on health.

Studies of resilience must proceed cautiously because of difficulty with distinguishing between factors that are associated with good and poor outcomes but with no causal significance. The assumption of risk exposure may be faulty. An example may be that a child whose mother was depressed will not necessarily exhibit poor quality care-giving as an adult. Depression by the mother may be situationally based, or the child may not have inherited a genetic predisposition for depression. In such a case, the child would be better classified as low-risk rather than resilient (Cicchetti & Garmezy, 1993). Research involving resilience must provide careful evaluation of contextual factors.

Dyer and McGuinness (1996) convey that " a major limitation of studying resilience is that it is inexorably linked to normative judgements relating to particular outcomes" (p.281). Researchers who have assumed what is desirable and undesirable based on Western thought, limit the variable findings when researching concepts of resilience in other cultures. Werner (1993) states that the focus of resilience has been placed on the development of children who live in industrialized societies where they spend 10 plus years in education and are more prepared for entry into a world that

values inquisitiveness, assertiveness, and mobility. Risk factors that challenge the resilience of children from around the world are variable and Werner (1993) warns against generalizing too easily on the basis of studies that are conducted in a Western dominant culture.

Hunter's and Chandler's pilot study (1999) suggests the possibility that resilience exists along a lesser to greater continuum and questions whether resilience is really a healthy state, requiring similar interventions for both "resilient" and "vulnerable" adolescents. This small pilot study conducted in a vocational high school in New England demonstrates that current instruments available in the literature cannot adequately allow investigators to assess the phenomena of resilience, especially resilience in adolescents. Current instruments "do not allow investigators to determine potentially maladaptive and psychopathologic responses pervasive in this culture" (p. 246).

Nursing studies have investigated perceived health status, perceived self-efficacy, self-care agency, and self-care health practices of adolescents (James, 1990; Pender, 1987; Rakowski, 1986) but have not addressed the factor of resilience abilities and how this might be related to positive health promotion in adolescents.

Perceived Health Status

Perceived health status is an individual's subjective assessment of current and prior health, health outlook, resistance to illness, and general health worries or concerns (Davies and Ware, 1981). Rakowski (1986) proposed that health-related variables, such as perceived health status would provide a powerful explanation of positive health practices in adolescents. This perspective is supported by Tessler and

Mechanic (1978) who state that perceived health status is an index of an individual's total sense of well being.

Several studies examined the relationship of perceived health status to self-care practices in adolescents. Health status that is perceived as good is correlated more highly with frequency of health-promoting behaviors and life satisfaction than health status perceived to be poor (Pender, 1987). Pender (1987) proposed a relationship between perceived health status and health promotion behavior, such as the enactment of positive health practices. She explained that "feeling good" may be a source of motivation for health related actions. James (1990) identified the relationship of perceived health status with self-care agency and self-care practices in a study with obese adolescents and found a positive correlation. Adolescents who reported higher levels of self-care agency and reported more self-care practices tended to perceive themselves to be healthier than adolescents who reported lower levels of health.

Yarcheski, Mahon and Yarcheski (1997) studied and tested two alternate models of positive health practices in adolescents. In one model, future time perspective as proposed by Rakowski (1986) was studied as a motivator of positive health practices, especially in younger individuals whose sense of the future tends to be smaller than that of older individuals. In the other model, Yarcheski and Mahon (1989) added perceived health status as a variable to the modified theoretical formulation. The sample consisted of 202 adolescents aged 15 to 21 in classroom settings with the General Health Rating Index (GHRI) used to measure perceived health status. Additional information concerning the GHRI is presented later in the

methodology section. Descriptive statistics for the variable of perceived health status were tested using the Lisrel 7 program which is considered a more powerful approach to testing causal models than multiple regression. In this study when adolescents experience greater degrees of self-esteem, perceived health status takes on greater internal psychological significance, and thus "feeling good" contributes, in turn, to their practice of positive health behaviors. Recognition of adolescents' perceived health status and the inter-relationships among adolescents' resilience abilities, perceived self-efficacy, self-care agency and self-care practices have not been studied.

Perceived Self-Efficacy

Self-efficacy is an important component in helping adolescents establish and maintain healthy behaviors through a period of rapid development as new competency requirements and challenges present themselves. This may be referred to as coping efficacy (Bandura, 1997) and may play a key role in adolescent decision-making. As adolescents expand the nature and scope of their activities into the larger social community, they have to assume increasing responsibilities.

The passage through adolescence to adulthood has become riskier than it was in the past, especially for youth growing up in a culture where substance abuse, unprotected sexuality, sexual abuse, delinquency and violent activities can seriously jeopardize realization of successful development (Bandura, 1997). While the literature discusses self-efficacy as important for adolescents to choose behaviors that positively move them through the period of transition to adulthood, it fails to discuss

the positive health practices of adolescents and what relationships exist among self-care efficacy, resilience, self-care agency or self-care practices.

Inclusion of self-care efficacy in the design of the present study is supported in the literature by Barnett (1989) and represents the only study reported in the literature using a health promotion framework. Barnett (1989) reported perceived self-efficacy to be the best indicator of health promotion behaviors for early, middle, and late adolescents. Through regression analysis, Barnett found that the higher the adolescent's perceived self-efficacy, the greater the number of health habits the adolescent is likely to perform, especially in the middle to late periods of adolescence. The strength of the four-predictor variables (health value, perceived health status, definition of health, and perceived self-efficacy) were measured using a multiple regression analysis to explain health promotional behaviors. In this analysis, only perceived self-efficacy was consistently predictive of health promoting behaviors in each age group with 8, 30 and 31 percent variance respectively.

James (1990) found a positive relationship between perceived self-efficacy as an independent variable and self-care practice in a study with obese adolescents. Findings in this study indicated that obese adolescents with higher perceived self-efficacy tend to be more effective self-care agents, while those with higher perceived health status, perceived self-efficacy and self-care agency tend to engage in more self-care practices, and that these characteristics need to be fostered in an integrated way.

The relationship of perceived self-efficacy to positive health practices, self-care agency and the independent variables noted in this study has not been reported to

date. Further research is warranted to determine the relationship between perceived self-efficacy and self-care agency and practices in adolescents to fully explain resilience to adversity in an adolescent's development.

Self-Care Agency

Denyes (1980) developed an instrument to measure self-care agency in adolescents as a doctoral dissertation and later used this instrument with a sample of students in junior and senior high school to explore the relationships among basic conditioning factors described by Orem (1985), self-care agency, self-care practices and health. Data obtained in this descriptive-correlational design found the absence of health problems was positively correlated with self-care agency (r = .12, p = .018), while correlations between basic conditioning factors of age, gender, educational level, birth order, and self-care agency and self-care practices were not significant. A stronger correlation was noted between self-care agency and self-care practice scores (r = .38, p = .000). Multiple regression analysis was applied with self-care agency a significant predictor of self-care practices (B = .384, p = <.001) reporting 14.7 percent of the variance.

A recent study measuring self-care agency among Japanese nursing students (Yamashita, 1998) used Orem's (1980, 1991) theory of self-care as a framework to determine the extent to which nursing students in Japan exercise self-care agency. An instrument to measure self-care agency developed by Kearney and Fleischer (1979) was translated from English to Japanese and administered to a convenience sample of two groups of students (N = 461) enrolled in nursing and early childhood education. The results were compared to those from studies in the United States and Sweden in

which the same instrument was administered to nursing students. Further analysis found that nursing students in Japan scored the lowest when compared to students from the United States and Sweden. One may conjecture that the nursing curricula in Japan based on the medical model may be the probable reason, but additional international research is warranted. Yamishita (1998) discusses health professionals use of the word *self-care* in Japan as compared to those in North America and states "self-care has been interpreted as compliance with a medical regimen, thus defined and imposed, as opposed to a grassroots approach" (p. 372), and the definition of self-care in Japan has not been consistent. Further research is needed to describe, account for, interpret, and predict what is known to be self-care practice in a society, with specific consideration of contextual factors.

Selecting self-care agency as an intermediate variable is further supported in the literature by Gaunt and Kieckhefer (1988), who used a descriptive cross-sectional design to describe the relationship between self-care agency and self-care practices in a sample of adolescents (N = 51), ages 11-20 who had diabetes, asthma, and /or convulsive disorders. These adolescents volunteered to complete the DSCAI and DSCPI in which all self-care agency factors were found to have a positive correlation with self-care practices. An additional study by James (1990) found self-care agency and perceived health status as the strongest predictor of self-care practices in a study with obese adolescents. This finding supports Denyes (1988) research finding that self-care agency was a significant predictor of self-care practices of adolescents and further supports the use of Orem's model of self-care to explore the relationships of self-care agency and self-care practices in adolescents. By investigating these

relationships, it is possible that health promotion intervention with adolescents who experience various adversities may become a principal strategy in primary prevention.

Self-Care Practices

A recent descriptive study assessed self-care practices and exposure to violence using a sample of 161 African American 10th grade students in the high school of a small city near a larger metropolitan area in a southeastern state (Cull, 1996). Orem's (1991) self-care theory served as the primary conceptual framework for this study. To provide additional guidance in the area of environmental influences on the adolescent, Bronfenbrenner's (1986) model of ecology of human development was used. Three questionnaires were used to collect information on exposure to violence, self-care practices and subject information. Findings regarding self-care practices of adolescents were significant with the mean scores on each of the 18 items on the DSCPI ranging from 33.8% to 86.2%. The self-care item that had the lowest mean score (33.8%) asked what percentage of time the adolescent ate a balanced diet. The item on the DSCPI with the highest mean (86.2%) asked adolescents what percentage of the time they do things to keep themselves safe.

Multiple regression was used to examine the effects of the study variables on the self-care practices of adolescents. The variables were categorized into four areas included in Orem's basic conditioning factors: sociodemographic factors, family system factors, availability and adequacy of resources, and environmental factors. When the "victim of violence scale" and the "witness of violence scale" were entered into the equation, neither was found to be statistically significant. These data support

the conclusion that a victim of violence has a substantively important negative effect on the self-care practices of adolescents. The self-care practices of adolescents were not influenced by witnessing violent events.

After multiple regression analysis, there were four statistically significant variables (age, gender, presence of health problems, and church attendance) and two variables with substantive importance (father's education and victim of violence scale). The age variable was statistically significant; as the age increased, the self-care practices decreased. Consistent with previous research, males in this sample carried out more self-care practices than females and those without health problems carried out more self-care than those with health problems (Denyes, 1988). Although exposure to violence and self-care practices was explored, further research is needed to examine the relationship between perceived self-care, self-care agency and self-care practices of adolescents.

Summary

This discussion has considered the literature most relevant to an important clinical concern about resilience and self-care in adolescents. The literature supports the inclusion of the independent variables (perceived health, perceived self-efficacy, resilience abilities); interdependent variable (self-care agency); and the dependent variable (self-care practices) in this study design. Results of adolescent studies support the assumption that self-care behaviors are critical for positive health and well being and adolescents have the potential to develop healthy behaviors and skills to be motivated toward self-care. In addition, basic conditioning factors (perceived

health status, perceived self-efficacy, and resilience abilities) have not been studied in relationship to self-care agency and self-care practices in adolescents.

An integrated instrument available for studying the relationship between the basic conditioning factors stated above and the variables of self-care agency and self-care practices in adolescents is not available in the literature in nursing or related disciplines. Development and psychometric testing of such an instrument with a diverse population of adolescents could lead to a generally useful tool with culturally diverse teenagers.

Research focused on adolescent resilience has increased in the past five years. However, the specific processes and outcome variables require further study. This study which examined the inter-relationships among perceived health status, perceived self-efficacy, resilience abilities and self-care agency and self-care practices may lead to the eventual development of interventions that foster adolescent's resilience and health. Faced with numerous changes as they move through biological, cognitive, psychosocial, and sexual development, adolescents sometimes feel suspended between childhood and being an adult. Although their parents do not always make decisions for them, they are not ready for complete independence. These developmental transitions are often stressful, and young people need support to make healthy decisions. Health education and promotion from health care providers should focus on helping them help themselves and providing ways to inform and aid their choices. This research may add to the body of health promotion knowledge in adolescents.

CHAPTER III

METHODOLOGY

The design of this study, as well as methods used for implementation, are described in this chapter. The sample population, data collection instrument, data collection procedures, protection of human subject procedures, and the methods of data analysis are presented in a sequential format.

Design of the Study

A descriptive correlational design was employed to describe and examine the interrelationships among selected basic conditioning factors (perceived health status, perceived self-efficacy and resilience), self-care agency and self-care practices in a convenience sample of adolescents. This study was based on a nursing theoretical framework of Orem's theory of self-care (1980, 1985, 1991).

Correlation research attempts to determine whether, and to what degree, a relationship exists between two or more quantifiable variables (Huck & Cromier, 1996). The predictive strength of each basic conditioning factor in relation to the intermediate variable of self-care agency and dependent variable (self-care practices) was explored. However, it will not be possible to infer causality from this correlational design. Use of this design may facilitate the identification of hypothesis about causality for later studies (Burns & Grove, 1993).

Internal consistency reliability was evaluated through the use of Cronbach's alpha statistic in accord with the hypothesized conceptual schema (Figure 1). Pearson's product moment correlation (r) coefficients and their significance levels were examined to determine the intra-scale and inter-scale correlations.

Description of the Sample

The target population for this study was adolescents in San Diego County of Southern California. The sample was recruited through health care professionals and secondary school educators known by the investigator. Inclusion criteria included: (a) 13 – 18 years of age, (b) willingness as indicated by return of a participant signed assent, parent or guardian consent and a completed questionnaire. A sample of 100 participants was targeted based on Hinkle, Jurs, and Wiersman's (1998) recommendation of a sample size of 10, 20, or 30 subjects for each variable. Three independent variables (perceived health status, perceived self-efficacy, and resilience factors), one intermediate variable (self-care agency) plus one dependent variable (self-care practices) necessitated a sample size of 100 to be substantial.

Instrumentation

Demographic information including age, gender and ethnic background was requested and self-reported. An integrated SARAS-R questionnaire (see Appendix A) was developed, based on reliable and valid established tools, and completed to collect the data for this study. Items previously included in other scales can be used if they have been shown empirically to be good indicators of the concept (Hulin, Drasgow, & Parsons, 1983). Utilizing a climate assessment (Brodeur & Berry, 1999), questions from the established tools were selected using a matrix analysis. Questions from the established measures in each domain were examined for redundancy resulting in a final product that is a sequentially integrated questionnaire with 46 questions. This 46-item SARAS R contains 8 perceived health status items, 7 self-efficacy items, 12 resilience abilities items, 10 self-care agency items, and 9 self-care practice items.

Within a nursing theoretical framework, the following tested instruments were selected for this study and included in the matrix analysis for item selection: (a) General Health Rating Index (GHRI) to measure perceived health status (Davies & Ware, 1981), [questions 1-8]; (b) General Self-Efficacy Subscale (GSES) to measure perceived self-efficacy (Sherer et al., 1982), [questions 9-15]; (c) Solem Adolescent Resilience Abilities Scale (SARAS) to measure resilience abilities (Solem et al., 1999), [questions 16-27]; (d) Denyes Self-Care Practice Instrument (DSCPI) to measure self-care practices (Denyes, 1982), [questions 28-36] and (e) Denyes Self-Care Agency Instrument (DSCAI) to measure self-care agency (Denyes, 1982), [questions 37-46]. Permission to use selected items was granted by M.J. Denyes (personal communication, November, 2000).

General Health Rating Index (GHRI)

The GHRI is a 22 item, 5-point summated rating scale that measures perceived health status (PHS) (Davies & Ware, 1981). Scores can range from 22 to 110; higher scores indicate a more positive perception of health status. The development of the GHRI resulted from extensive work by Davies and Ware. Concurrent validity and construct validity using factor analysis have been established (Davies & Ware, 1981). Yarcheski, Mahon, and Yarcheski (1993) reported a coefficient alpha of .89 in a sample of 325 adolescents, 12 to 21 years of age, and Mahon (1994) reported an alpha of .90 in adolescents. Coefficient alpha of .88 was reported in a sample of 202 adolescents, 15 to 21 years of age by Yarcheski, Mahon & Yarcheski (1997).

General Self-Efficacy Subscale (GSES)

The GSES measures perceived self-efficacy (PSE). Developed by Sherer et al (1982), this sub-scale is used as a measure of general expectations of self-efficacy and is not connected to specific situations or behaviors. The GSES is a 19 item, 5-point Likert-type rating scale that focuses on three areas: (1) willingness to initiate behavior, (2) willingness to expend effort in completing the behavior, and (3) persistence in the face of adversity. Responses range from "strongly disagree" to "strongly agree". Scoring the subscale involves summing the responses 1 = strongly disagree to 5 = strongly agree to obtain a total score for each participant. The higher the score the greater self-efficacy is indicated. Scherer et al, (1982) reported a Cronback alpha reliability coefficient of .86 for the GSES with a sample of college students in an introductory psychology class.

Correlating GSES scores with other personality characteristics established construct validity and were statistically significant, p = <.0001. The positive correlations are reported: Marlowe-Crown Social Desirability Scale (Crown & Marlowe, 1964), r = .431; and Interpersonal Competency Scale (Holland & Baird, 1968), r = .451 with the negative correlation between the Internal – External Control Scale was predicted since low scores indicate an internal orientation and individuals with the internal locus of control are more likely to have high self-efficacy.

The GSES has been used with different age groups, including adolescents (Barnett, 1989). The reported Cronbach alpha reliabilities for the GSES were .80 with early adolescents and .85 with middle and late adolescents. The Cronbach alpha for the GSES in this study will be reported.

Solem Adolescent Resilience Abilities Scale Revised (SARAS R)

SARAS (Solem et al., 1999) is a 54 item theory driven, newly developed measure designed to expand domains of the resilience concept by six measurable dimensions of rebounding, surviving, and persevering with sub-scales of personal and interactive resources, named *anchoring forces*, which encompass each dimension. Retroductive triangulation (Quayhagen & Quayhagen, 1988) was used to develop this measure. The measure is rated on a 4-point Likert scale ranging from 1 (never) to 4 (always). Scores are summed to determine the degree of resilience abilities, with the higher number representing greater resilience. Pilot testing with a convenience sample of 47 adolescents revealed for each of the two subscales, personal and interactive resources, the mean inter-item correlation of .28 with item-total correlation of .35 - .68 and .35 - .76 respectively. Alpha coefficients of .91 and .92 respectively reconfirmed reliability for the two sub-scales. Since the total scale of 54 items also had acceptable psychometric properties, the scoring could allow for use of this measure as a single scale or two sub-scales.

Pearson's product-moment correlation was used to evaluate convergent validity of the SARAS with the Resilience Scale (RS) while the Self-esteem Scale (SES) was used to evaluate divergent validity. At .01 level of significance, the Interactive and Personal sub-scales correlated with the convergent measure of RS as predicted (r= .53 and r=. 64 respectively) and indicated similar constructs. At the .01 level of significance, the Interactive and Personal sub-scales correlated with the divergent measure of SES as predicted (r=. 24 and r=. 20 respectively), thus the data

demonstrated construct validation with both convergent and divergent measures (Solem et al., 1999).

The Resilience Scale developed by Wagnild and Young (1993) is a 25 – item measure, which asks participants to rate along a 7–Point Likert scale the extent to which they disagree (1) or agree (7) with each positively, stated self-description. Content for the RS came from a study of older women who had adapted successfully following a major life event (Wagnild & Young, 1990), with reliability and validity of the RS documented in a number of studies. The internal consistency reliability obtained in a number of studies ranged from a .76 to .91 for the total RS (Balwin et al., 1993). Test-retest reliability in a sample of pregnant and postpartum women ranged from .67 to .84 (p < .01) during pregnancy at 1,4,8 and 12 months postpartum (Killiam & Jarrett, 1993). Concurrent validity was demonstrated in various studies by obtaining significant correlations between the RS and measures of constructs that are theoretically linked with resilience, including morale, life satisfaction, stress, self-esteem, and health (Balwin et al., 1993; Wagnild & Young, 1990, 1993).

Rosenberg (1965) developed the SES, a 10-item measure of self-esteem for a study of high school students to be brief (for ease of administration) and unidimensional. The original sample produced a coefficient of .92 with repeated internal consistency coefficients of .74 to .77. The 10 items are scored along a continuum from 1 (strongly agree) to 4 (strongly disagree). Robinson, Shaver and Wrightsman (1991) cite numerous studies in which considerable psychometric testing of the SES has been conducted with Cronbach's alphas ranging from .77 to .88. Robinson and colleagues discuss the use of the SES as a standard against which new

measures are evaluated due to documented test-retest reliability, convergent validity, and discriminate validity.

Denyes Self-Care Agency Instrument (DSCAI)

An instrument used to measure self-care agency in adolescents is the DSCAI based on Orem's self-care model. The instrument contains six subscales developed by factor analysis and include: (a) ego strength and decision making, (b) relative valuing of health, (c) health knowledge and health decision-making experience, (d) physical energy levels, (e) feelings, and (f) attention to health. Participants rate the statement between 0, which indicate "none" or "not at all" or "nothing" to 100, which indicate "everything". The scores are summed for data analysis and obtained by computing the mear scores for items within each subscale and then adding the mean scores. A higher score reflects a greater degree of self-care capability.

Internal consistency (r = .80 to .83 subscales) and reliability of the Denyes Self-Care Agency Instrument were demonstrated originally by Denyes (1980, 1982). Additional evidence of reliability has been demonstrated in numerous studies with adolescents and adults, both healthy and chronically ill (Campbell, 1981; Denyes, 1982; Humphreys, 1997). Alpha coefficients for the six subscales have fallen between .70 and .90; total scale reliabilities have been between .86 and .90. Content and construct validity was demonstrated initially by Denyes (1980,1982) with additional support for the construct validity cited in the preceding studies. Correlations of predicted strength and direction have been reported with measures of such constructs as self-esteem, physical symptoms, health-problem-solving ability, and health behavior.

Denyes Self-Care Practice Instrument (DSCPI)

DSCPI is a 17 – item instrument scored from 0 to 100 like the DSCAI, and reflects the time the participant carries out specific self-care practices (SCP), with test-retest reliability coefficient of .85. The scale was used primarily with adolescents in order to collect data concerning their general self-care actions. Based on Orem's self-care theory (1985) the data from this instrument provides a self-care practice score. Subsequent studies yielded alpha coefficients ranging from .84 to .92 for the self-care practice instrument. As discussed previously in Chapter 2, Cull (1996) used a multiple regression analysis to measure the assessed characteristic by selecting predictor variables that have a high correlation with the criterion variable, but have low correlations among themselves in order to maximize R squared. When R squared is explored it refers to the proportion of variance in the criterion variable than can be attributed to the variance of the combined predictor variables. Using the F test as a statistical measurement in each subsequent block compared R squared with the previous block.

Protection of Human Subjects

The study proposal was submitted to the University of San Diego's Committee on the Protection of Human Subjects for approval. Minor modifications were identified and the proposal was resubmitted and approved pending modifications (See Appendix B) prior to data collection. The protection of human subject's procedures was followed throughout the study.

Research Methodology

Subject population

One hundred adolescent participants from 13 to 18 years of age were recruited as a convenience sample through designated health professionals and secondary educators known by the researcher. If an interest was expressed, parents or legal guardians were given a number to call to contact the investigator for further information. The participants were required to speak, read and understand the English language.

Facilities

No formal clinical facilities were used for this study. The study was conducted in the private home of the participants or a neutral setting such as the community library or church community center. Parents/guardians were instructed that children would complete the questionnaire in private with no coaching from the adult and that each answer was confidential.

Research procedure or protocol

The adolescents and their parent or legal guardian had the study and informed consents (Appendix C and D) explained to them orally by the researcher. Questions were encouraged and answered by the researcher. If the adolescent and the parent/legal guardian agreed to participate, both the adolescent and his/her parent or legal guardian signed the assents/consents. The assents/consents were retained separately with no identifying numbers on them for the purpose of confidentiality. All records were placed in a locked file. Only the investigator had access to these materials. All materials will be destroyed within five years of data collection.

Each participant was given an envelope containing the assent form and the SARAS R questionnaire. The adolescent was provided with verbal instructions on completing the questionnaire. The participant was encouraged to give the answer that best fit he/she from the choices given and encouraged to answer all items, even if some items seemed similar. Adolescents were asked to complete the assent and questionnaire and return them to the researcher in a stamped, self-addressed envelope if they did not complete the questionnaire at the time of the instruction. The questionnaire was completed on a Scantron, thus eliminating the need for coding prior to entry into the SPSS program used for statistical analysis.

Subject's risks/benefits

Potential risks. Participant risk was anticipated to be minimal since the measurement involved no invasive procedures and precluded the possibility of physical harm. There was minimal time required, approximately thirty minutes per participant, which reduced the potential fatigue factor. However, with adolescents who have a busy schedule of academic and recreational demands the time may have been perceived as lengthy. In the instructions for completing the SARAS R questionnaire participants were informed that there are no right or wrong answers, thereby minimizing the potential for psychological stress. Explanation of the confidential nature of the response was intended to decrease the participants' anticipated stress in completing the questionnaire. Participants were encouraged to report any discomfort in completing the questionnaire to the researcher and if the discomfort should be unusual, an appropriate medical and/or psychological referral would be made. No referrals were necessary with this study.

Risk management procedures. Informed assents were obtained from the participants as well as their parents or guardians prior to completion of the questionnaire. The consents were signed and retained separately to ensure participant's confidentiality. The participants were assured that they would not be identified in public reports by name or any other defining characteristics. Participants were instructed that they had the freedom to withdraw from this study at any time. None of the participants withdrew from the study once they began to complete the questionnaire.

Potential benefits. Selection to participate in this study may enhance the participant's feeling of self-worth and allow the adolescent to feel that their individual and independent responses to the questionnaire are valued by the researcher and may help other teens become healthier. Indirect benefit may include advancing general knowledge regarding health and individual coping skills for the participating teen. During the data collection, a number of participants said they were happy that they were asked to participate and many asked specific questions concerning their health after they had completed the questionnaire.

Risk/benefit ratio. The potential benefits to the participants appeared to outweigh the minimal potential risks involved in this study. Benefits to science may outweigh the potential risks by advancement of knowledge in the area of adolescent resilience for use by nurses and others in assisting youth to meet the challenges of life and to enhance their self-care abilities for health promotion and reduction of negative outcomes. During the data collection none of the participants reported feeling uncomfortable with the questionnaire.

Expense to subjects. The only expense to the participants was the time it took to complete the instruction, assent and questionnaire. The amount of time did not exceed 30 minutes with any participant.

Statistical Analysis.

The Statistical Package for the Social Sciences (SPSS, 1999) was used for completion of the correlation and multiple regression analysis to answer the research questions. Bivariate correlation (Pearson's product moment correlation or Pearson r) between each of the independent, intermediate and dependent variables was employed to determine if multicollinearity exists between or among any variables. Statistical significance was tested at the probability level of .05 level for all procedures with the r value between −1 and +1 indicating the degree of linear relationship between the variables (Burns & Grove, 1998). An interrelation matrix was used to present these findings.

Strength of the relationship between the independent variables (perceived health status, perceived self-efficacy, and resilience factors) and intermediate variable (self-care agency) is explored using Pearson r correlation. The relationship between the independent variable and dependent variable (self-care practices) used the same procedure.

Multiple regression analysis was used to examine the strength of the independent variables (perceived health status, perceived self-efficacy, and resilience factors) in predicting self-care agency and self-care practices of adolescents as participants. Since the ordering of independent variables has a strong theoretical base, general multiple regression is used rather than hierarchical regression. The output of

multiple regression is described by the beta weights and their significance level along

with the R squared or variance accounted for by the variables.

CHAPTER IV

PRESENTATION AND DISCUSSION OF FINDINGS

This chapter presents the results of the data analysis from this study. The data are presented in four sections. The first section provides a discussion of the revised SARAS questionnaire reliability. The second section provides an item by item description of the sample related to each demographic variable. Section three provides a descriptive comparison and interpretation of the study variables with the demographic variables (age, gender and ethnic background). Section four presents the inferential statistical analyses related to each of the research questions followed by interpretation of the statistical results, including a comparison of findings in this study with those of other researchers.

Instrument Reliability

Internal consistency reliability procedures were employed to investigate the preliminary reliability estimates of the revised SARAS measure (Waltz et al., 1991). Internal consistency reliability estimates the consistency of responses across the items within a measure. Cronbach's alpha for the revised SARAS was estimated by computing alpha coefficients for each scale and for the total scale to measure individual study variables. The study variables include perceived health status, perceived self-efficacy, resilience abilities, self-care agency and self-care practices. The items within each individual scale were selected based on literature review and through a matrix analysis. Each question had an inter-item correlation of at least .25 to be in included. Items within scales were eliminated due to redundancy, resulting in a 46 item sequentially integrated instrument, SARAS (see Appendix A).

Reliability Testing

 Total scale reliability. The Cronbach's alpha for the total SARAS was .84

which satisfies the criteria of coefficient alpha $\geq$ .70 according to Nunnally and

Bernstein (1994). Using this criterion, the total scale meets the acceptability

criterion, however three scales (PHS, PSE, SCP) fell slightly below the accepted

level and ranged from .59, .69, and .68 respectively. These three scales may be

slightly lower with this population than with the previous population that established

the initial reliabilities because of some yet unaccounted for relationships. Using a

Likert-type questionnaire where the five response options for each statement extend

from 1 (*strongly disagree*) to 5 (*strongly agree*) justified the use of this technique

(Huck & Cormier, 1996). Table 1 presents means, variance, standard deviations, and

coefficient alpha for the SARAS with respect to the five study variables.

Table 1

Means, Variance, Standard Deviations, and Reliability Coefficients for SARAS R

Scale	N	M	V	SD	Alpha
PHS	8	29.76	15.20	3.9	.59
PSE	7	25.48	14.40	3.7	.69
RA	12	47.11	25.05	5.0	.73
SCA	10	39.50	23.30	4.8	.79
SCP	9	34.26	32.42	5.7	.68
Total	46	175.91	275.38	16.59	.84

Note: PHS=Perceived Health Status., PSE=Perceived self-efficacy, RA=Resilience abilities,

SCA=Self-care Agency, SCP=Self-care Practice

The following discussion will address the findings for individual scales using

the correlation matrix results to examine inter-item correlation and Cronbach's alpha

to estimate the internal consistency reliability for the study variables:

Perceived health status. Coefficient alpha was .59 for the GHRI selected to

measure perceived health status. Correlation matrix analysis for questions 1-8 found

question 8, "My health is a concern in my life" weak with r values ranging from

.0042 to .1343. Inverted, the r value became weaker (r = -.3609 - .2063). Results

suggest that question 8 be eliminated from further testing with the anticipated alpha

increasing for the scale measuring perceived health status and total scale reliability.

All other questions selected for this scale were reliable.

Perceived self-efficacy. Coefficient alpha was .69 for the GSES selected to measure perceived self-efficacy. The alpha falls slightly below the accepted .70 with concern over questions 9, "When I make plans, I am certain that I can make them work" (r = .0114 to .2498) and question 12, "I avoid facing difficulties" (r=.0676 to .1593). Both questions 9 and 12 would be eliminated in further testing with the anticipated alpha increasing for the GSES items and the total scale reliability. All other questions selected for this scale were found to be reliable.

Resilience Abilities. Coefficient alpha was .73 for the items selected from the original SARAS instrument to measure resilience abilities. All twelve items met reliability criterion for this scale. Correlation matrix analysis revealed questions 18, "I am able to keep focused on my tasks", question 19, "I am able to talk to my family about my problems", question 25, "I am able to change my mind/decisions when I need to" and question 27, "I am able to depend on my own resources" to be the strongest indicators of resilience abilities. Values ranged from r = .3209, .4336, .3276 and .4608 respectively.

Self-care agency. Coefficient alpha was .79 for items selected from DSCAI selected to measure self-care agency. A Likert scale of 1 to 5, 1 being not at all to 5 being extremely knowledgeable represent the extent of knowledge the adolescent had about their body and health. All ten items met reliability with the strongest indicators of self-care agency revealed in the following questions: 39, "My knowledge about my body and how it works is..." (r=.5220), question 40, "My knowledge about what I eat and how it effects my health is..." (r=.6520), question 41, "My knowledge about how

physical exercise effects my health is..." (r=.5207), and question 42, "My knowledge about how sleep and rest effect my health is..." (r=.4837).

Self-care practice. Coefficient alpha fell slightly below the acceptable value at .68 for the DSCPI selected to measure self-care practice. Question 29, "A majority of the time, I follow through on decisions I make for my health" was found to be the weakest question with r values ranging from -.0336 to .3343. Elimination of this question in further testing should increase the individual scale to measure self-care practice and the overall total SARAS. Questions that demonstrated the greatest strength in measuring self-care practice were question 28, "A majority of the time I do things that are good for my health", question 30, "A majority of the time, I eat breakfast", question 33, "A majority of the time I have enough time alone for my health" and question 34, "A majority of the time I get a balance between time alone and time with others for my health". Analysis revealed r values of .4900, .3337, .5565, and .2652 respectively which suggest that these questions were strong indicators of self-care practice for this population.

Reliability of Subscales (Personal and Interactive Resources)

Alpha levels decreased to .65 for personal resources and .68 for interactive resources (*anchoring forces*) from the initial SARAS reliability alpha of .91 and .92 respectively. Differences in population in the two studies may account for the decreased alpha as some relationships may not be accounted for in the revised scale. Additionally, the original scale contained 25 questions in the personal resources subscale and 29 questions in the interactive subscale. Through a matrix analysis, six questions were selected with significant inter-item correlation for each of the two

subscales and within those subscales two questions each represented the dimensions of rebounding, surviving and persevering. A total of twelve questions represent the *anchoring forces*.

Personal Resources Subscale Reliability. Representing the personal resources rebounding dimension are question 16, "I am able to go on with life after a stressful event" (r=.2034 - .4133) and question 20, "I am able to spring back from disappointments" (r = .0560 - .3980). The stronger correlation is found in question 16 where adolescents are able to rebound after a stressful event to go on with life. The surviving dimension, represented by question 22, "I am able to confide to another adult other than my parent" (r = .0560 - .3533) and question 25, "I am able to change my mind/decisions when I need to" (r = .0560 - .4133) support flexibility and decision making as a stronger resilience indicator for the adolescent. Persevering demonstrates the strongest dimension with question 18, "I am able to keep focused on my tasks" (r = .2034 - .2633) and question 27, "I am able to depend on my own resources" (r = .2145 - .3222). Overall, perseverance is shown to be the strongest indicator of adolescent resilience abilities in this sample.

Interactive Resources Subscale Reliability. Coefficient alpha decreased to .69 from .92 in a previous study (Solem, et al, 1999). Questions 19 and 24 were selected through a matrix analysis to represent the rebounding dimension within the interactive subscale. Question 19, "I am able to talk to my family about my problems" and question 24, "I am able to seek out a friend to help solve a problem" both demonstrated strong reliability with r values .4058 and .3106 respectively. Adolescents gave the highest value to being able to talk with their family. Question

17, "I am able to confide in my friends" (r=.1658 - .5565) and question 26, "I am able to ask others for help" (r=.1166 -.4058) were selected to represent the surviving dimension and demonstrated a strong correlation. Persevering dimension is represented in question 21, "I am able to confide to another adult other than my parent" (r = .3260 - .5565), and question 23, "I am able to trust my friends" (r = .0586 - .3552).

The total instrument met criteria for internal consistency reliability, however further testing is intended to increase the coefficient alpha for the total scale through a larger sample and elimination of weaker questions in the separate scales described above.

Description of the Sample

In describing the sample population of this study, frequencies and descriptive statistics are reported for each demographic variable or characteristic. The sample size was N=100 adolescent boys and girls recruited from San Diego county of southern California.

Table 2 provides a summary description of the demographic characteristics of the participants, the number of respondents and number of missing respondents for each characteristic. This data provides an overview of the demographic data for this study. Each demographic variable is discussed individually.

Table 2

Summary Description of the Demographic Characteristics of Adolescents and the

Number of Respondents for each Characteristic

Variable	Valid	Missing
Age	100	0
Gender	99	1
Ethnic Background	100	0

Age

Table 3 provides a description of the demographic characteristic "age" of

adolescents using frequency. All 100 of the participants responded to this item on the

demographic portion of the questionnaire. Eight participants (8%) identified their age

as 13. Twelve participants (12%) identified their age as 14. Fifteen (15%) identified

their age as 15. Twenty-four participants (24%) identified their age as 16. Twenty-one

participants (21%) identified their age as 17. Twenty participants (21%) identified

their age as 18. The majority of the adolescents were in their middle to late teens.

Table 3

Description of Demographic characteristic Age of Adolescent Utilizing Frequency

	Age	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	13	8	8.0	8.0	8.0
	14	12	12.0	12.0	20.0
	15	15	15.0	15.0	35.0
	16	24	24.0	24.0	59.0
	17	21	21.0	21.0	80.0
	18	20	20.0	20.0	100.0
Total	---	100	100.0	100.0	

Gender

Table 4 provides a description of the demographic characteristic of "gender" of adolescents utilizing frequency. Ninety-nine of the participants responded to this item on the demographic portion of the questionnaire. Forty-eight participants (48%) identified their gender as male. Fifty-one participants (51%) identified their gender as female. Gender identification was missing on one questionnaire.

Table 4

Description of Demographic Characteristic of Gender of Adolescents Utilizing

Frequency

	Gender	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	48	48.0	48.5	48.5
	Female	51	51.0	51.5	100.0
	Total	99	99.0	100.0	
Missing	System	1	1.0		
Total	---	100	100.0		

Ethnic Background

Table 5 provides a description of the demographic variable of "ethnic

background" of adolescents using frequency. One hundred of the participants

responded to this item on the demographic portion of the questionnaire. Sixty-two of

the participants identified themselves as white (62%). Seven of the participants

identified themselves as Hispanic (7%). Six of the participants identified themselves

as Black (6%). Twenty of the participants (20%) identified themselves as

Asian/Pacific Islander. Five of the participants (5%) identified themselves as "Other"

which are unidentified.

Table 5

Description of Demographic Characteristic of Ethnic Background of Adolescents

Utilizing Frequency

	Gender	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	White	62	62.0	62.0	62.0
	Hispanic	7	7.0	7.0	69.0
	Black	6	6.0	6.0	75.0
	Asian/Pacific	20	20.0	20.0	95.0
	Other	5	5.0	5.0	100.0
	Total	100	100.0	100.0	

Descriptive and Inferential Analysis

Relationship between demographic variables of age, gender and ethnic background

Cross-tabulation was used with all forty-six questions in the total scale to determine the questions that were statistically significant with the demographic variables. To determine whether these differences were significant, independent Chi-Square tests were used to assess the relationship between the variables of age, gender and ethnic background. The statistical focus using percentages and Chi-Square tests are discussed for each of the demographic variables. Pearson Chi-Square values are

cited for the non-linear variables of gender and ethnic background. Linear-by-linear association values are discussed with the linear variable of age.

Age. Seven questions were statistically significant when all questions were cross-tabulated with age as the variable. In review of the relationship of age and perceived health status, question 5, "In the future I expect to have better health than other people I know" (x^2=6.14, *df*=1, p=.013) demonstrates as age increased adolescents expected their health to be better than other people they know. Data reviewed regarding the relationship of age and perceived self-efficacy revealed four questions (9,10,13,15) statistically significant (p< .05). Question 9, "When I make plans I am certain I can make them work" (x^2=6.52, *df*=1, p=.011) was significant. As age increased, adolescents believed when they made plans, they were sure they could make them work.. Question 10, "When unexpected problems occur, I don't handle them well"(x^2=3.89, *df*=1, p=.05) was significant. As age increased, more adolescents agreed that when unexpected problems occur, they did not handle them well. Question 13, "When I have something unpleasant to do I stick to it until I finish" (x^2= 11.45, *df*=1, p=.001) found as age increased adolescents agreed that when they have something unpleasant to do they stick to it until it is finished.

In review of the relationship between age and self-care agency, question 42, "My knowledge about how sleep and rest effect my health is..." (x^2= 7.91, *df*=1, p= .005) demonstrates as age increased, adolescents were more knowledgeable about how sleep and rest effects their health. Relationship between age and self-care practices, Question 34, "A majority of time I get a balance between time alone and time with others for my health" (x^2=.010, df=1,p> .05) demonstrates as age increased,

adolescents agreed that a majority of time they had a balance between time alone and time with others for their health The data is summarized in Table 6.

Gender. Cross-tabulation examined the relationship between gender and all questions using Pearson Chi-Square tests with four questions found to be statistically significant. In review of the relationship of perceived health status, there was more agreement by females that they have never been seriously ill, question 3, "I have never been seriously ill" (x^2=11.39, df=4, p=.02). Analyzing the relationship of gender and perceived self-efficacy, question 15, "Failure just makes me try harder" was statistically significant with more males in agreement that failure just made them try harder (x^2=12.77, df=4, p=.01). Review of resilience abilities found more females agreed that they were able to keep focused on their tasks, question 18, "I am able to keep focused on my tasks" (x^2=10.31, df=4, p=.03). Review of self-care practices found more females in agreement that a majority of time they do things to keep themselves safe, question 35, "A majority of time I do things to keep myself safe" (x^2=8.79, df=3, p=.03). The data was summarized in Table 6.

Ethnic Background. Relationship examination between ethnic background and resilience abilities using Pearson Chi-Square values finds two questions statistically significant. Question 17, "I am able to confide in my friends" (x^2=28.57, df=16, p=.02) finds adolescents in agreement that they could confide in their friends with the following percent within ethnic background: 77.4% (n=48) White, 83.3% (n=5) Hispanic, 50% (n=3) Black, 70% (n=14) Asian/Pacific, and 100% (n=5) Other. The total percent for question 17 is 82.9% (n=82). Question 27, "I am able to depend on my own resources" (x^2=15.83, df=12, p> .05) is significant with adolescents in

agreement they were able to depend on their own resources with the following

percent within ethnic background: 88.5% (n=54) White, 85.7% (n=6) Hispanic,

33.4% (n=2) Black, 80% (n=16) Asian/Pacific, and 80% (n=4) Other. The total

percent for question 27 is 82.9% (n=82).

One question was significant for the intermediate variable, self-care agency

and its relationship to ethnic background. Question 39, "My knowledge about my

body and how it works is..." found adolescents knowledgeable (x^2=15.83, df=8,

p=.04). Adolescents rated they were knowledgeable about their body and how it

works in the following percent related to ethnic background: 87.1% (n=54) White,

71.4% (n=5) Hispanic, 83.3% (n=5) Black, 55% (n=11) Asian-Pacific, and 100%

(n=5) Other. The total percent by ethnic background to agree that they were

knowledgeable about their body and how it works is 80% (n=80).

The dependent variable, self-care practices, found a strong relationship

between ethnic background and the majority of time that adolescents eat breakfast.

Question 30, "A majority of time, I eat breakfast" (x^2=41.36, df=16, p= .00), results

by ethnic background: 61.3% (n=38) White, 71.5% (n=5) Hispanic, 0% (n=0) Black,

55% (n=11) Asian/Pacific, and 20% (n=1) other. The total agreement that breakfast

was eaten a majority of the time was 55% (n=55). The data is summarized in Table 6.

Table 6

Demographic Variables Using Chi-Square, Degree of Freedom and Significance

Variable	Scale	Question	Value	df	Significance
Age	PHS	5	6.144	1	.013
	PSE	9	6.521	1	.011
	PSE	10	3.899	1	.048
	PSE	13	11.458	1	.001
	PSE	15	3.037	1	.081
	SCA	42	7.919	1	.005
	SCP	34	.010	1	.021
Gender	PHS	3	11.391	4	.023
	PSE	15	12.771	4	.012
	RA	18	10.319	4	.035
	SCP	35	8.793	3	.032
Ethnic	RA	17	28.576	16	.027
Background	RA	27	23.320	12	12.025
	SCA	39	15.836	8	.045
	SCP	30	41.363	16	.000

Note: PHS=Perceived health status, PSE=Perceived self-efficacy, RA=Resilience Abilities, SCA=Self-care agency, SCP=Self-care practices. All p values are two-sided, derived from Pearson's Chi Square and tested at .05 level.

Descriptive Analysis of Study Variables

In relation to each study variable, descriptive statistics were calculated using ranges, means, and standard deviations and presented in table 7 with scores from the perceived health status, perceived self-efficacy, resilience abilities, self-care agency and self-care practices scales. The following discussion highlights the high and low scores in each scale as represented in table 7:

Perceived health status

Adolescents in this study expect to have a very healthy life (M = 4.31, SD = .631) and are in agreement (84%) that they are as healthy as anyone they know (M = 4.09, SD = .805). They do, however, articulate general health worries or concerns as evident in response to question 7, "I never worry about my health" (M = 2.62, SD = 1.218), and question 3, "I have never been seriously ill" (M = 3.52, SD = 1.320). 28% of this population agreed they never worried about their health, indicating that a majority, 71% of adolescents in this study worry about their health.

Perceived self-efficacy

The belief of the individual's capacity to successfully perform a behavior to produce a desired outcome was highest with question 11, "If I can't do a job the first time, I keep trying until I can" (M = 3.98, SD = .778) and question 9, "When I make plans, I am certain I can make them work"(M= 3.85, SD = .757). Adolescents scored lowest with question 12, "I avoid facing difficulties" (M = 3.27, SD = 1.062) and question 14, "When I decide to do something, I go right to work on it" (M = 3.50, SD = .927).

Resilience Abilities

This study found that 91% of the population were in agreement that they were flexible as evident in question 25, "I am able to change my mind/decisions when I need to" (M = 4.11, SD = .567). Ability to trust was important to this population, evident in response to question 23, "I am able to trust my friends" (*M* = 4.22, *SD* = .824). The weakest response was questions 21, "I am able to confide in another adult other than my parent" (*M* = 3.54, *SD* = 1.043) and question 18, "I am able to keep focused on my tasks" (*M*= 3.67, *SD* = .937).

Self-care Agency

Adolescents were in strongest agreement concerning how smoking (*M* = 4.79, *SD* = .498) and physical exercise effects their health (*M* = 4.34, *SD* = .728). The weakest response was question 37, "When I don't take care of my health, it is usually because of a lack of information" (*M* = 2.62, *SD* = 1.013), and question 38, "When I fail to take care of myself it is due to fatigue" (*M* = 3.28, *SD* = 1.036). 56% of the sample were in agreement about how stress effects their health.

Self-care Practices

Adolescents were in agreement 91% of the time that they were doing things to keep safe. The strongest indicators of self-care practice were question 35, "A majority of time I do things to keep myself safe" (*M* = 4.21, *SD* = .624) and question 31, "A majority of time I get enough exercise to be healthy" (*M* = 4.00, *SD* = .979). The lowest indicators of self-care practices were question 32, "A majority of time I get

enough rest for my health" (M = 3.36, SD = 1.087) and question 30, "A majority of

time, I eat breakfast" (M = 3.47, SD = 1.446).

Table 7

Ranges, Means, and Standard Deviations of Study Variables by Scale

Scale Question	N	Range Minimum	Maximum	Mean	Standard Deviation
Perceived Health Status					
1	100	2	5	4.09	.805
3	100	1	5	3.52	1.320
6	100	2	5	4.31	.631
7	100	1	5	2.65	1.218
Perceived Self-Efficacy					
9	100	2	5	3.85	.757
11	100	2	5	3.98	.778
12	100	1	5	3.27	1.062
14	100	1	5	3.50	.927
Resilience Abilities					
18	99	1	5	3.67	.937
21	99	1	5	3.54	1.943
23	100	1	5	4.22	.824
25	100	2	5	4.11	.567
Self-Care Agency					
37	100	1	5	2.62	1.013

| 38 | 100 | 1 | 5 | 3.28 | 1.036 |
| 41 | 100 | 2 | 5 | 4.34 | .728 |

Table 7 (continued)

Scale	N	Range		Mean	Standard
Question		Minimum	Maximum		Deviation
43	100	1	5	4.79	.498

Self-care Practices

30	100	1	5	3.47	1.446
31	99	1	5	4.00	.979
32	100	1	5	3.36	1.087
35	100	2	5	4.21	.624

Data Analysis and Discussion Related to Research Questions

The major focus of this research was to describe the inter-relationships

between perceived health status, perceived self-efficacy, resilience abilities, self-care

agency and self-care practices and to what degree the independent variables predict

the self-care agency and self-care practices of teens. The results of the data analysis to

each research question are presented and discussed in the following section.

Research Question 1

What are the inter-relationships among perceived health status, perceived self-

efficacy, resilience abilities?

Pearson r correlation between each of the independent variables (perceived

health status, perceived self-efficacy, resilience abilities) were obtained using SPSS.

There were statistically significant, moderately positive correlations between each of the independent variables as predicted. Statistically significant (p< .05), moderately positive correlation was found between perceived health status and perceived self-efficacy. The strongest correlation was found when adolescents perceived their health as excellent and when they made plans, they made certain they could make them work (r= .40), avoided facing difficulties (r = .28), and when faced with something unpleasant to do, they stuck to it until they finished (r= .25). When teens perceived themselves to be as healthy as anyone they knew, the strongest correlation was also making certain their plans would work (r= .37). These findings are consistent with Yarcheski, Mahon and Yarcheski (1997) who found when adolescents experience greater degrees of self-confidence in their personal health, perceived health status takes on greater internal psychological significance and thus, "feeling good" contributes, in turn, to their practice of positive health behaviors.

Statistically significant (p< .05), moderate positive correlation was found between perceived health status and resilience abilities. When health was rated as excellent, the ability to change their mind/decisions when needed was significant (r= .21). When teens expected to have a very healthy life, the ability to change their mind/decisions when needed was the strongest indicator (r = .30), with the ability to keep focused on task (r= .26), and ability to depend on their own resources (r = .25), a positive factor. Although findings from Jacelon (1997) support the notion of being self-reliant, flexibile and dependent on their own resources, the need for social support of a caring adult outside the family structure was not supported.

A positive correlation was found between perceived self-efficacy and resilience abilities. When making plans and being certain they can make them work, teens rated the ability to talk to their family about their problems as the strongest indicator (r= .27, p< .05) followed by the ability to ask others for help (r= .24, p< .05). Significant (p< .05) positive correlation was also noted with resilience and a teen's ability to persevere. The strongest correlation between "If I can't do a job the first time, I keep trying until I can" was the ability to spring back from disappointments (r= .35) and the ability to go on with life after a stressful event (r= .38). Other significant (p< .05) factors of resilience noted are the ability to change their mind/decisions when needed (r= .26), ability to return to school after a personal trauma (r= .23) and the ability to depend on their own resources (r=. 21). The findings support research describing resilience as a dynamic process in which adolescents are able to successfully persevere or proceed with their lives after a personal trauma, rely on personal resources, and maintain a direction in one's life plan despite changes that are needed along the way (Dyer & McGuinness, 1996; Mangham et al., 1996). No previous studies explored the relationship of resilience abilities and self-efficacy for comparison.

Research Question 2

What are the inter-relationships among perceived health status, perceived self-efficacy, resilience abilities, and self-care agency of adolescents and their self-care practices?

Pearson r correlation between each of the independent variables and the intermediate variable (self-care agency) with the dependent variable (self-care

practices) were obtained. Statistically significant (p< .05) positive correlation was found for each scale. The strongest correlation noted for self-care agency with perceived health status were found with "I'm as healthy as anybody I know" and knowledge about how smoking effects their health (r= .35), and an awareness of sexuality (r= .36). When adolescents rated their health as excellent, significant items included knowledge they had about their health (r= .29), knowledge about how physical exercise affects health (r= .29), and knowledge about what they eat and how it effects their health (r= .29).

Findings related to perceived self-efficacy and self-care agency revealed a significant (p< .05) positive correlation. Adolescents rated their knowledge about how physical exercise affects their health as the strongest correlation (r= .41) with self-care efficacy. Strong correlation was also noted with knowledge about how stress effects their health (r= .39) and general knowledge about their health (r= .33). These findings concur with James (1990) who found that adolescents who scored higher on perceived health status tended to also score higher on self-care agency in a study with obese adolescents.

The relationship between resilience abilities and self-care agency also revealed a significant (p< .05) moderate positive correlation. Adolescents who were extremely knowledgeable about their body and how it works had the ability to depend on their own resources (r= .33), keep focused on their tasks (r= .28), and the ability to talk to their family about their problems (r= .29). Studies were not available to compare resilience and self-care agency in adolescents.

The dependent variable (self-care practice) found a positive correlation (p<

.05) with all other variables. Perceived health status yielded the highest correlation

among all variables. Adolescents that rated their health as excellent were engaged in

the following self-care practices: a majority of time they get enough exercise to be

healthy (r= .47), did things that were good for their health (r= .44), followed through

on decisions they made for their health (r= .33), balanced between time alone and

time with others for their health (r= .40), they did things to keep themselves safe (r=

.21).

These results concur with research findings of Pender (1987) who proposed a

relationship between perceived health status and health promotion behaviors. She

explained how "feeling good" may be a source of motivation for health related

practices. In addition, James (1990) identified a positive correlation between

perceived health status with self-care agency and self-care practices in a study with

obese adolescents. Adolescents in this study who reported higher levels of self-care

agency and reported more self-care practices perceived themselves to be healthier

than adolescents who reported lower levels of health.

Adolescent's belief that they were capable of taking care of self (perceived

self-efficacy) found the highest correlation when a majority of time they get a

balance between time alone and time with others for their health (r= .43, p< .05). A

positive correlation was also found with sticking with an unpleasant task to

completion and following through on decisions they make for their health (r= .34, p.

05). These findings concur with Barnett (1989) who reported perceived self-efficacy

to be the best indicator of health promotion behaviors for early, middle and late

adolescents. James (1990) found a positive relationship between perceived self-efficacy and self-care practice in a study with overweight adolescents. Findings indicated that obese adolescents with higher perceived self-efficacy and tended to be more effective self-care agents, while those with higher perceived health status, perceived self-efficacy and self-care agency tend to engage in more self-care practices.

Self-care practices have a significant (p< .05) positive relationship with resilience abilities. When adolescents initiate and perform behaviors on their own behalf for their health and well-being they rated the strongest resilience ability as the ability to change their mind/decisions when needed (r= .48). Other resilience indicators include ability to ask others for help (r= .34), ability to seek out a friend to help solve a problem (r= .33), ability to depend on their own resources (r= .34), ability to go on with life after a stressful event (r= .31), ability to confide in their friends (r= .30), ability to talk to their family about their problems (r= .29), ability to keep focused on their tasks (r= .25), and the ability to return to school after a personal trauma (r= .25). These findings are in contrast to the findings from a pilot study conducted by Hunter and Chandler (1999) that question whether resilience is really a healthy state. This small pilot study, conducted in a vocational high school in New England may vary significantly from the current study population who were not part of a vocational high school setting. In their study, "adolescents ranked themselves as *resilient* but believed that being resilient was to be disconnected from others because they could not trust, isolated because they had inadequate or no support systems, and insulated because the emotional pain was too much to bear" (p. 243).

Self-care practices also have a significant (p< .05) positive correlation with self-care agency. Adolescents that do things that are good for their health a majority of the time were very knowledgeable about the following effects on health: smoking (r= .37), exercise (r= .31), stress (r= .31), and what to eat and how it effects their health (r= .29). A positive correlation was found between knowledge about smoking and doing things to keep safe (r= .39, p< .05), and between how teens rated their awareness of sexuality and the balance between time alone and time with others for their health (r= .29, p< .05). The findings concur with Cull (1996) who assessed self-care practices in 161 adolescents and found correlation between knowledge of health factors and self-care practice to remain safe. The positive correlation between self-care agency and self-care practices also concurs with Denyes' (1988) and James (1990) results and adds empirical support to the theoretical relationship between these variables proposed by Orem.

Research question 3

To what degree do perceived health status, perceived self-efficacy and resilience abilities predict self-care agency in adolescents?

Multiple regression analysis was used to explore the ability of the independent variables (perceived health status, perceived self-efficacy, and resilience abilities) to collectively predict self-care agency. All three variables are found to be significant predictors of self-care agency with adjusted R square of .339. Table 8 presents the statistically significant predictor items for self-care agency. These findings are in contrast to the study conducted by James (1990) in which only perceived self-efficacy was found to be a significant predictor of self-care agency.

Table 8

Regression of PHS, PSE, and RA on Self-care Agency

Multiple R = .606[a] R Square = .368 Adjusted R Square = .339

Variable	B	Std. Error	Beta	t	p Value
PHS	.174	.058	.265	2.978	.004
PSE	.177	.055	.280	3.218	.002
PHS	.155	.057	.245	2.732	.008
RA	9.864	.042	.202	2.322	.023

Note: PHS (Perceived Health Status), PSE (Perceived Self-Efficacy), RA (Resilience Abilities).

a. Predictors: (Constant), In the future, I expect to have better health than other people I know, if I can't do a job the first time, I keep trying until I can, I'm as healthy as anybody I know, I am able to talk to my family about my problems.

p value = .05

Research question 4

To what degree do perceived health status, perceived self-efficacy, resilience abilities, and self-care agency predict adolescent self-care practices?

Multiple regression was utilized to explore the independent variables (perceived health status, perceived self-efficacy, resilience abilities) and self-care agency to collectively predict the dependent variable (self-care practice). Self-care practice was entered as the dependent variable. The method used a stepwise regression (Criteria: Probability-of-F-to-enter <=.050, Probability-of-F-to-remove>=.100). Table 9 shows the multiple R between the three predictor variables and self-care practices computed to be 0.558. The three variables taken together predict 31 per cent of the variance (R Square = .311). Both perceived health status (B = .243, p = .002) and resilience abilities (B = .294, p = .005) were found to be the

strongest predictors of self-care practices. These findings did not support Denyes'

(1988) finding that self-care agency was a significant predictor of self-care practices

of adolescents or James (1990) research finding that perceived health status and self-

care agency were the strongest predictors of self-care practices.

Table 9

Regression of PHS, RA on Self-Care Practices

Multiple R =.558[a]		R Square = .311		Adjusted R Square = .288	
Variable	B	STd. Error	Beta	t	p Value
RA	.294	.103	.266	2.856	.005
PHS	.243	.075	.294	3.230	.002
RA	.164	.063	.241	2.619	.010

Note: PHS (Perceived Health Status), RA (Resilience Abilities)

a.Predictors: (Constant), I am able to change my mind/decisions when I need to, My health is excellent, I am able to keep focused on my tasks

p value <= 0.50

Additional regression analysis was utilized to determine the predictive

strength of each independent variable in relation to self-care agency and self-care

practice. Self-care agency was entered as the dependent variable. Stepwise regression

criteria employed the probability-of-F-to-enter <=.050. One resilience item, "I am

able to depend on my own resources" was a significant (p< .007) predictor to self-

care agency in this model, explaining seven percent (R Squared = .073) of the

variance when all other items are excluded. Table 10 presents the ANOVA results for

regression of all items to self-care agency.

When self-care practices was entered as the dependent variable, one resilience

item, "I am able to ask others for help" was a significant (p = .025) predictor of self-

care practice. This item explained five percent of the variance (R Square = .053). The

results of the regression ANOVA when all items are entered with self-care practices

as the dependent variable is presented in Table 11.

Table 10

Regression ANOVA of All Items on Self-Care Agency (N=100)

R = .271[a]			df	F	p Value
R-Square = .073		Regression	1	7.500	.007[a]
Variable	B	Std. Error	Beta	t	p Value
RA	.174	.063	.271	2.739	.007

a. Predictors: (Constant), I am able to depend on my own resources

b. Dependent Variable: Self-Care Agency

Table 11

Regression ANOVA of All Items on Self-Care Practices (N=100)

R = .229			df	F	p Value
R-Square = .053		Regression	1	5.210	.025[a]
Variable	B	Std. Error	Beta	t	p Value
RA	.168	.074	.229	2.283	.025

a. Predictors: (Constant), I am able to ask others for help

b. Dependent Variable: Self-Care Practices

Together the two variables (perceived health status, resilience abilities) were

found to contribute 43 percent of the variance in self-care practices and this was

found to be statistically significant ($p < .05$). The other two independent variables (perceived self-efficacy, self-care agency) were not found to predict significantly to the outcome variable, self-care practice.

Summary of Findings

A demographic profile revealed the sample mean age was 16 years and predominately white (62%) with other ethnic backgrounds represented as Hispanic (7%), Black (6%), Asian/Pacific (20%), and Other (5%). Cross-tabulation was used with the total scale to determine significant ($p < .05$) differences with demographic variables. Age was a significant finding with perceived health status, perceived self-efficacy, self-care agency and self-care practices. Seven items were statistically significant with age as the variable as follows: As age increased, adolescents agreed (a) their health would be better than others, (b) when they made plans, they were sure they could make them work, (c) when unexpected problems occur, they did not handle them well, (d) when they have something unpleasant to do, they stick to it (e) they were more knowledgeable about how sleep and rest effects their health, (f) a majority of time they had a balance between time alone and time with others for their health. Resilience abilities were not significant with age as a variable.

With gender as a variable, significant findings ($p < .05$) revealed females agreed they had never been seriously ill, were able to keep focused on their tasks, and a majority of time they do things to keep themselves safe. Males agreed that failure just made them try harder.

Relationship examination between ethnic background and study variables found two resilience items statistically significant. Adolescents agreed they could

confide in their friends and depend on their own resources. Findings also revealed adolescents were knowledgeable about their body and how it works. One self-care practice item was significant with only 55% of adolescents in agreement that they ate breakfast a majority of the time.

In relation to each study variable, descriptive statistics were calculated using ranges, means, and standard deviations. Findings revealed adolescents expect to have a very healthy life and are in agreement that they are as healthy as anyone they know, however, seventy-one percent of the sample worry about their health. Adolescents rated their perceived self-efficacy highest, if they can't do a job the first time, they keep trying until they can and the lowest, they avoid facing difficulties. Ninety-one percent of the study sample was in agreement that they were flexible, and the ability to trust was important. The weakest response was in the ability to confide in another adult other than their parent, a contrast to a previous study (Jacelon, 1997). In relation to self-care agency, adolescents were in strongest agreement concerning how smoking and physical exercise affects their health. The weakest response indicated when adolescents didn't take care of themselves, it was not related to lack of information or due to fatigue. The strongest indicators of self-care practices found 91% of adolescents engaged in activities to keep safe and getting enough exercise to be healthy. The lowest indicators were evident in the amount of time adolescents got enough rest and ate breakfast which is comparable to previous research (Cull, 1996).

In regard to the first research question, statistically significant ($p<.05$) positive relationships were found between perceived health status ($r=.25 - .40$),

perceived health efficacy (r = .21 - .38), and resilience abilities (r= .21 - .30). No statistically significant inverse relationships were found.

In relation to the second research question, statistically significant (p< .05), positive relationships were found between all variables with the dependent variable (self-care practices). Perceived health status yielded the highest correlation among all variables, which concurs with James (1990) research with obese adolescents. Adolescents that rated their health as excellent were engaged in the highest number of self-care practices with the majority of time getting enough exercise to be healthy (r= .47) as the highest indicator followed by balancing time alone and time with others (r= .40).

Relationship review between resilience abilities and self-care practices yields a positive correlation, which is a new research finding. When adolescents initiate and perform behaviors on their own behalf for their health they rated the strongest resilience indicators as the ability to change their mind/decisions when needed (r= .48), the ability to ask others for help (r= .34), and the ability to depend on their own resources (r= .34).

In regard to the third research question, all three independent variables collectively are found to be significant predictors of self-care agency, explaining 33 percent of the outcome variance, with the following items constant predictors: (a) In the future, I expect to have better health than other people I know, (b) If I can't do the job the first time, I keep trying until I can, (c) I'm as healthy as anybody I know, and (d) I am able to talk to my family about my problems. This finding provides support for other research (Barnett, 1989; James, 1990) regarding the influence of

perceived self-efficacy and perceived health status on health behaviors as significant factors to self-care agency.

In relation to the fourth question, when self-care practice is entered as the dependent variable with the four predictor variables, new findings are generated with this study. Unlike previous studies where self-care agency was a significant predictor (Denyes, 1988; Gaunt & Kieckhefer, 1988; James, 1990), that was not found in this study. Instead, both perceived health status (B = .243, p = .002) and resilience abilities (B = .294, p = .005) were found to be the strongest predictors of self-care practice.

Additional regression analysis was utilized to determine the predictive strength of each independent variable in relation to self-care agency and self care practice. One resilience item, *I am able to depend on my own resources* was a significant (p< .007) predictor to self-care agency in this model, explaining seven percent of the variance when all items are excluded. One resilience item, *I am able to ask others for help,* was a significant (p< .025) predictor of self-care practice.

Instrument (SARAS R) Reliability

The Chronbach's alpha for the total SARAS R was .84 which satisfies the criteria of coefficient alpha ≥ .70 (Nunnally & Bernstein, 1994), which indicates the consistency of responses across the items within the measure. This finding is salient, since the literature reveals the lack of a standardized and valid instrument to measure resilience in adolescents.

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CHAPTER V

CONCLUSIONS, IMPLICATIONS AND RECOMMENDATIONS

This chapter includes conclusions, implications for nursing practice, education, administration, and recommendations for further research.

Research Conclusions

These findings are significant for nursing as they add new knowledge regarding resilience and self-care practices for adolescents and support Orem's theory of self-care and findings from other studies (Barnett, 1989; Denyes, 1988; James, 1990) including relationship between perceived health status, perceived self-efficacy and self-care practices (Barnett, 1989; James, 1990), and relationship of self-care agency and self-care practices (Denyes, (1988).

The five study variables (perceived health status, perceived self-efficacy, resilience abilities, self-care agency and self-care practice) had not been included in prior research with adolescents. The inter-relationships discovered in this study add to the knowledge of how these independent factors can influence self-care agency and self-care practice in adolescents and what predictive factors may be significant in work with adolescents.

Review of the literature revealed that nursing research concerning the phenomenon of adolescent resilience is limited and no published instrument exists for measurement. Studies have been conducted to examine the inter-relationships of basic conditioning factors of perceived health status and perceived self-efficacy and their collective predictive effect on self-care agency and self-care practices of adolescents. However, these studies have failed to include resilience abilities to examine

individual strengths during the challenging stage of adolescence. The results of this study provide additional insight into the relationships of basic conditioning factors with self-care agency and self-care practices of adolescents. Development and testing of the SARAS R suggests that this instrument is a reliable measure to use with adolescents.

The following conclusions were drawn from the research findings:

1. The SARAS is a reliable instrument for use in identifying resilience factors that enable healthy outcomes, positive health promotion and self-care practices.

2. Adolescents with higher self-efficacy tend to be more effective self-care agents.

3. There is a positive relationship between perceived health status, perceived self-efficacy, resilience abilities, self-care agency and self-care practices.

4. Perceived health status and resilience abilities need to be encouraged since they were found to be the strongest predictors of self-care practice.

5. Resilience is an important factor when adolescents initiate and perform behaviors on their own behalf for their health.

6. Demographic profiles are important considerations when planning intervention strategies to reduce risk behaviors and enhance self-care practice.

7. Resilience is of particular interest to nurses and others interested in adolescents because of its health implications.

Implications for Nursing Practice, Education and Administration

Nursing can take a leadership position in research, development and evaluation of measures to assess the phenomenon of resilience and self-care practice

in adolescents. With a growing national concern regarding the large number of adolescents who engage in risk behaviors that result in negative health outcomes, nurses have an opportunity to be leaders and advocates for adolescents. Exploring the factors that enhance self-care practices can lead to innovative and creative approaches in the development of health promotion activities and preventive healthcare strategies in the care of adolescents in many settings.

Nursing Practice

Nurses, clinical nurse specialists, and nurse practitioners are positioned to focus and engage in advocacy roles for fostering healthier behaviors in the adolescent population. These practitioners can play a vital role in assessing young people regarding their strengths and at-risk behaviors. Although adolescents may be faced with adversities in their homes, schools and the community, a growing body of resilience research provides empirical evidence that many at-risk youth can develop into confident, competent and caring adults (Bloom, 1997). Findings of resilience research can be useful to nurses in planning interventions to promote health and well-being in a vulnerable population (Rew et al., 2001). Nurses working with homeless adolescents, as well as those with intact families and support systems, can benefit from this knowledge base regarding factors of resilience and self-care practice.

Findings from this study will assist nurses to work with adolescents from culturally diverse backgrounds due to the predictive relationship found with perceived health status and resilience abilities. The more positive the perception adolescents have concerning their health status the more self-care practices they tend to report. Likewise, the resilience factors found in this study play a role in adolescents as self-

care agents. Nurses have an opportunity to be present for adolescents, without judgement, to foster the healthy perceptions, skills, and abilities that adolescents exhibit.

Nurses as well as other healthcare providers could use the SARAS questionnaire to screen for adolescent strengths and areas of concern. The questionnaire takes on average ten minutes to complete, and may be the critical first step in planning specific intervention for at-risk youths. Nursing interventions could focus on enhancing those self-care agency components that are weakest. The review of the SARAS with the adolescent may open up lines of communication between the adolescent and his/her healthcare provider. Direct benefit of utilizing the SARAS may include advancing general knowledge regarding health and individual coping skills for the teen.

Nursing Education

Nursing education is frequently criticized for graduating students unprepared for the future and for failure to change curriculum to meets the needs of reality based practice. Nurse educators need to be on the forefront of monitoring research findings in reference to their particular area of practice and teaching. If nurse educators are not well versed with a particular subject matter, they can invite guest lecturers, including nurse researchers into their classrooms to share study findings, assessment techniques, and strategies for clinical practice. Students of nursing deserve the most recent research findings to integrate theory and clinical practice in the care of adolescents. Findings from this study can enhance curriculum related to adolescent development, assessment, and interventions to enhance self-care practices of teens.

Nursing Management

Nursing administrators who are charged with hiring staff who monitor the care of adolescents in any setting need to ensure they are hiring the most competent, qualified nurses. These nurses should be competent in clinical practice skills of assessment, planning, intervention and evaluation. In addition, those nurses who have been active in community involvement activities regarding the health and welfare of adolescents should be sought. Communication is an important asset for nurses working with all ages, and specifically during this important dynamic period of adolescence. Developmentally, it is a period of great stress, high vulnerability, mood changes, and emotion liability (Hamburg, 1997), therefore it is imperative that individuals working with adolescents enjoy this age group, convey a genuine sense of interest, and develop a mutually trusting relationship.

Promotion of health and encouraging adolescents to act on their own behalf is of paramount importance, especially in light of shrinking resources, uncertain health care systems, and a more culturally diverse society. Hence, nurse administrators can be politically active in local, state, and national initiatives to further research, funding and care for adolescents.

Recommendations for Further Research

1. It is recommended that this study be replicated with a larger sample of adolescents including participants with a wider range of ethnic diversity, at-risk status, and from different geographic regions. This data could more effectively generalized to other groups. With this additional research a scoring will be established for the SARAS – R questionnaire.

2. Qualitative research could include interviews with adolescents to further explore their perceptions of health, resilience abilities and self-care practice strategies and barriers. This may lead to the identification of relationships of variables not yet discovered.

3. Triangulated research could incorporate the use of the SARAS with at-risk adolescents, such as homeless youth, followed by focused group discussion to further explore perceptions of health and resilience in this group. "Resilience in homeless youth may be a different phenomenon than in youth who are connected with family and other social institutions" (Rew et al., 2001, p. 38).

4. Phenomenological research could focus on the adolescents' experience with healthcare providers such as nurses and physicians to examine depersonalizing and confirming interactions. Because of the imbalance of authority and power, as in the patient-caregiver relationship, the adolescent may be vulnerable to the emotional message of the other, and hence, should we not as nurses ask ourselves what is wrong with the way we provide care? This study may yield important factors related to the relationship between the resilient adolescent and the healthcare provider.

The incidence of adolescent at-risk behaviors resulting in negative health outcomes has increased in the past decade and data demonstrates this problem in San Diego. Effective interventions are needed to decrease at-risk behaviors and positively influence health promotion.

References

Baldwin, A.L., Baldwin, C.P. Kasser, R., Zax, M., Sameroff, A., & Seifer, R. (1993). Contextual risk and resiliency during late adolescence. *Development and Psychopatholgy*, 5, 741-761.

Bandura, A. (1986). The explanatory and predictive scope of self-efficacy theory. *Journal of Social and Clinical Psychology*, 4(3), 359-373.

Bandura, A. *(1997)*. Self-efficacy: Toward a unifying theory of behavioral change. *Psychological Review*, 84, 191-215.

Bandura, A (1997). *Self-efficacy: The exercise of control*. New York: W. H. Freeman.

Barnett, F. C. (1989). The relationship of selected cognitive-perceptual factors to health promoting behaviors of adolescents (Doctoral dissertation, University of Texas, 1989). *Dissertation Abstracts International,* 8920656.

Bloom, M. (1996). Primary prevention and resilience: Changing paradigms and changing lives. In Hampton, R.L., Jenkins, P., & Gullotta, T.P. (Eds.), *Preventing Violence in America* (pp. 87-115). Thousand Oaks, CA: Sage.

Borman, K., & Schneider, B. (1998). *The adolescent years: Social influences and educational challenges*. Chicago, Ill: University of Chicago Press.

Brodeur, K., & Berry, B.A. (1999). *Quality values: Market dominance through customer satisfaction*. San Diego, CA: Aquarius Publishing.

Bronfenbrenner, U. (1986). Ecology of the family as a context for human development: Research perspectives. *Developmental Psychology*, 22, 723-742.

Burns, N., & Grove, S.K. (1993). *The practice of nursing research: Conduct, critique, and utilization.* Philadelphia: W.B. Saunders.

Byrne, C., Love, B., Browne, G., Robers, J., & Streiner, D. (1986). The social competence of children following burn injury: A study of resilience. *Journal of Burn Care and Rehabilitation, 7* (3), 247-252.

Campbell, J.C. (1981). Nursing assessment for risk of homocide with battered women. *Advances in Nursing Science, 8* (4), 36-51.

Cicchetti, D. & Garmezy, N. (1993). Prospects and promises in the study of resilience. *Development and Psychopathology, 5,* 497-502.

Cowen, E.L., & Work, W.C. (1988). Resilient children, psychological wellness and primary prevention. *American Journal of Community Psychology, 16* (4), 591-607.

Cull, V.V. (1996). Exposure to violence and self-care practices of adolescents. *Family and Community Health, 19* (1), 31-41.

Davies, A.R., & Ware, H.E. (1981). *Measuring health perceptions in the health insurance experiment,* R-2711-HHS. Santa Monica, CA: The Rand Corporation.

Deatrick, J.A., Angst, D.B., & Madden, M. (1998). Promoting self-care with adolescents. *Journal of child and family nursing, 1*(2), 65-76.

Denyes, M.J. (1980). Development of an instrument to measure self-care agency in adolescents (Doctoral dissertation, University of Michigan, 1980). *Dissertation Abstracts International, 41,* 1716 B. (University Microfilms No. 8025672).

Denyes, M. J. (1982). Measurement of self-care agency in adolescents. *Nursing Research*, 31, 63.

Denyes, M. J. (1988). Orem's model for health promotion: Directions for nursing research. *Advances in Nursing Science*, 11 (1), 13-21.

Dyer, J.G. & McGuinness, T.M. (1996). Resilience: Analysis of the concept. *Archives of Psychiatric Nursing*, 10 (5), 276-282.

Earles, J., & Earles, J. (1987). Recovery and resilience in children. In E. Anthony & B. Cohler (Eds.), *The invulnerable child.* New York: Guilford Press.

Egeland, B., Jacobvitz, D., & Stroufe, L.A. (1988). Breaking the cycle of abuse: Relationship predictors. *Child Development*, 59 (4), 1080-1088.

Egeland, B., Carlson, E., & Stroufe, L. A. (1993). Resilience as a process. *Development and psychopathology*, 5, 517-528.

Emery, R.E. (1982). Family violence. *American Psychologist*, 44 (4), 310-330.

Frey, M.A., & Denyes, M.J. (1989). Health and illness self-care in. adolescents with IDDM: A test of Orem's theory. *Advances in Nursing Science*, 12, 67-75.

Garmezy, N. (1981). Children under stress: Perspectives on antecedents and correlates of vulnerability and resistance to psychopathology. In Rabin, A.I., Arnoff, J., Barclay, A.M. & Zucker, R.A. (Eds.). *Further explorations in personality* (pp. 70-81), New York: Wiley Interscience.

Garmezy, N. (1983). Stressors of childhood. In Garmezy, N. (Ed.), *Stress, coping and development in children* (pp. 43-84). New York: McGraw-Hill.

Garmezy, N. (1990). Risk and protective factors. In J. Rolf, A. Masten, D. Cicchetti,

    K. Nuechterlein, & S. Weintraub (Eds.). *Risk and protective factors in the*

    development of psychopatholgy. Cambridge, UK: Cambridge University

    Press.

Garmezy , N., & Rutter, M. (1983). *Stress, coping and development in children.* New

    York: Mc-Graw-Hill.

Gaut, D.A., & Kieckhefer, G.M. (1988). Assessment of self-care agency in

    chronically ill adolescents. *Journal of Adolescent Health Care*, 9, 55-60.

Grubbs, S., Hardin, S.B., Meinrich, S., Weinrich, M., Garrison, C., Pesut, D., &

    Hardin, T.L. (1992). Self-efficacy in normal adolescents. *Issues in Mental*

    Health Nursing, 13, 121-128.

Haas, J. (1997). Hopeful teenagers with cancer; Living courage. *Reflections,* 32(1),

    20.

Hamburg, D.A. (1997). Toward a strategy for healthy adolescent development.

    American Journal of Psychiatry, 154(6), 6-12.

Hartzell, H.E. (1984). The challenge of adolescence. *Topics in Language Disorders,*

    4, 1-9.

Hinkle, D.E., Jurs, S.G., & Weisman, W. (1998). Applied statisitcs for the behavioral

    sciences (4th ed). Boston: Houghton Mifflin Company.

Holaday, M., & Terrell, D. (1994). Resiliency characteristics and rorschach variables

    in children and adolescents with severe burns. *Journal of Burn Care*

    Rehabilitation, 15 (5), 452-460.

Huck, S.W., & Cormier, W.H. (1996). *Reading statistics and research*. New York:

HarperCollins Publishers, Inc.

Hulin, C.L., Drasgow, F., & Parsons, C.K. (1983). *Item Response Theory*.

Homewood, IL: Dow Jones-Irvin.

Humphreys, J. (1997). Nursing care of children of battered women. *Pediatric*

Nursing, 23(2), 122-128.

Hunter, A.J., & Chandler, G.E. (1999). Adolescent resilience. Image: *Journal*

of Nursing Scholarship. 31 (3), 243-247.

Hunter, R., & Kilstrom, N. (1979). Breaking the cycle in abusive families. *American*

Journal of Psychiatry, 136 (3), 1320-1322.

Jacelon, C.S. (1997). The trait and process of resilience. *Journal of Advanced*

Nursing, 25 (1), 123-129.

Jaffe, P.G. (1990). *Children of battered women.* Newbury Park: Sage.

James, K. (1990). Factors related to self-care agency and self-care practices of obese

adolescents. (Doctoral dissertation, University of San Diego, 1990).

Dissertation Abstracts International, 52, 04B.

Joel, L.A. (1994). Teach a woman, educate the world. *American Journal of Nursing,*

7, 7.Kaufman, J., & Zigler, E. (1987). Do abused children become abusive

parents? *American Journal of Orthopsychiatry,* 57 (3), 186-193.

Kearney, B.Y., & Fleischer, B.J. (1979). Development of an instrument to measure

exercise of self-care agency. *Research in Nursing and Health,* 2(1), 25-34.

Krovetz, M.L. (1999). *Fostering Resiliency.* Thousand Oaks, CA: Sage.

Lindenberg, C.S., Gendrop, S.C., Nencioli, M., & Adames, Z. (1994). Substance abuse among inner-city Hispanic women: Exploring resiliency. *Journal of Gynocological and Neonatal Nursing*, 23 (7), 609-616.

Luther, S., & Zigler, E. (1991). Vulnerability and competence: A review of research on resilience in childhood. *American Journal of Orthopsychiatry*, 61(1), 6-22.

Mangham, C., Reid, G., & Stewart, M. (1996). Resilience in families: Challenges for health promotion. *Canadian Journal of Public Health*, 87(6), 373-374.

Masten, A.S., Best, K.M., & Garmezy, N. (1990). Resilience & development: Contribution from the study of children who overcame adversity. *Development &Psychopathology*, 2 (2), 425-444.

McCaleb, A., & Cull, V.V. (2000). Sociocultural influences and self-care practices of middle adolescents. *Journal of Pediatric Nursing*, 15 (1), 30-35.

Mickalide, A.D. (1986). Children's understanding of health and illness: Implications for health promotion. *Health Values*, 10 (3), 5-21.

Nunnally, J.C., & Bernstein, I.H. (1994). *Psychometric theory* (3rd ed.). New York: McGraw.

Nursing Development Conference Group. (1979). *Concept formalization in nursing: Process and product* (2nd. ed.). Boston: Little, Brown.

Odougherty, M., & Brown, R. (1990). The stress of childhood illness. In L. Arnold (Ed.), *Childhood stress* (pp. 325-349), New York: John Wiley & Sons.

Orem, D.E. (1980). *Nursing: Concepts in practice* (2nd. ed.). New York: McGraw Hill.

Orem, D.E. (1985). *Nursing: Concepts in practice* (3rd ed.). New York: McGraw Hill.

Orem, D. E. (1991). *Nursing: Concepts in practice* (4th ed.). St. Louis: Mosby Year Book.

Pender, N.J. (1987). Health and health promotion: Conceptual dilemmas. In M. Duffy & N. Pender (Eds.), *Conceptual issues in health promotion: Proceedings of a Wingspread Conference* (pp. 7-21). Indianapolis: Sigma Theta Tau.

Polk, L. V. (1997). Toward a middle range theory of resilience. *Advances in Nursing Science, 19* (3), 1-13.

Quayhagen, M.P., & Quayhagen, M. (1982). Coping with conflict: Measurement of age-related patterns. *Research on Aging, 4*, 364-377.

Quayhagen, M.P., & Quayhagen, M. (1988). Retroductive triangulation: A method for instrument development [Abstract]. *The Measurement of Clinical and Educational Outcomes, 2*, 45.

Rak, C., & Patterson, L. (1996). Promoting resilience in at-risk children. *Journal of Counseling and Development, 74*, 368-373.

Rakowski, W. (1986). Future time perspective: Applications to the health context of later adulthood. *American Behavioral Scientist, 29*, 730-745.

Rew, L., Taylor-Seehafer, M., Thomas, N., & Yockey, R.D. (2001). Correlates of resilience in homeless adolescents. *Journal of Nursing Scholarship, 33*(1), 33-40.

Rosenberg, M. (1965). *Society and the adolescent self-image.* NJ: Princeton University Press.

Rutter, M. (1985). Resilience in the face of adversity;: Protective factors and resistance. *British Journal of Psychiatry, 147*, 598-611.

Rutter, M. (1987). Psychosocial resilience and protective mechanisms. *American Journal of Orthopsychiatry*, 57 (3), 316-331.

Rutter, M. (1990). Resilience in the face of adversity: Protective factors and resistance to psychiatric disorder. *British Journal of Psychiatry*, 147 (3), 598-611.

Rutter, M. (1993). Resilience: Some conceptual considerations. *Journal of Adolescent Health*, 4, 626-631.

Sherer, M., Maddux, J.E., Mercandante, B., Printice-Dunn, S., Jacobs, B., & Rogers, R.W. (1982). The self-efficacy scale: Construction and validation. *Psychological Reports*, 51, 663-671.

Solem, S., Kim, S., & Boren, D. (1999). The Solem Adolescent Resilience Abilities Scale: Development and Psychometric Evaluation. Unpublished manuscript, University of San Diego at San Diego, CA.

SPSS Inc. (1999). SPSS 10.0 for windows. Chicago, IL: SPSS.

Stewart, M., Reid, G., & Mangham, C. (1997). Fostering children's resilience. *Journal of Pediatric Nursing*, 12(1), 21-31.

Tessler, R., & Mechanic, D. (1978). Psychological distress and perceived health status. *Journal of Health and Social Behavior*, 19, 254-262.

United States Department of Health and Human Services, Public Health Service. *Healthy People 2000: National health promotion and disease prevention objectives*. (DHHS Publication No. (PHS) 91-50212) Washington: US Government Printing Office. 1991.

Wagnild, G.W., & Young, H.M. (1990). Resilience among older women. *Image: Journal of Nursing Scholarship*, 22 (4), 252-255.

Wagnild, G.W., & Young, H.M. (1993). Development and psychometric evaluation of the Resilience Scale. *Journal of Nursing Measurement*, 1 (2), 165-178.

Walker, L. E. (1984). *The battered woman syndrome*. New York, NY: Springer.

Werner, E.E. (1993). Risk, resilience & recovery: Perspectives from the Kauai longitudinal study. *Development & Psychopathology*, 5, 503-515.

Werner, E.E., & Smith, R.S. (1982) *Vulnerable but invincible*. New York: McGraw-Hill.

Werner. E.E., & Smith, R.S. (1989). *Vulnerable but invisible: A longitudinal study of resilient children and youth*. New York, NY: Adams, Bannister, and Cox.

Werner, E.E., & Smith, R.S. (1992). Overcoming the odds: High risk children from birth to adulthood. Ithica, NY: Cornell University Press.

Wyman, P.A., Cowen, E. L., Work, W.C., & Parker, G.R. (1991). Developmental and family milieu correlates of resilience in urban children who have experienced major life stress. *American Journal of Community Psychology*, 19(3), 405-426.

Yamashita, M. (1998) The exercise of self-care agency. *Western Journal of Nursing Research*, 20 (3), 370-381.

Yarcheski, A., & Mahon, N.E. (1989). A causal model of positive health practices: The relationship between approach and replication. *Nursing Research*, 38 (2), 88-93.

Yarcheski, A., Mahon, N.E., & Yarcheski, T. J. (1997). Alternate models of positive

health practices in adolescents. *Nursing Research*, 46 (2), 85-92.

Youth Risk Behavior Survey. (1999). San Diego, CA: San Diego City Schools.

SARAS Questionnaire

Use a No. 2 Pencil, Blue or Black Ink Only

(Correct mark ⊂⊃ ⊂●⊃ ⊂⊃)

The following questions are needed for statistical analysis:

- What is your age: ⊂⊃ 13 ⊂⊃ 14 ⊂⊃ 15 ⊂⊃ 16 ⊂⊃ 17 ⊂⊃ 18
- What is your gender: ⊂⊃ Male ⊂⊃ Female
- What is your Ethnic background: ⊂⊃ White ⊂⊃ Hispanic ⊂⊃ Black ⊂⊃ Asian/Pacific Islander ⊂⊃ Other

This questionnaire is a group of statements about your health, personal attitudes, traits and abilities. Read each statement and decide to what extent it describes you. There are no right or wrong answers. Some of the statements may seem like others, but each statement is different and should be rated by itself. Please check the box that best describes your answer.

Column headers (left to right): Strongly Disagree, Disagree, Neither agree nor disagree, Agree, Strongly Agree

	Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree
1. I'm as healthy as anybody I know.	⊂⊃	⊂⊃	⊂⊃	⊂⊃	⊂⊃
2. My health is excellent.	⊂⊃	⊂⊃	⊂⊃	⊂⊃	⊂⊃
3. I have never been seriously ill.	⊂⊃	⊂⊃	⊂⊃	⊂⊃	⊂⊃
4. I've never had an illness that lasted a long period of time.	⊂⊃	⊂⊃	⊂⊃	⊂⊃	⊂⊃
5. In the future, I expect to have better health than other people I know.	⊂⊃	⊂⊃	⊂⊃	⊂⊃	⊂⊃
6. I expect to have a very healthy life.	⊂⊃	⊂⊃	⊂⊃	⊂⊃	⊂⊃
7. I never worry about my health.	⊂⊃	⊂⊃	⊂⊃	⊂⊃	⊂⊃
8. My health is a concern in my life.	⊂⊃	⊂⊃	⊂⊃	⊂⊃	⊂⊃
9. When I make plans, I am certain that I can make them work.	⊂⊃	⊂⊃	⊂⊃	⊂⊃	⊂⊃
10. When unexpected problems occur, I don't handle them well.	⊂⊃	⊂⊃	⊂⊃	⊂⊃	⊂⊃
11. If I can't do a job the first time, I keep trying until I can.	⊂⊃	⊂⊃	⊂⊃	⊂⊃	⊂⊃
12. I avoid facing difficulties.	⊂⊃	⊂⊃	⊂⊃	⊂⊃	⊂⊃
13. When I have something unpleasant to do, I stick to it until I finish.	⊂⊃	⊂⊃	⊂⊃	⊂⊃	⊂⊃
14. When I decide to do something, I go right to work on it.	⊂⊃	⊂⊃	⊂⊃	⊂⊃	⊂⊃
15. Failure just makes me try harder.	⊂⊃	⊂⊃	⊂⊃	⊂⊃	⊂⊃
16. I am able to go on with life after a stressful event.	⊂⊃	⊂⊃	⊂⊃	⊂⊃	⊂⊃
17. I am able to confide in my friends.	⊂⊃	⊂⊃	⊂⊃	⊂⊃	⊂⊃
18. I am able to keep focused on my tasks.	⊂⊃	⊂⊃	⊂⊃	⊂⊃	⊂⊃
19. I am able to talk to my family about my problems.	⊂⊃	⊂⊃	⊂⊃	⊂⊃	⊂⊃
20. I am able to spring back from disappointments.	⊂⊃	⊂⊃	⊂⊃	⊂⊃	⊂⊃
21. I am able to confide to another adult other than my parent.	⊂⊃	⊂⊃	⊂⊃	⊂⊃	⊂⊃
22. I am able to return to school after a personal trauma.	⊂⊃	⊂⊃	⊂⊃	⊂⊃	⊂⊃
23. I am able to trust my friends.	⊂⊃	⊂⊃	⊂⊃	⊂⊃	⊂⊃
24. I am able to seek out a friend to help solve a problem.	⊂⊃	⊂⊃	⊂⊃	⊂⊃	⊂⊃
25. I am able to change my mind/decisions when I need to.	⊂⊃	⊂⊃	⊂⊃	⊂⊃	⊂⊃
26. I am able to ask others for help.	⊂⊃	⊂⊃	⊂⊃	⊂⊃	⊂⊃
27. I am able to depend on my own resources.	⊂⊃	⊂⊃	⊂⊃	⊂⊃	⊂⊃
28. A majority of the time, I do things that are good for my health.	⊂⊃	⊂⊃	⊂⊃	⊂⊃	⊂⊃
29. A majority of the time, I follow through on decisions I make for my health.	⊂⊃	⊂⊃	⊂⊃	⊂⊃	⊂⊃
30. A majority of the time, I eat breakfast.	⊂⊃	⊂⊃	⊂⊃	⊂⊃	⊂⊃
31. A majority of the time I get enough exercise to be healthy.	⊂⊃	⊂⊃	⊂⊃	⊂⊃	⊂⊃
32. A majority of the time I get enough rest for my health.	⊂⊃	⊂⊃	⊂⊃	⊂⊃	⊂⊃
33. A majority of the time I have enough time alone for my health.	⊂⊃	⊂⊃	⊂⊃	⊂⊃	⊂⊃
34. A majority of the time I get a balance between time alone and time with others for my health.	⊂⊃	⊂⊃	⊂⊃	⊂⊃	⊂⊃

Continue on back side...

35. A majority of the time I do things to keep myself safe. ▭ ▭ ▭ ▭ ▭ ▬
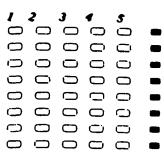36. A majority of time when I am stressed I do things to feel less stressed for my health. ▭ ▭ ▭ ▭ ▭ ▬
37. When I don't take care of my health, it is usually because of a lack of information. ▭ ▭ ▭ ▭ ▭ ▬
38. When I fail to take care of myself it is due to fatigue. ▭ ▭ ▭ ▭ ▭ ▬

For the following questions, use the numbers 1-5 to best represent the extent of knowledge you have about your body. One being Not at all, and 5 being Extremely knowledgeable.
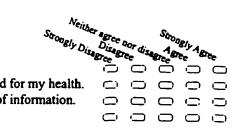
| | 1 | 2 | 3 | 4 | 5 | |
39. My knowledge about my body and how it works is.... ▭ ▭ ▭ ▭ ▭ ▬
40. My knowledge about what I eat and how it effects my health is... ▭ ▭ ▭ ▭ ▭ ▬
41. My knowledge about how physical exercise effects my health is... ▭ ▭ ▭ ▭ ▭ ▬
42. My knowledge about how sleep and rest effect my health is... ▭ ▭ ▭ ▭ ▭ ▬
43. My knowledge about how smoking effects my health is... ▭ ▭ ▭ ▭ ▭ ▬
44. My knowledge about how stress effects my health is... ▭ ▭ ▭ ▭ ▭ ▬
45. I would rate my awareness of my sexuality as... ▭ ▭ ▭ ▭ ▭ ▬
46. I would rate the knowledge I have about my own health as... ▭ ▭ ▭ ▭ ▭ ▬

Do not make photo copies of form, they will not scan.

(Appendix B)
UNIVERSITY OF SAN DIEGO

ASSENT TO ACT AS A RESEARCH PARTICIPANT
(Adolescent Assent Form)

Sandra L. Solem, R.N., "Doctoral Student at the University of San Diego", is conducting a research study to test a revised measure entitled the "Solem Adolescent Resilience Abilities Scale (SARAS). This study is aimed to help research in health promotion and stress prevention in adolescents. Testing of the SARAS scale will also provide a tool to measure adolescent resilience, which is currently not available. You have been asked to participate in this study because you are between 13 and 18 years of age and meet the criteria for the study. A total of 100 adolescents will participate in this study.

If you agree to participate, you understand that you will be asked to complete one paper and pencil questionnaire that will ask you personal questions about your health, your decision making process and how you bounce back from difficult situations. You will be completing the study at one sitting which is anticipated to take approximately 30 minutes.

You have been informed that there is minimal risk to be involved in this study, but you could experience some discomfort with some of the questions. If the discomfort is unusual you will tell the researcher and an appropriate medical and/or psychological referral will be made. There are, however, no right or wrong answers to the questions.

You may not personally benefit from this project, but you may enjoy being selected to participate in a study that may help other adolescents and increase your general knowledge about your health. The researcher values your participation and has conveyed this to you.

Your participation in this research project is entirely voluntary. You understand that you may refuse to participate or withdraw from the testing at any time. Prior to signing the assent form you have an opportunity to ask questions about the research and the researcher will answer your questions.

You understand that your research records will be kept completely confidential. The assent form that you sign will be kept separate from the tests you complete which will not contain your name or any other identifying information. You understand that your name will not be used in any publication of the results of the study. There are no other agreements, written or verbal, related to this study beyond what have been explained to you. If you have any questions regarding this research study, you may contact Sandra Solem at (619) 435-7944 or Kathy James at (619) 260-4548.

You, the undersigned, understand the above explanations and on that basis you assent for voluntary participation in this research. A copy of this assent form has been given to you.

_____   _____
Signature of Participant   **Date**

_____   _____
Signature of Principal Researcher   **Date**

_____   _____
Signature of Witness   **Date**

(Appendix A)
UNIVERSITY OF SAN DIEGO

CONSENT TO ACT AS A RESEARCH PARTICIPANT
(Parent/Legal Guardian Consent Form)

Sandra L. Solem, R.N., Ph.D. Candidate, is conducting a research study to test a revised measure entitled the "Solem Adolescent Resilience Abilities Scale" to complete the degree of Doctor of Philosophy at the University of San Diego. This study is aimed to further research in health promotion and stress prevention in adolescents. In addition, a reliable and valid tool will be available to measure adolescent resilience, which is currently not available. Your child has been asked to participate in this study because he or she is between 13 and 18 years of age and meet the criteria for the study. A total of 100 adolescents will participate in this study.

If you agree to allow your child to participate, you understand that your child will be asked to complete one paper and pencil questionnaire with a few personal questions about your child's health, their decision making process and how they bounce back from difficult situations. Your child will be completing the research at one sitting which is anticipated to take approximately 30 minutes.

You have been informed that minimal risk is involved in this study as your child could experience some discomfort from some of the questions. There are, however, no right or wrong answers. If the discomfort should be unusual, your child has been asked to tell the researcher and an appropriate medical and/or psychological referral would be made. Completing the tests in the privacy of your home or a neutral setting such as the community library or church is intended to protect your child's privacy and risk for embarrassment with their peer group. If a neutral setting is used, you will be responsible for transportation to and from that site.

Potential benefits for your child might include an enhanced feeling of self-worth and independence by being selected to participate in a study that is aimed to assist adolescents. Indirect benefit of advancing general knowledge concerning your child's health and coping abilities may be experienced. The researcher values your child's participation and this will be conveyed to your child.

Your child's participation in this research project is entirely voluntary. Your child may refuse to participate or withdraw from the testing at any time. Prior to signing the assent form, your child will have an opportunity to ask questions about the research and the researcher will respond to each question. In order to participate in the study you are aware that your child must give independent assent.

You understand that your child's research records will be kept completely confidential. Consent and assent forms will be kept separate from the questionnaire on which no identifying name will appear. Your child's identity will not be disclosed without your written consent required by law. You further understand that to preserve

your child's anonymity only group data will be used in any publication of the results of the study. There are no other agreements, written or verbal, related to this study beyond that expressed on this consent form.

If you have questions regarding this research study, you may contact Sandra Solem at (619) 435-7944 or Kathy James at (619) 260-4548.

You, the undersigned, understand the above explanations and on that basis, you give consent for your child's voluntary participation in this research. You have been given a copy of this consent form.

_____   _____
Signature of Parent/Guardian   Date

_____   _____
Signature of Principal Researcher   Date

_____   _____
Signature of Witness   Date