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Weight, body image, and physical ability: An exploration of gender differences in psychosocial development

McClellan, Melanie Ann, Ph.D.
The Ohio State University, 1993
WEIGHT, BODY IMAGE, AND PHYSICAL ABILITY: 
AN EXPLORATION OF GENDER DIFFERENCES IN PSYCHOSOCIAL DEVELOPMENT

DISSERTATION

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

By

Melanie Ann McClellan, B.A., M.Ed.

The Ohio State University

1993

Dissertation Committee: Approved by:

R. F. Rodgers
R. L. Bargar
S. O'Bryant

Robert F. Rodgers
Adviser
College of Education
To my parents,
Mary Helen Odom McClellan and the late John Frank McClellan, Sr.,
who have always been there for us.
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Life’s journey is replete with paths to discover, adventures to experience, and dragons to slay. The journey can be lonely and difficult. Fortunately, we have been blessed with guides to help see us safely on our way. The support of mentors, colleagues, friends, and family has been invaluable in my journey to the doctorate and through the doctorate.

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VITA

Melanie A. McClellan

November 6, 1955............................................................... Born - Enterprise, Alabama

1979 ................................................................. BA, Communication,
The University of Alabama, Tuscaloosa, Alabama

1978 - 1981 .............................................................. Community Education Director,
Bremen City Schools, Bremen, Georgia

1981 - 1983 .............................................................. Residence Hall Director,
Mississippi State University, Starkville, Mississippi

1983 ................................................................. MEd, Counseling/College Student Personnel,
Mississippi State University, Starkville, Mississippi

1983 - 1987 .............................................................. Assistant Director of Housing for Residence Life,
Mississippi State University, Starkville, Mississippi

1987 - 1989 .............................................................. Student Personnel Assistant,
Association of Colleges and University Housing Officers-International,
Columbus, Ohio

1989-1990 .............................................................. Student Personnel Assistant,
Office of Career Development,
The Ohio State University, Columbus, Ohio

1990 - 1991 .............................................................. Associate Director of Housing for Residence Life,
Mississippi State University, Starkville, Mississippi

1991 to present ............................................................. Director of Housing and Residence Life,
Mississippi State University, Starkville, Mississippi

Field of Study

Major Field: Education
Studies in Human Development
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CHAPTER I
INTRODUCTION

Student affairs practitioners look to student development theory to inform our work with college students in a variety of areas. Of particular interest in this study are the psychosocial theorists because they reflect student affairs' concern with the whole person, including that development which takes place outside the classroom. This study attempts to increase our understanding of the psychosocial development of traditional-aged students by examining and comparing women's and men's experiences with body acceptance and whether its resolution is related to weight, figure satisfaction, and perceived physical ability.

This chapter presents an overview of the process of psychosocial development in young adults, with particular attention to gender issues. It briefly describes gender differences in experiences with weight, introduces the psychological concept of "body image," then discusses how body and appearance is addressed in the psychosocial development literature. It concludes with the presentation of purpose of the proposed study, the research questions, and the importance of the proposed study.
Erik Erikson's (1968) theory of psychosocial development postulates that human personalities develop through a series of eight stages. A stage is a particular time in the life sequence when physical growth, cognitive maturation, and social demands converge to create a particular developmental prescription with its associated tasks. Development across stages is epigenetic, meaning there is an underlying structure to development throughout the lifespan (Erikson, 1968). Internal changes (biological and psychological) interact with cultural and social expectations to produce the stages of development and their particular developmental tasks.

Miller and Winston (1990) summarize Erikson's concept of developmental task by saying it:

. . . represents an interrelated set of behaviors and attitudes that one's culture specifies should be exhibited at approximately the same chronological time in life by a given age cohort in a designated environmental context such as the higher education setting. Successful accomplishment or achievement of a developmental task enables the individual to acquire the experiential base needed to accomplish future developmental tasks. Failure to meet successfully the challenges inherent in a given developmental task results in social disapproval and may hinder further growth in that area of development or can lead to maladaptive adjustment. (p. 104)

Hence, for Erikson and other psychosocial theorists, psychosocial development is cumulative in nature, and how one resolves or fails to resolve the tasks of one stage will influence how one is able to resolve future stages (Erikson, 1968; Rodgers, 1989). For student development educators working with traditional age college students, the stage of interest
in Erikson's theory is the stage of Identity (ages 14 - 23). The primary task of this stage is to achieve an identity, "the accrued confidence that’s one’s ability to maintain inner sameness and continuity is matched by the sameness and continuity of one’s meanings for others (Erikson, 1959/1980, p. 94)." Failure to achieve identity results in a diffuse personality. A positive resolution of this stage results in an identity which is experienced personally, validated interpersonally, and founded in the context of cultural norms.

Arthur Chickering (1969) built on the work of Erikson and others in his model of college student development. He noted that the period of 18 to 23 years old must be studied separately from other developmental stages because the tasks are related to, but are substantially different from, those of both adolescence and adulthood.

Chickering's model posits development along seven vectors. Each vector can be understood as a series of developmental tasks, a source of concern, and a set of issues that need to be resolved in positive ways. The vectors are: Achieving Competence, Managing Emotions, Becoming Autonomous, Establishing Identity, Freeing Interpersonal Relationships, Clarifying Purpose, and Developing Integrity. Rodgers (1980) summarizes their chronological relationship as exemplified in the research literature in Figure 1.
Chickering's Vectors

Developing Competence — Freeing Interpersonal Relationships

Managing Emotions — Establishing Identity — Developing Purpose

Developing Autonomy — Developing Integrity

Framework for Necessary Condition for

Freshmen Sophomores Juniors Seniors Graduate
Age 18 Age 25

FIGURE 1:
Chronological Relationships of Chickering's Vectors
Rodgers (1980)
Rodgers (1989) also succinctly describes the vectors:

The first three vectors represent finding oneself - determining one's capabilities, integrating self-control and interdependence, and finding sexual-social expression - and finding that one can negotiate and be competent within the college's academic and social environments. Partial resolution of these issues provide the raw materials for establishing one's first identity, which involves acceptance of body and appearance, integration and acceptance of one's sexuality, and determination of a lifestyle. Accepting and integrating one's body and appearance, and sexuality and lifestyle, in turn, provide the necessary framework for juniors, seniors, and graduate students to work on tasks that make up what Levinson (1978) calls one's initial life structure. (p. 125)

The vector of interest in this study is Chickering's Establishing Identity. As indicated, identity is conceptualized as using one's experience with competence issues, capacities for internal locus of control and autonomy, and managed sexual and aggressive emotions to resolve the issues of acceptance of one's body and appearance, integration and acceptance of one's sexuality, and adoption of one's first adult lifestyle. The question is whether one's weight (that is, being overweight, correct weight, or underweight); perceived satisfaction with one's figure, body shape, or size; and one's perceived physical ability hinders or helps or is in any way related to resolving the task of accepting one's body and appearance.

Gender Issues in Development

In the past two decades, research on psychosocial development has noted some gender differences. Researchers have found that issues of intimacy precede issues of identity and autonomy for some women (Straub & Rodgers, 1986), and that mastery of intimacy issues has significant effects
on the development or lack of development of identity issues and autonomy for some women (Straub, 1987; Josselson, 1987). Greeley and Tinsley's research (1988) indicated that women develop capacities for intimacy somewhat earlier than men, and that both men and women may complete intimacy issues before autonomy. Chickering himself acknowledges the value of recent gender research on the sequencing of the vectors, and he notes also that each vector needs to be examined within the context of gender differences (Krivoski & Nicholson, 1989).

Carol Gilligan sums up the need for sex differentiation in developmental studies:

At a time when efforts are being made to eradicate discrimination between the sexes in the search for social equality and justice, the differences between the sexes are being rediscovered in the social sciences. This discovery occurs when theories formerly considered to be sexually neutral in their scientific objectivity are found instead to reflect a consistent observational and evaluative bias. Then the presumed neutrality of science, like that of language itself, gives way to recognition that categories of knowledge are human constructions. (1982, p. 6)

This study will explore whether there are relationships between weight and body acceptance, satisfaction with figure and body acceptance, and perceived physical ability and body acceptance, using gender as a conscious variable. If relationships exist, are they the same for both sexes?

Chickering, unlike many early researchers in "human" development, fully included women in his initial study. However, he may have missed some categories of knowledge more important to women than men. James Marcia (1980), working with a different conceptualization of Erikson's identity stage, encountered this problem. Marcia's research conceptualized four identity-status modes. The four modes are defined by the absence or
presence of a conscious need to resolve issues (crisis), exploration of alternatives and the extent of personal commitment to one of the alternatives. The four possible statuses were Identity Achievement (crisis, exploration, and commitment present), Foreclosure (crisis absent, exploration and commitment present), Identity Diffusion (crisis present or absent, exploration and commitment absent), and Moratorium (crisis and exploration present, commitment present but vague). Marcia initially examined men using the identity issues of political ideology, religion, and career choice: had these men been consciously aware of a developmental need to explore these three areas? Had they explored options? And had they made commitments in these three areas? These three content areas allowed researchers to assign men to one of the four identity statuses with a high degree of confidence; political ideologies and career issues were the most important content areas.

When researchers (Schenkel & Marcia, 1972) first sought to extend Marcia's model to women, the identity issues of politics, religion, and career choice were not sufficient for determining identity status; the area of sexual ideology had to be added, and it was found that the combination of sexual and religious ideology, rather than politics and career choice, were the best predictors of identity status in women. They also found that, while the statuses characterized by crisis (Identity Achievement and Moratorium) were predictive of psychological well-being in college men (high self-esteem and low anxiety), somewhat different statuses (Identity Achievement and Foreclosure) were the important predictors of low anxiety and high self esteem for women (Josselson, 1987).
Marcia notes that Erikson's theory largely describes identity development in males, and he concludes, "Both Erikson's work and the identity status research began with a theoretical model applicable to men and then extended that model to women. The results are that both Erikson's theory and the identity status approach work only more or less, when applied to women (Marcia, 1980, p. 178)."

It is not sufficient, therefore, to simply examine women within the context of the male theory (in the words of Schaefer, 1985, p. 14, to "add women and stir"); we must listen differently and ask new questions. Straub's (1987) research supports this: She asked women who scored high on autonomy to describe critical life events that led them to become autonomous. She found several life experiences that paralleled male reports; however, she also found some experiences that did not mirror the male literature. Some women became autonomous due to break-ups with males. These breakups helped women to realize that they had been dependent on males rather than independent and motivated their development of capacities to be autonomous. If Straub had only used questions originally developed from work with male subjects, the content of break-up in relationships would not have been explored or discovered as an important issue.

Belenky, Clinchy, Goldberger, and Tarule (1986) summarized the effect of using male-voiced theories to learn about women. They noted that while such an approach may enable researchers to see what women have in common with men, it also ignores or obscures much of women's experiences and does not uncover themes which might be more prominent among women. The themes of body image and the importance of weight in
women's lives during their years of identity formation may be such issues. Are these issues obscured when they do not appear in the research on male acceptance of body and appearance?

To sum up, researchers who have studied women's psychosocial development have found that content areas not originally included in research with males have been discovered when females are studied using their own experiences. Chickering's sub-vector of acceptance of body and appearance (a part of the vector Identity) is conceptualized without gender differentiation and presented as if both sexes experience and resolve this task in similar ways. This may not be the case.

Weight and Satisfaction with Weight: Gender Differences

Among college women, preoccupation with weight is so central to women's lives that it may be normative. In a 1984 study of Ohio State University introductory psychology students, only 26.8% of women in the normal weight range saw themselves as of normal weight, whereas 58.8% of the men accurately perceived of themselves as of normal weight; 22% of men perceived themselves to be underweight, while none of the women perceived themselves as underweight (Mintz, 1984). In a later study, only 32.8% of non-anorexic, non-obese college women could be classified as normal eaters (Mintz, 1987).

In a 1990 health practices survey of a representative sample of Mississippi State University students (Frese & Frese, 1990), equal numbers of men and women indicated they were "somewhat comfortable with their body shape or figure"; however, almost 48% of men were "comfortable" or
"very comfortable," compared with only 34% of women; and more than twice as many women (19.9%) as men (7.9%) indicated they were "not comfortable." Further, 80.4% of the men report never having dieted, compared to only 46.5% of women; 24.9% of men report feeling guilty after eating, compared with 56.7% of women.

Branch-Simpson's (1984) study of the psychosocial development of black students at Ohio State found that when women discussed their physical selves, they were very self-critical, whereas men were uniformly positive in their self-evaluations. This is consistent with Gray, Ford, and Kelly's (1987) findings that 47% of black college women considered themselves overweight and 44% were afraid of gaining weight.

Klesges, Mizes, and Klesges (1987) reported that 61% of college women in an introductory psychology class used "inappropriate or dangerous weight-loss strategies" as compared to only 26% of males. Similar sex differences in weight perceptions and eating behaviors are reported in other studies of traditional-age college women on many campuses (Mable, Balance, & Galgan, 1986; Striegel-Moore, Silberstein, Frensch, & Rodin, 1989; Fallon & Rozin, 1985; Thompson & Thompson, 1986).

This preoccupation may be reflective of a lifelong concern of women throughout this society. Although not a representative sample of the general population, a 1984 Glamour magazine survey of 30,000 readers revealed that three-quarters rated themselves as overweight, including 45% of those who would be classified underweight by actuarial data; 63% reported that weight often affected how they felt about themselves, and 33% reported that weight sometimes affected how they felt about themselves (Wooley & Wooley, 1984). In a survey of Ms. magazine readers (whom one
might expect to be less influenced by fashion norms), 64.4% agreed with the statement, "I would like myself better if I were thinner"; and 29.3% agreed that "I think I'm fat though others see me as normal or underweight (Van Gelder, 1987)."

This preoccupation appears to begin in adolescence and continues past middle age. Eisele, Hertsgaard, and Light (1986) found that among 12 to 14-year-old girls, 78% preferred to weigh less. Allgood-Merten, Lewinsohn, and Hops (1990) found that in girls as young as age 13, poor body image contributed to depression. And Striegel-Moore, Silberstein, and Rodin (1986) reveal that in an ongoing longitudinal study of adults over age 62, the second greatest personal concern expressed by women, following memory loss, was change in body weight, a concern rarely expressed by men in the sample.

Hence, these studies indicate that it may be the case that preoccupation with weight issues is a hindering factor in resolving body and appearance acceptance for women but not men, and that this issue is a lifelong hindrance for women in this culture. If so, the developmental literature has not explored this difference.

The Psychology of Physical Appearance

Cash and Pruzinsky (1990) note that the psychology of physical appearance is concerned with:

a. External, objective attributes of physical appearance and their personal and social implications for human development and experience;
b. Internal, subjective representations of physical appearance and bodily experience, usually referred to as "body image."

Fisher (1990) further explains how body image has been studied, by listing nine topical areas of research: perception and evaluation of one’s own body appearance; accuracy of perception of one’s body size; accuracy of perception of one’s body sensations; ability to judge the spatial position of one’s body; feelings about the definiteness and protective value of the body boundaries; distortions in body sensations and experiences associated with psychopathology and brain damage; responses to body damage, loss of parts, and surgery; responses to various procedures designed to camouflage the body cosmetically or somehow “improve” it; and attitudes and feelings pertinent to the sexual identity of one’s body.

This study deals with both an objective attribute (weight) and two subjective measures (figure satisfaction and perceived physical ability). Weight and figure satisfaction were chosen as variables because, as the following section and Chapter Two explain, these are serious personal preoccupations for most college women, but they are not discussed in the psychosocial development literature. Perceived physical ability was chosen because it is an important part of Chickering’s theory, but one which may not have been sufficiently explored in terms of gender differences.

Chickering’s Discussion of Body and Appearance

Chickering discusses body/appearance in two vectors: Developing Competence (i.e., physical-manual competence) and Establishing Identity (i.e., acceptance of body and appearance). The first vector, Developing
Competence, has three components, one of which is Physical/Manual Competence. His discussion of this sub-vector focuses on athletic activities, wellness issues, and artistic activities that involve physical/manual skills. Weight issues are not mentioned.

In the fourth vector, Establishing Identity, Chickering notes, "...development of identity involves clarification of conceptions concerning physical needs, characteristics, and personal appearance (1969, p. 14)." This appears to be based on Erikson's description of one of the concomitants of identity as "a feeling of being at home in one's body (1959/1980, p. 127)." Chickering implies that "clarification of conceptions" means establishing a consistent sense of self and accepting one's body and appearance. Others have also interpreted it to mean accepting one's body and appearance (Rodgers, 1980/1989; Erwin & Delworth, 1980). However, Chickering's elaboration on this issue is limited to one brief mention of diet ("Some, with diet, exercises, and careful dress, aim to enhance strong points and to modify, compensate for, or at least disguise weak ones., 1969, p. 82"), and a cursory discussion of experimentation with fashion.

Chickering's description of the vectors varies in degree of specificity and precision about content (Widick, Parker, & Knefelkamp, 1978), and he mainly describes positive vector resolution. Although Chickering indicates that inadequate resolution leads to stress, anxiety, maladaptive behavior, and a decrease in the probability of resolving future tasks adequately, he usually describes only positive or favorable resolutions of vectors, rather than negative ones (Rodgers, 1980/1989). Hence, detailed descriptions of factors that hinder acceptance of body usually are not covered.
The omission of discussion of weight and weight satisfaction may also be indicative of working from a body of literature based mainly on the experiences of men. One of Chickering's descriptions of body acceptance reveals a male bias: "For older persons accustomed to relative stability in size and proportion, accustomed to wearing the same Sunday suit for five years, the upset and disorientation caused by shifts in physique, environment, and culture are hard to imagine (1969, p. 14)." "Relative stability in size and proportion" and "wearing the same suit for five years" are foreign concepts to most women of any age. As Attie and Brooks-Gunn (1987) note, "women reach adulthood having experienced many body-selves as a result of repeated efforts to modify their body to meet pre-pubertal ideals (p. 240)."

Other Psychosocial Theories

A brief review of other theorists dealing with adult development reveals similar lack of attention to weight and weight satisfaction. Farrell and Rosenberg's 1981 study of men discussed the body in terms of physical health and loss of strength and stamina through aging (pp. 17, 26, 29, 30). Levinson (1978), another theorist of men's development, mentions the body only when he briefly discusses the "decline of bodily powers" as it forces man to confront his own mortality (p. 213).

Even when the focus of development literature is on women, weight and body image are not considered. Baruch, Barnett, and Rivers (1983) include two questions regarding attractiveness (# 118 & 119), but never discuss them; one question concerning the ability to have children (# 43);
and several question about health issues. Facilitating the Development of Women (Evans, 1985), devotes less than three paragraphs to weight and body acceptance issues (pp. 50-51, 55). The indices of these books do not include the words body, weight, or eating disorders.

Body Acceptance in Psychosocial Development Research

Even when research reveals a possible relationship among gender, body acceptance, and psychosocial development, follow-up research appears not to exist. Erwin's 1982 study of college freshmen found that men scored higher on the "Conceptions about Body and Appearance" subscale of the Erwin Identity Scale than did women, and that while women's scores dropped their first semester, men's scores stayed the same. While both men and women had drops in those scores after the second semester, men's scores were still substantially higher than women's. Erwin did not discuss this finding or speculate on its implications. In fact, Erwin concludes: "This study supports the conclusion of other research that the impact of school environments is positive (p. 168)." What is positive about an environment that results in women devaluing their body?

What appears to be needed is further research to clarify what factors hinder or help resolution of acceptance of body and appearance, and whether there are gender differences on the nature of the factors. This study attempts to help close this gap. It examines Chickering's original concept of perceived physical ability and its relationship to identity (specifically body acceptance). It also incorporates two other potential factors (weight and
figure satisfaction) which may be more relevant for women's resolution of identity.

**Purposes of the Study**

Women's experiences with body acceptance appear to be different from men's. College women (indeed, perhaps women of all ages) seem to struggle more with body acceptance and express more dissatisfaction with their weight than men. They also have a more distorted view of their weight than men, are much more likely to be engaged in weight-loss behaviors than men, and are much more likely to experience eating disorders than men.

The purposes of this study were to investigate, in traditional age college women and men, the following: (1) whether there is a relationship between weight and the psychosocial development concept of body acceptance; (2) whether there is a relationship between figure satisfaction and the psychosocial development concept of body acceptance; and (3) whether there is a relationship between perceived physical ability and the psychosocial development concept of body acceptance. Finally, (4) if relationships exists, how similar or different are they for men and women?

Additionally, the study also investigated how weight, figure satisfaction, and perceived physical ability are related to other psychosocial development constructs.
Research Questions

The following questions were asked:

Is there a relationship between weight and acceptance of body and appearance? If a relationship exists, will it indicate that overweightness is related to lower levels of body acceptance? Will there be a gender difference?

Is there a relationship between figure satisfaction and level of acceptance of body and appearance? If so, will the relationship indicate that students who perceive their bodies as much different than their ideal score lower on acceptance of body and appearance? Will there be a gender difference?

Is there a relationship between perceived physical ability and level of acceptance of body and appearance? If so, will the relationship indicate that students who score higher on perceived physical ability score higher on acceptance of body and appearance? Will there be a gender difference?

In addition to the above research questions, each question was also asked using management of sexual emotions and sense of confidence as the dependent variables, as well as acceptance of body and appearance. These two constructs are subvectors of Chickering's Managing Emotions and Developing Competence vectors.

Finally, each question was asked using the following psychosocial development constructs as dependent variables: Establishing and Clarifying Purpose, Developing Mature Interpersonal Relationships, Academic Autonomy, Salubrious Lifestyle, and Intimacy. These vectors typically occur later in the Identity age range and after body acceptance has been resolved.
The researcher believed weight higher than recommended for height would correlate with lower acceptance of body and appearance for women. The researcher expected no such relationship for males.

The researcher expected that lower levels of figure satisfaction would relate to lower acceptance of body and appearance for women. The researcher expected no such relationship for men.

The researcher expected that lower levels of perceived physical ability would relate to lower levels of acceptance of body and appearance for men. The researcher expected no such relationship for women.

The researcher expected similar relationships between weight, figure satisfaction, and perceived physical ability and the other psychosocial development constructs.

Importance of the Study

This study brings new information in several areas. It further refines our understanding of Chickering's model, lending greater specificity to his concept of body acceptance by exploring three factors that may help or hinder its resolution, and providing an understanding of gender differences and similarities in that resolution. It expands our understanding of traditional aged students; much research has been done in introductory psychology classes or residence halls, leading to an underrepresentation of older traditional age students in the student development literature. It attempts to combine insights from two important bodies of work (weight and body image literature, and student development literature) to help student development practitioners help women struggling with weight, body image,
and eating issues. Finally, it provides the groundwork for later research into what factors and experiences on college campuses influence women's resolution of weight and eating issues.
CHAPTER II
REVIEW OF THE LITERATURE

This chapter describes the theory and research base for psychosocial development of college students, describes the cultural messages women receive about their bodies, and reviews studies regarding weight, eating, and body image which have implications for psychosocial development.

Theoretical Background:
The Psychosocial Development of College Students

Arthur Chickering’s landmark book, Education and Identity (1969), attempted to elaborate on and clarify White’s (1958) "sense of competence" and Erikson’s (1968) concept of "identity," and to add greater specificity and concreteness to these important but abstract concepts. Chickering also tried to challenge higher education to take notice of and concentrate efforts on students’ in-class and out-of-class experiences in order to facilitate development, and to increase the working knowledge of development necessary for decision-making by college administrators and faculty.

His work synthesized information from the 1965 Project on Student Development (a five-year study of institutional characteristics, student characteristics, attrition, and student development in 13 small colleges), the
work of various writers about late adolescent development, and the multitude of studies of college students in the 1950s and 1960s (for example, see Trent & Medsker, 1968 and Feldman & Newcomb, 1969).

The resulting product was a "conceptual framework. . . simple enough to be held in mind ready for application and comprehensive enough to be relevant (Chickering, 1969, p. 5)." Chickering called his seven content areas of development "vectors" because "... each seems to have direction and magnitude. . . (1969, p. 8)." Chickering later used the metaphor of a "Christmas tree to hang other ornaments on" to describe the model's structure, writing that the seven vectors "seem to work as a conceptual organizer (Thomas & Chickering, 1984, p. 394)." Following is a brief description of each vector as described in Chickering's original 1969 work, along with his 1984 reflections on how he would modify them, as well as Moore and Upcraft's 1990 comments:

1. Achieving Competence. Chickering used the metaphor of a pitchfork with three tines to represent the three kinds of competence students are struggling to develop: intellectual, physical/manual, and social/interpersonal. The "handle" of the pitchfork is the overall sense of competence, "the confidence one has in his ability to cope with what comes and to achieve successfully what he sets out to do (1969, p. 9)." In 1984, Chickering said that he would give more detailed attention to intellectual and interpersonal competence and their importance in the world of work, and that we "need to deal more comprehensively with the whole area of sense of competence, perhaps recognizing the particular importance of that area for women and minorities "(Thomas & Chickering, 1984, p. 395). Moore and Upcraft (1990) add the need to expand physical/manual
competence to include what we now know about nutrition, exercise, and wellness.

2. Managing Emotions. Students do become aware of their feelings of sexual desire and anger; however they need to learn to trust them. They can then learn how to appropriately express emotions. In 1984 Chickering discussed the cultural changes that have made this whole area more complex, especially with the wider range of behaviors now considered acceptable in sexual and aggressive behaviors. Moore and Upcraft (1990) write about the importance of this vector in light of the increase in campus violence, substance abuse, date rape, and sexual harassment, and they add the student's need to deal with anxiety and depression, and accordingly, the process of learning to control and express these impulses.

3. Becoming Autonomous. Autonomy refers to mature independence, which has two strands: emotional (being free of continual and pressing needs for reassurance or approval) and instrumental (the ability to carry out activities and cope with problems without seeking help, and the ability to be mobile in relation to one's needs and desires). The final point in this vector is the move into interdependence, the recognition that one "cannot receive the benefits of a social structure without contributing to it, that loving and being loved are necessarily complementary (1969, p. 13)." Chickering said in 1984 that the emphasis in this vector should shift dramatically to the recognition of interdependence. Moore and Upcraft (1990) note the impact of increasing global interdependence and the resulting need for social responsibility.

4. Establishing Identity. Chickering quotes one of Erikson's definitions of identity: "The accrued confidence that one's ability to maintain inner
sameness and continuity is matched by the sameness and continuity of one's meaning for others [1950, p. 135]." This vector is a culmination of the first three vectors and sets the stage for the next three vectors. The developmental tasks here involve clarification and acceptance of conceptions of physical needs, characteristics, and personal appearance; the clarification and acceptance of sexual identity; the choosing of sex-appropriate behaviors; and the clarification and acceptance of one's first adult lifestyle. Chickering's 1984 conception of this vector changed little, except for the recognition of the increased impact of pluralism and the emphasis on self-fulfillment and self-actualization. Moore and Upcraft would add gender role development (including sexual orientation) and would dissolve the age norms linked to career and family.

5. Freeing Interpersonal Relationships. This refers to the development of increased tolerance for a wider range of people, as well as an increased capacity for intimacy with significant others, peers, parents, and persons culturally different from oneself. Chickering's 1984 interview recognizes the increasing importance of the tolerance aspect of this vector in light of increasing cultural pluralism. Moore and Upcraft note the need to expand the recognition that intimacy can occur in relationships other than marriage, and mention single parenthood, dual career couples, unmarried couples living together, and homosexual couples.

6. Clarifying Purpose. Students move from "who am I?" to "who am I going to be?"; from "where am I?" to "where am I going?" They begin to make plans in the area of avocational and recreational interests, vocational plans, and lifestyle considerations. Chickering's 1984 reflection leaves this vector essentially unchanged, but recognizes the difficulty of integrating the
three areas during times of economic constraint. Moore and Upcraft remind us of the multiple career perspective which has replaced the traditional "one life, one job" path.

7. Developing Integrity. This refers to the "clarification of a personally valid set of beliefs that have some internal consistency and that provide at least a tentative guide for behavior (Chickering, 1969, p. 17)." It involves humanizing of values (shifting one's belief in the absoluteness of rules to a more relativistic view), personalizing of values (selecting values for self), and developing congruence between one's behaviors and one's beliefs. In 1984 Chickering discussed the need to expand this vector to incorporate the work of Perry, Kohlberg, and Gilligan. Moore and Upcraft mention the responsibility of institutions to educate students about environmental pollution, toxic waste, the exploitation of the powerless, and the increasing gap between the haves and the have-nots.

Finally, in 1984, Chickering said that he would encourage more emphasis on the interaction of the various vectors - the interaction between cognition and affect, between intellect and emotion. He noted that this could go in the fourth vector, or in a separate discussion of ego development.

How Development Occurs

Psychosocial development occurs as a result of interaction between the individual and the environment (Miller & Winston, 1990). Chickering interprets Sanford's view, that development occurs "... when a student meets challenges that require new responses, and when he is free to give up earlier response patterns and defenses (1969, p. 293)." This challenge will
require a new response only at the moment of readiness, that is, when the student is consciously involved with trying to resolve a given issue.

Development along each vector also involves processes of differentiation and integration:

Increased differentiation occurs when one comes to see the interacting parts of something formerly seen as unitary, when one distinguishes among concepts formerly seen as similar, when actions are more finely responsive to purposes or to outside conditions, when interests become more varied, tastes more diverse, reactions more subtle. In short, as we become more complex human beings... But increasing differentiation must be accompanied by increasing integration, and this is the other major task of education. Relationships among parts must be perceived or constructed so more complex wholes result. (Chickering, 1969, p. 292).

Development is Continuous and Cumulative

Two of the most important concepts for the purpose of this paper are that development is continuous, and development is cumulative. Chickering (1969) wrote that not all students progressed along all vectors at the same time. Rodgers noted:

Adult stages are triggered more for psychological reasons than biological ones. As a consequence, adult stages may be more culture bound than biologically universal. Certain crises may be predictable for many adults in a given culture, but not for every adult. In other words, the question of when and how adult stages are triggered becomes a function of person-environment interaction, especially personal interaction with the social environment. (1980/1989, p.186)

Miller and Winston's recent interpretation is that all students go through each content area, but "individual life experiences influence whether change is optimal, minimal, or somewhere in between (1990, p. 102)." For some it does not happen at all.
Development is Cumulative

As noted in Chapter One, the adequacy of resolution of earlier vectors can influence the quality of the resolution of later vectors and stages. Miller and Winston (1990, p. 107) note: "A person's past experiences influences significantly what his or her future will be." More specifically,

Successful accomplishment or achievement of a developmental task enables the individual to acquire the experiential base needed to accomplish future developmental tasks. Failure to meet successfully the challenges inherent in a given developmental task results in social disapproval and may hinder further growth in that area or can lead to maladaptive adjustment [Havigurst, 1953, 1972; Kitchener, 1982; Mines, 1982]. (Miller & Winston, 1990, p. 104)

For example, a person who resolves the task of achieving competence in a positive way at age 20 will be much more likely to resolve the task of clarifying purpose positively at age 25 than will a person who brings to that task a sense of intellectual, social, and/or physical incompetence. The importance of cumulative development for this study will become more obvious when this chapter discusses the lifelong nature of women's struggles with weight.

Whether adequately or inadequately resolved, some of the issues in the vectors can re-cycle in a person's life (Rodgers, 1980). Studies examining the lifelong preoccupation with weight (Rozensweig & Spruill, 1987; Stunkard & Burt, 1967; Striegel-Moore, Silberstein, & Rodin, 1986), which will be reviewed later, indicate that this may be happening in the area of weight and body image issues.
Chickering's Popularity With Practitioners

Chickering’s goal was to advance practice rather than theory (Thomas & Chickering, 1984). His work was immediately attractive to practitioners because of the familiarity of the descriptions and practicality of the writing. Chickering’s continuing popularity is evident in the fact that Education and Identity has been referenced 125 times in the NASPA Journal and Journal of College Student Development in the past 10 years (see Appendix A).

Justification for Further Refinement of Chickering’s Work

Five areas of concern justified further exploration and refinement of Chickering’s model:

1. Lack of specificity/precision: Chickering discusses changes in global fashion; there is a lack of attention to differing motivational levels of students and to the specific processes of change within the different vectors (Widick, & Parker, & Knefelkamp, 1978). In his concluding chapters (1969), Chickering himself challenges the reader to move his ideas to greater levels of specificity, when he suggests that we identify specific subgroups and study the impact of college for them. This study will examine specific subgroups of students struggling with weight, figure satisfaction, and physical ability issues.

2. Lack of attention to negative outcomes (Rodgers 1980/1989): Although Chickering makes reference to the general negative outcomes of failing to resolve vectors adequately, discussion of specific vectors is limited to the experiences of students who resolve them adequately. Student development practitioners would benefit from a better understanding of students who do not adequately resolve issues. This study will compare the
experiences of students who have negative experiences with those who have positive experiences.

3. Potential gender bias: As noted in Chapter One, because Chickering was building on a base of largely male-biased work, he may have neglected to see patterns unique to women. Rodgers (1989) noted that Erikson was biased in favor of men, and that Chickering's generalizations need to be differentiated for men and women. Psychosocial development may be different for women for both biological and social reasons. First, women's different physical/biological characteristics may create differences. For example, because women can become pregnant their experience of sexuality and sexual responsibility will almost certainly be different from men. Second, society's expectations and pressures are different for women than men, and we must be sensitive to the different cultural press for women (Miller & Winston, 1990). The dramatic gender differences in weight concern and eating habits described in Chapter One and later in this chapter present us with an ideal context for further exploration of gender issues in psychosocial development.

4. Finally, like any good psychosocial theory, Chickering's ideas are not static, because as society changes, developmental issues may change (the "social" in psychosocial). Although many of Chickering's observations were of normative age-related influences, his data was no doubt influenced by normative history-graded influences (Baltes, Reese, & Lipsitt, 1980; Rodgers, 1990; Miller & Winston, 1990), such as the Vietnam War, the Civil Rights Era, the Women's Liberation Movement, and an increasingly liberal sexual morality. Today's students, for example, face very different sexual choices and pressures because of AIDS and very different occupational choices.
because of technology and economic stress, and they are dealing with the "fallout" or later stages of the Civil Rights and women's movements. This chapter will discuss how changing fashion and fitness norms influence women's perceptions of their bodies. And, it will be interesting to see the effects on both women and men of the current fitness emphasis.

Research and Refinements

Published measurement instruments were developed at the University of Georgia and the University of Iowa.

The University of Georgia: SDTI, SDTI-2, and SDTLI:

The Student Development Task Inventory was developed at the University of Georgia, has undergone a number of refinements, and is currently available as the Student Developmental Task and Lifestyle Inventory.

Judith Prince originally created the Developmental Task Scales for College Students by collecting and classifying spontaneous problem statements from 16 to 25 year old high school and college students. Using that as a base, Miller, Prince, and Winston used a Delphi-style study with student affairs practitioners and faculty to create the SDTI. They then revised the SDTI to re-word items into more behavioral statements and to restructure it to improve its psychometric properties. The resulting SDTI-2 measured three tasks: Developing Autonomy (AUT, similar to Chickering's third vector), Developing Purpose (PUR, Chickering's sixth vector), and Developing Mature Interpersonal Relationships (MIR, Chickering's fifth vector). The original research suggested that the three were on a
developmental continuum but subsequent research failed to confirm that. Developing Autonomy seemed basic, but the other two seemed to be independent of each other (Winston, Miller, Hackney, Hodges, Polkosnik, Robinson, & Russo, 1981). Theoretically this makes sense, because the second two tasks should be going on simultaneously, according to Chickering's original scheme (Rodgers, 1980/1989).

The SDTI-2 was used to study ideas as varied as membership on athletic teams, place of residence, religious practices, graduate school aspirations, returning versus traditional students, and involvement in student activities (Winston & Polkosnik, 1986), environmental factors (including financial aid status, quality of relationships, and place of residence) (Erwin & Love, 1989), instructional design (Stonewater & Daniels, 1983), participation in remedial programs (Pollard, Benton, & Hinz, 1983), and the effects of working (Williams & Winston, 1985).

The SDTI-2 has recently undergone rather substantial change in becoming the SDTLI. Reasons for revisions included questions about the scale structure of the SDTI-2, objections about the exclusive emphasis on heterosexual relationships in MIR, and the need to add new areas of importance (measures of cultural participation, health and wellness activities, and a response bias scale).

Winston (1990) writes that the SDTLI is "based on Chickering's general conceptual framework, but does not completely conform to the vector structure proposed in 1969. Through the various revisions of the SDTI, change was dictated by the nature of the data collected from college students (p. 109)." The revisions were based on responses from 2900
students, in three separate data collection periods, in at least 18 colleges in the U.S. and Canada.

The final instrument has three tasks: Establishing and Clarifying Purpose, Developing Mature Interpersonal Relationships, and Academic Autonomy, and three scales: Salubrious Lifestyle, Intimacy, and Response Bias. They will be discussed in more detail in Chapter Three. The most obvious change is the lack of a separate Autonomy task. Approximately 60% of the SDTI Autonomy items were incorporated into other tasks of the SDTLI. Winston (1990) explains:

The authors did not seek to remove the Autonomy Task when they began revision of the SDTI-2; the results of repeated item and factor analysis, however, failed to confirm autonomy as a separate construct. . . . It seems, after considerable reflection, that 'autonomy' is difficult to measure outside a specific context. . . . Autonomy is an essential condition for accomplishing other tasks, but does not stand alone as a construct. (p. 118)

The Iowa Instruments

A second group of instruments was developed at the University of Iowa. The most widely used instrument was the Erwin Identity Scale, which measures Conceptions About Body and Appearance, Sexual Identity, and Confidence. It has been used to explore longitudinal changes in students, and to identify environmental factors which might account for differences (Hood, Riahinejad, & White, 1986).

White and Hood (1989) describe their attempts to validate Chickering's model using the Iowa instruments (Developing Purpose Inventory, Erwin Identity Scale, Developing Competence Inventory, Managing Emotions Inventory, Developing Autonomy Inventory, and Mines-Jensen Interpersonal Relationship Inventory) and the Parker
Cognitive Development Inventory (to measure the seventh vector) with 255 students. Neither sex nor race was analyzed. Factor analysis revealed three primary factors: "self direction" (paralleling Developing Purpose), "cognitive-ethical development" (paralleling Developing Integrity), and "identity" (paralleling Establishing Identity). The other two factors identified were "resource management" and "confidence" (similar to Developing Competence). White and Hood also found little evidence for parts of Chickering's autonomy concept (the Emotional Independence-Parents and Mobility subscales) as measured by the Developing Autonomy Inventory. Autonomy appears to have undergone some changes since Education and Identity.

**Conclusions**

It appears that Chickering's general framework is still a useful way of conceptualizing college student development. It provides a coherent structure and a common language for student development professionals. If we continue to be sensitive to individual and cultural differences, and if we view his theory as a basic structure to be built on and modified ("the Christmas tree") as society changes and as we ask new questions, it can help us find better ways to serve the students with whom we are entrusted. Using that foundation, let us now turn our attention to women's struggles with weight.
Cultural Messages About Women's Bodies

Rather than beginning this review with an examination of the individual, it will be instructive to briefly examine the environment—the messages women receive about fat and food. Roberta Pollack Seid (1989) has noted how those messages have changed over time. Prior to the 20th century the "ideal" body size could be described as plump, ample, fleshy. She notes, for example, that the nudes depicted in paintings from 1300 to 1500, when viewed through 20th century eyes, "seem like the 'before' photos for weight loss ads (p. 40)." In the late 1800s a hearty appetite was assumed to be a sign of good health, and "... body fat had profoundly positive associations [maternalism, prosperity, the clean temperate life] which we in the 20th century have either inverted or rejected (p. 75)."

If we fast-forward our review to the late 1900s, we see a startlingly different picture. Studies show that current standards equate thinness with attractiveness and success, that those standards are more pronounced for women than men, and that this has resulted in dramatic gender differences in body size ideals and eating expectations.

Stigmatization of Obesity

Several studies document that the obese are socially stigmatized for their obesity (Monello & Mayer, 1966; Cahnmann 1968; Allon, 1975). Wooley and Wooley (1979) conclude, "Excess body fat is probably the most stigmatized physical feature, except skin color, but unlike color is thought to be under voluntary control (p. 69)." Attie and Brooks-Gunn (1987) describe the "antifat bias" evident in American life through the massive food
advertising and diet industries; the idealized body image in fashion, 
entertainment, and art; the norms of attractiveness in the workplace; our 
socializing institutions; and interpersonal relationships. They describe two 
enduring effects of the stigmatization of fat: the victimization of fat people 
and the internalization of social prejudices which results in low self-esteem.

**Reinforcement for Women**

Silverstein, Perdue, Peterson, Vogel, and Fantini (1986) examined the 
changing standards of "curvaceousness" and concluded that there is an 
inverse relationship between curvaceous standards and expectations of 
women's intelligence. "Curvaceousness" was determined by a measure of 
bust-to-waist and hip-to-waist correlations in magazine photographs. By 
comparing photographs at four-year intervals from *Vogue* and *Ladies Home 
Journal* to the proportion of employed women working as professionals at 
the beginning of each decade since 1900, they found that as the proportion of 
professional women increased, curvaceousness decreased. They also found 
that as the proportion of women graduating from college graduation 
increased, curvaceousness decreased, and concluded "... as the number of 
women who might be expected to be particularly concerned about what 
others think of their intelligence increases, the curvaceousness of the 
standard decreases (p. 911)."

Silverstein, Peterson, and Perdue (1986) continued their analysis of 
the curvaceousness standard by examining references to obesity in the 
*Reader's Guide to Periodical Literature*. They found that when the standard 
became non-curvaceous, the proportion of articles dealing with obesity one 
year later increased. They also found that in the 1920s, when the thinnest
standard was popular, the proportion of very thin college women increased and the literature of that time made several references to what would probably be called eating disorders today. This led them to conclude, "... eating disorders are not just instances of individual psychopathology. They are rooted in societal pressures experienced by women (p. 904)."

Garner, Garfinkel, Schwartz, and Thompson (1980) looked at two cultural standards of attractiveness (Playboy models and Miss America contestants) and dieting articles in women's magazines from the years 1959 through 1978. During that period Playboy centerfolds became thinner and had more "tubular" figures. Miss America winners and contestants became thinner; since 1970, winners were always thinner than other contestants. Six popular women's magazines averaged 17.9 "diet" articles per year from 1959 through 1968; they averaged 29.6 per year for 1969 through 1978. During these same two decades, the average woman under 30 became heavier.

Wiseman, Gray, Mosimann, and Ahrens (1992) updated this study and found the trends continued for a third decade. Miss America contestants continued to decrease in body size through 1988, and Playboy centerfolds remained at low weights. For the ten years of the study (1979-1988), 69% of Playboy centerfolds and 60% of Miss America contestants had weights at least 15% below the expected weight for their age and height categories (the authors note that a weight 15% below expected is a major criteria for anorexia nervosa). Diet articles continued to increase dramatically. For the period of 1959 through 1988, a significant positive correlation with years was found for the percentage of diet articles (.78), exercise articles (.88), and diet/exercise articles (.88). The only change in that
time was that beginning in 1981, the number of exercise articles began to surpass the number of diet articles.

Silverstein, Perdue, Peterson, and Kelly (1986) examined messages in the popular media, and found that 69% of the female characters on popular 1982 TV programs were very thin, compared with only 17.5% of the male characters. Only 5% of the female characters were heavy, compared to 25.5% of males. An examination of 12 issues each of four popular women's magazines and 4 popular men's magazines was also instructive: in the women's magazines the total number of ads for diet foods was 63; in men's -1. The women's magazines contained 96 articles dealing with body shape or size; the men's contained 8. The women's magazines contained 1179 advertisements for food; the men's, 10.

Hesse-Biber (1991) compared a chart of desirable weights from “one of the leading and largest diet and weight-loss centers in the United States” to a chart of desirable weights commonly used by medical professionals (the Metropolitan Life Insurance Company's 1983 chart, based on mortality rates) and found that the weight-loss center chart showed lower weights for both men and women than the medical chart. For men, the average difference was about five pounds; for women, it was close to 20 pounds.

To sum up, our society promotes a standard of thinness as being attractive and therefore worthwhile. This standard is reinforced in the mass media more for women than for men. Women are encouraged to reach this standard by dieting, although very recent media has placed stronger emphasis on exercise.
Women's Reactions to These Messages

Bar-Tal and Saxe (1976) reviewed 39 studies and concluded that attractiveness is seen as an indication of successful role fulfillment for women, but not for men. Women have heard these messages and reacted by attempting to change the way they look. Seid (1989) notes that historically the primary way women reacted to changing fashion standards was through the use of cosmetics, ornamentation, and clothing. Those practices continue today:

Consider the average 'well-adjusted' woman in our society, dressing for a day at work: She wears makeup to smooth out her skin tone, highlight her 'best features,' and disguise her worst ones. A typical makeup application includes moisturizer, foundation, undereye concealer, blusher, powder, eyeliner, eyeshadow, mascara, lip pencil, and lipstick. She shaves her legs and underarms, tweezes her eyebrows, curls her eyelashes, and may use depilatories or bleach to eliminate or disguise facial or bikini hair. Her hair is probably chemically curled or straightened, and may be chemically colored as well; she may use a curling iron or electric curlers, and probably uses gel or mousse as well as hairspray to hold all this re-shaping in place. Some clothes are chosen for comfort, but many for how they can reshape her body - underwire, padded, or minimizing bras; control-top pantyhose in colors and patterns to elongate or shorten the body; high heels to make her legs look good; shoulder pads to balance a bottom-heavy figure; vertical stripes to slenderize or horizontal ones to add weight. She finishes this off with earrings inserted into pierced holes, necklaces or scarves of a length and style to either emphasize or de-emphasize bustline or double chins or neck wrinkles; and finally, perfume, to change whatever body odor is left after the scented soap and cosmetics and deodorant. (McClellan, 1988, p. 4)

Cosmetic surgery is also on the rise. All of these cosmetic changes, whether minor (makeup) or major (surgery) still leave a woman with the realization that to be truly attractive and successful, she must be thin. A review of research will show that many women have reacted to these
messages by internalizing unrealistic standards and by adopting dieting and weight dissatisfaction as a way of life.

**Unrealistic Standards**

Several studies show that all these messages have resulted in women internalizing unrealistic standards of thinness. Garner, Rockert, Olmsted, Johnson, and Cosicina (1985) write, "It is worth noting that just over 5% of female life insurance policy holders between the ages of 20 and 29 are as thin as the average Miss America Pageant winner between 1970 and 1978 (p. 516)."

Storz and Greene (1983) showed 203 female high school students an artist's rendition of five female figures representing 20% underweight, 10% underweight, average, 10% overweight, and 20% overweight. Subjects preferred the figures that weighed 10 to 20% below average.

McBride (1985) replicated Storz and Greene's work with 79 undergraduate women; 56% chose the 10% below average figure as ideal, and 29% preferred the 20% below average figure (which meets some definitions of anorexia). When asked which was the most feminine figure, 49% indicated the 10% below average figure, and 35% indicated the 20% below average figure. When asked how satisfied they were with various aspects of their appearance, general satisfaction was relatively high, with "general appearance" rated moderately to very satisfied by 79% and "facial attractiveness" rated moderately to very satisfied by 72%. When asked about weight, the results were different. The percentages of respondents who were moderately to very dissatisfied were as follows: for thighs, 65%; for hips,
71%; buttocks, 46%; waist, 40%; and weight, 57%. Finally, 86% said they wanted to lose weight.

McBride hypothesized two other sociocultural culprits: the current middle class preoccupation with health and fitness, which reaches the status of obsession and fat phobia for many; and the women's movement. She writes,

Despite the many positive changes it has brought about in women's lives, the women's movement must take some responsibility for our current preoccupation with thinness. The women's movement has convinced many women that they can have it all - careers and family, brains and beauty. The liberated woman is an intelligent, competitive, self-made woman by day and a glamorous, sultry, sexy, femme fatale at night. The liberated woman is NOT fat; she's always in control. (1985, p. 17)

She concluded: "The point is that women no longer know what a normal, healthy female figure looks like. And we appear to have forgotten what a wide variety of physiques are included within that normal range (p. 18)."

Attie and Brooks-Gunn (1987) summarize the impact: "Given the pervasiveness of cultural influences and reinforcing personal experience, a woman may never question the validity that she is overweight or has an undesirable body (p. 220)."

**Dieting/Dissatisfaction as a Way of Life**

The internalization of unrealistic weight standards is so pervasive that dieting and dissatisfaction with weight have become expectations for women. In other words, to be an adult female means to be unhappy with one's weight and to be actively engaged in trying to control it.
Dieting is seen as a more desirable trait in women than in men, as found in two studies of undergraduate introductory psychology students at the University of Texas. Hawkins, Turrell, and Jackson (1983) administered the Restraint Scale and the Personality Attributes Questionnaire (PAQ), an instrument with three scales: M+ includes stereotypically masculine attributes which are desirable for both sexes (agency); F+ includes stereotypically feminine traits which are desirable for both sexes (communion); and the M-F scale is a bi-polar measurement of traits considered socially desirable for one sex but not the other. They found that socially desirable trait femininity was correlated with dieting tendencies for women, whereas for men restraint correlated with socially undesirable feminine traits.

Ruderman and Grace (1988) found that among female college dieters, dieting has acquired such positive connotations in our society that it has become associated with morality and goodness. Overall, the picture of the restrained eater revealed by the data is one of a narcissistic woman who is dissatisfied with her body and perceives herself as a decent, moral person. (pp. 366-367)

Preoccupation with weight and dissatisfaction with one's body seems to be a cultural expectation for women. Huon, Brown, and Morris (1988) surveyed bank employees and shopping mall customers (150 women, mean age 30.8, 50 men, mean age 29.1). Respondents were given a list of all the characteristics associated with bulimia and anorexia and asked if each trait was like or unlike most women, and if each was normal or abnormal. The majority of both women (89%) and men (98%) believed that most women are dissatisfied with their bodies. Further, very few (10% of women, 17% of men) believed such dissatisfaction is abnormal. When asked specifically
about weight, the results were only slightly more encouraging. Both women (83%) and men (76%) believed women are preoccupied with weight, and few (20% of women, 24% of men) believed the preoccupation is abnormal. (Note: the place of this study was not indicated, but since all authors were from Australia we may assume it was conducted in Australia; beliefs may be somewhat different with an American population.)

Attie and Brooks-Gunn (1987) summarize the situation: "Dieting (or talking about it) has become a national pastime for women, possibly akin to sports for men (p. 236)."

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The Result: Women at War With Their Bodies

It seems clear that the cultural messages about women's bodies are internalized in two ways: women's belief that weights below average are attractive and desirable; and their belief that dissatisfaction and weight loss preoccupation are normal and desirable pursuits for healthy adult women. The result of these beliefs is, in Seid's (1989) words, a nation of women "at war with their bodies."

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Puberty

The war begins in puberty. Studies indicate that the cultural messages girls receive about women's bodies interact with the physical changes of puberty to create dissatisfaction during adolescence.

Cash, Winstead, and Janda (1986) note that "Little boys are taught to be proud of themselves because they are strong and athletic. Little girls learn to value beauty (p. 31)." Striegel-Moore, Silberstein, and Rodin (1986) note
that little girls learn from families, teachers, books, and television that their appearance is important and they should be concerned with it.

Given these messages, the physical changes associated with puberty become problematic for girls in a way not experienced by boys. An increase in fat is a normal developmental phenomenon that accompanies the onset of menarche for girls (Attie & Brooks-Gunn, 1987). As they begin to sexually mature both boys and girls gain weight, but the weight gain indicates fat for girls and muscle for boys. Unfortunately that means that maturity brings boys closer to the ideal (muscular) adult male, but it brings girls further from the ideal (thin) woman (Striegel-Moore, Silberstein, & Rodin, 1986).

Duncan, Ritter, Dornbusch, Gross, and Carlsmith (1985) summarized data from the National Health Examination Survey, a national probability sample of 5735 12 to 17 year olds: Students were classified as Early, Mid, or Late maturers, based on physical changes. Early maturing boys were the most satisfied with their height and weight, whereas the early maturing girls were the most dissatisfied with their weight, with 69% preferring to be thinner (only 27% of late maturing girls wished to be thinner). They concluded,

The majority of girls became dissatisfied with their weight as they matured, and females from the higher social groups were more likely to want to be thinner than females from lower groups. Thus, a normal developmental process is being viewed negatively by females and positively by males. (p. 227)

Rosen and Gross (1987) studied 1373 high school students. On the day of the survey, 63% of the girls and 16.2% of the boys reported being on weight reducing regimens; 9.1% of the girls and 28.4% of the boys were trying to gain weight. Only 25% of the girls were satisfied with their weight,
compared to 50% of the boys. The authors noted that compared to studies from 1966, 1967, and 1971, the rate of weight reduction among high school girls had doubled.

They also found that white and Hispanic girls were more likely to be on a reducing diet than black or Asian girls. Across all social classes black girls were more likely than white girls to be trying to gain weight and less likely to be trying to lose weight. However, the accompanying numbers still showed more black girls (47%) trying to lose weight than trying to maintain (28%) or gain (24%).

Eisele, Hertsgaard, and Light (1986) studied 12 to 14 year old girls, using the Eating Disorders Inventory, and found that although 81% were in the range for ideal weight or underweight, 78% preferred to weigh less. Only 14% were satisfied with their current weight. The 19% who were overweight had significantly higher scores on the Drive for Thinness and Body Dissatisfaction subscales. They found that the older the girl, the higher the dissatisfaction with her body.

A recent national conference on smoking and body weight demonstrates the tragic effects. Powers (1990) reported on a conference about smoking and weight control, and described studies by Ritenbaugh and Klesges of adolescent girls who are using cigarette smoking as a weight control measure: Ritenbaugh's continuing study of 300 teenage girls in Arizona has found that the percentage of girls smoking rose from 9% to 32% during high school, primarily due to their desire to be thin. Klesges found that in a study of 880 Memphis (TN) parochial school students, about half of white teenage girls surveyed who smoke said they smoked to help control their weight. These findings are consistent with Biener's (1987) assertion
that women are more likely than men to report that fear of weight gain keeps them from giving up smoking; and that, compared to men, women entering smoking programs are significantly less confident that they will be able to resist the temptation to smoke when they want to avoid eating.

To sum up, gender differences in weight satisfaction emerge at a young age, with girls as young as 12 exhibiting dramatically higher levels of body dissatisfaction, distortion, and unhealthy behaviors than boys. We will see that girls' wars with their bodies continue through adolescence and young adulthood and become a lifelong struggle for many. The struggle is expressed in four ways: distortion of body image, unhappiness with body size, attempts to lose weight, and a tangled and complex relationship with food. The struggle appears to be exacerbated by the college environment. We will also see that some studies have found men to distort their body image in the opposite direction, with very little follow-up research on this finding.

Body Image Distortion

Because women lack an accurate perception of what "normal" weight is, many do not have an accurate perception of how their bodies compare to the norm. Previously cited studies found that 26.8% of normal weight college women perceived themselves as normal, compared to 58.8% of the men (Mintz, 1984); and that 45% of women classified as underweight by actuarial tables classified themselves as overweight (Wooley & Wooley, 1984). Numerous other studies confirm this phenomenon.

Thompson and Thompson (1986) studied 30 male and 30 female college students, whose weight was within 10% of the ideal weight for their
height (according to Metropolitan Life Insurance Tables) and who had no history of eating disorder behaviors. Subjects used a light beam technique to estimate the size of their body parts (cheeks, waist, hips, thighs). On average all subjects overestimated their body size; females had significantly higher distortion scores than males, and lower self-esteem scores.

Cash, Winstead, and Janda's 1986 Psychology Today body image survey summarized information from 30,000 respondents, along with a deeper analysis of a 2000-person sample chosen to represent the adult population in sex and age. The sample was better educated than the general population and underrepresented minority groups. Men classified themselves more accurately than women: underweight women were more likely to consider themselves normal, and normal weight women were more likely to consider themselves overweight. All overweight women classified themselves accurately, whereas some overweight men did not.

Mable, Balance, and Galgan (1986) studied 75 male and 75 female university students and found that women perceived their weight deviation from the norm at over 15% above the actual deviation; men distorted less than 1%. The norm was defined as the midpoint of the appropriate height category on the Metropolitan Life Insurance tables.

Galgan and Mable (1986) extended and refined the study with 75 non-eating disordered college women (ages 17-32), all of whom were within 20% of the appropriate midpoint weight of Metropolitan norms. Although subjects were, on the average, 4.41% below the midpoint for their height-weight categories, they perceived themselves to be 9.7% overweight. The women had moderately positive feelings about their faces but moderately negative feelings about their body size, demonstrating significantly less
satisfaction with body size than facial features. Out of 10 features (lips, eyes, hair color, nose, teeth, hips, weight, thighs, body build, and waist), the lowest satisfaction was with weight (2.31 mean on a 5.0 scale).

Slightly different results were found by Miller, Coffman, and Link (1980) in their study of 46 female and 22 male New York University undergraduates. Consistent with previously cited studies, almost 70% of the women thought they were overweight, when only 39% actually were overweight. Men's estimations of their size were more accurate than women, but 18% of normal-weight men believed they were underweight.

Unhappiness with Body Size

Galgan and Mable's findings about unhappiness with body size is supported by several other studies. Recall the previously cited studies which revealed that 86% of college women wanted to lose weight (McBride, 1985); that 64.4% of Ms. readers would like themselves better if they weighed less (Van Gelder, 1987); and that twice as many college men as women were comfortable with their body shape or figure (Frese & Frese, 1990).

Fallon and Rozin (1985) conducted what has become a classic study on body image. Students (248 men and 227 women) were shown a set of nine figure drawings ranging from very thin to very heavy, and asked to indicate their current figure, their ideal figure, and the figure they thought would be most attractive to the opposite sex. Men rated the three as almost identical. Women rated their current figure as heavier than the most attractive, which was in turn heavier than the ideal.

Silberstein, Striegel-Moore, Timko, and Rodin (1988) expanded Fallon and Rozin's work and found different results. A majority of both women
(77.3%) and men (78.2%) selected an ideal figure different from their perceived figure. Silberstein, et al., believe the reason for the difference between their findings and the findings of Fallon and Rozin was differing scoring methods. Fallon and Rozin used actual scores, not absolute value scores, so that on the calculation of perceived-ideal discrepancy, positive scores would cancel out negative scores. The men in this study were as likely to want to be heavier (43.4%) as lighter (34.8%), unlike women, who overwhelmingly expressed a desire to be lighter (75%; only one woman wanted to be heavier).

Drewnowski and Yee (1987) studied 100 male and 131 female college freshmen at a Midwestern university and found that 85% of the women wanted to lose weight (with only 4% wanting to gain weight). Men were equally divided among those wanting to lose (45%) and those wanting to gain (40%). Women were more likely to be dieting to lose weight; whereas men were more likely to be exercising.

Thompson and Psaltis (1988) replicated and extended Fallon and Rozin's work with college females; they also sought to distinguish between the affective and cognitive experiences of weight by asking "how do you feel most of the time?" as well as "how do you think you look?" Ideal size and size thought to be most attractive to men were significantly thinner than what they thought their current figure was, how they felt most of the time, and how they thought others saw their figure. How they felt most of the time was higher than how they thought, ideal, and what they thought was most attractive to men. There was no difference between how they thought they looked and how they thought others saw them, but how they felt was larger than how they thought others saw them.
Birtchnell, Dolan, and Lacey (1987) studied female hospital staff members. All were within a "normal" range of weight (89.5% to 127.8% of the mean matched population weight), and none were eating-disordered. The subjects who were most satisfied with their actual weight were those whose weight was below average for their height and age.

When Branch-Simpson (1984) asked black students to "Tell me about your physical self," she received clearly different answers from men and women. Sixty-five percent of men described themselves positively, as compared to 25% of women. The women mentioned specific parts of their bodies, personality, height, and weight. Weight and height were mentioned by more than twice as many females as males. Branch-Simpson summarizes:

When students talked about their physical selves, the males for the most part were positive about themselves and most said they were good looking or attractive to females. None were negative. The females, on the other hand, were very self critical. The few positive females did not seem to be as confident as the positive males. Several females said that they wavered in how they felt about their physical selves. This wavering was perceived to be the results of ups and downs in relationships with males. (p. 148)

One study (Kurtz, 1969) concluded that women were more positive about their appearance than men; unfortunately the findings were not presented in enough detail to analyze why that might be true. One possible reason is that an overall satisfaction score was obtained, with equal importance assigned by the researchers to 30 body concepts (for example, hair color, skin texture, and shape of ears were counted the same as weight or body build). No explanation was given as to how the body concepts were
chosen, and no effort was made to solicit respondents' input as to the relative importance of various body parts. Since information was only presented in final summary form, it was not possible to determine on which specific concepts men might have scored higher than women. The study did note that women had a more clearly differentiated body concept than men, leading the author to conclude, "This finding suggests that greater awareness and concern over bodily appearance may be more acceptable in the female than in the male (p. 629)." He attributes it to "the fact that it is part of the females' role prescription to focus attention on the details of their bodies (p. 629)."

To summarize, women consistently report a desire to weigh less, regardless of their actual weight category. However, some recent studies show that men are as likely to want to weigh more as they are to weigh less.

**Attempts to Resolve Ideal/Real Discrepancy**

How are women dealing with this dissatisfaction? They are taking concrete steps (and not always healthy ones) to correct the perceived discrepancy. Discussion of body image brings to mind dramatic images of women suffering from eating disorders. Publicity about entertainers who have suffered from bulimia or anorexia (such as Debby Boone, Lynn Redgrave, Susan Dey, and Tracey Gold), as well as the shocking death of singer Karen Carpenter from anorexia, has heightened public awareness. Television dramas and popular magazines have further publicized these illnesses.
According to the American Psychiatric Association's Diagnostic and Statistical Manual of Mental Disorders, Third Edition, Revised (1987): The clinical features of bulimia include:

Recurrent episodes of binge eating (rapid consumption of a large amount of food in a discrete period of time); a feeling of lack of control over eating behavior during the eating binges; self-induced vomiting, use of laxatives or diuretics, strict dieting or fasting, or vigorous exercise in order to prevent weight gain; and persistent overconcern with body shape and weight. In order to qualify for the diagnosis, the person must have had, on average, a minimum of two binge eating episodes a week for at least three months. (p. 67)

Anorexia nervosa is characterized by

Refusal to maintain body weight over a minimal normal weight for age and height [85% is provided as an arbitrary but useful guide]; intense fear of gaining weight or becoming fat, even though underweight; a distorted body image; and amenorrhea (in females). (p. 65).

Obtaining an accurate estimate of the incidence of eating disorders has been difficult because of varying methodology used in early studies. However, recent improvements in diagnostic measures have led experts to conclude that approximately eight percent of women are bulimic (Connors and Johnson, 1987). Anorexia afflicts approximately four percent of adolescent girls (Schwartz, Thompson, & Johnson, 1981). Anorexia and bulimia are almost exclusively female diseases; less than 10% of sufferers are male.

The heightened awareness of clinically defined eating disorders is beneficial; however, these dramatic images sometimes obscure the widespread suffering of so-called "normal" women who struggle daily with "disordered eating," that is, exhibiting some of the symptoms and behaviors of eating disorders. It is not as if one is either eating disordered or normal;
recall Mintz's 1987 finding that only 32.82% of college women could be considered "normal" eaters." Connors and Johnson (1987) evaluated studies and concluded that binge eating ranges between 26% and 61%, and vomiting ranges between 3% and 16%.

Klesges, Mizes, and Klesges (1987) studied 102 men and 102 women from introductory psychology classes and found that females (55%) were more likely than males (19%) to have dieted during the past six months, were more likely to engage in physical activities primarily for the purpose of weight reduction (88% of women, 46% of men), and were more likely to engage in both dangerous and safe food restriction. Sixty-one percent of women (26% of men) used "dangerous or inappropriate weight loss strategies" (such as laxatives, appetite suppressants, or skipping meals). Consistent with other research, women were also more likely to see a discrepancy between their real and ideal weight and placed higher importance on the appearance benefits of maintaining an ideal weight.

Striegel-Moore, Silberstein, Frensch and Rodin (1989) surveyed 342 men and 330 women college freshman at the beginning of their freshman year and found that more women (64.5%) than men (19.4%) had dieted before coming to college; that more women (43.4%) than men (17%) had a history of binge-eating; and that more women (12.2%) than men (2%) had used purging to control their weight. By the end of the year, the prevalence of bulimia was unchanged; however, many students reported the onset of disordered eating (dieting and binge eating) during the year, worse for females. They found that for women whose disordered eating behavior had worsened during their freshman year, factors associated were: changes in Feelings about Weight, changes in Perceived Attractiveness, changes in
Body Weight, Perceived Stress, changes in Weight Dissatisfaction, and changes in Ineffectiveness. Too few men exhibited disordered eating for analysis.

Dykens and Gerrard (1986) studied undergraduate women in introductory psychology classes and found a history of repeat dieting in 60% of the sample, and bulimic behavior in 14% of the sample. Only 26% could be classified as "non-dieters," based on the criteria that they had maintained a stable weight (gains or losses of less than 10 pounds) in the past year, had not dieted in the past year, rarely or never experienced an irresistible urge to binge, and were satisfied with their weight.

In the study of Mississippi State University students cited in Chapter One (Frese & Frese 1990) 80.4% males said they "never go on a diet," compared to 46.5% of females; 4.4% of men said they are "always on a diet," compared to 17.4% of women.

To summarize, every study found dramatic gender differences in dieting behavior. Few women can actually be classified as "normal" eaters.

Women's Complex Relationship With Food

Women appear to have developed a different relationship with food than men. One pattern which emerges is that of women using food as a "coping mechanism." Kagan and Squires (1984b) studied 2004 high school students and found that 11% of females could be classified as emotional eaters (meaning that at least once a week they eat because they are lonely, eat too much because they are upset or nervous, and eat too much because they are bored). A much higher percentage of females than males answered yes to most questions. The most important affective variable for identifying
adolescents with Disordered Eating was the feeling that one had failed to meet one's own expectations and the expectations of others. Males and females did not differ in scores on the Failure scale, but females did more compulsive or emotional eating, leading the authors to question, "Did females have a lower tolerance for feelings of inadequacy than males? Or had females simply learned to use food as an anodyne to buffer pain of emotional distress? (p. 25)"

Hooker and Convisser (1983), write that "...food becomes the buffer between women and their feelings, which they find difficult to experience, and their needs that remain unfulfilled (p. 238)."

Body Dissatisfaction and Eating Disturbance Exacerbated by the College Environment

A few years ago tremendous concern was expressed that eating disorders had reached epidemic proportions on college campuses. Since that time, studies employing the most stringent criteria have estimated the range from 1% to 19% (Hill, 1989). Cesari (1986) explains one reason for the discrepancies in reports of eating disorders when she describes the existence of "fad bulimia" - a collection of bulimic-like behaviors reported by counselors who work with women on college campuses. Symptoms and behaviors include recurrent episodes of binge eating, but the amount of food ingested is considerably less than that of clinical bulimics; clinical bulimics almost always binge on junk food, but fad bulimics' binges may consist of nutritious food; fad bulimia is not nearly as secretive, and in fact, may be a group social activity; and the client has no history of anorexia or clinical bulimia.
Striegel-Moore, Silberstein, and Rodin (1986) hypothesize that "... as stressful and semiclosed environments, campuses may serve to intensify the sociocultural pressures to be thin. The competitive school environment may foster not only academic competition but also competition regarding the achievement of a beautiful (i.e., thin) body (p. 248)."

Two studies of psychosocial development note that college affects women's satisfaction with their bodies more than men's, but do not explore the connection further. Erwin (1982) administered the Erwin Identity Scale to 160 incoming freshmen in summer orientation, again fall semester, and then again in the spring: women showed a statistically significant drop in the Conceptions About Body and Appearance subscale from summer to fall, while men maintained about the same level. In the spring, men had also experienced a drop in Conceptions About Body and Appearance subscale, though not to the low levels of women's scores. The article noted that:

When college freshmen were grouped with high school students, men scored higher on Confidence and on Conceptions About Body and Appearance. This same difference was found for each retest group on the Conceptions About Body and Appearance scale. . . It appears that men have a higher degree of identity as it is conceptualized by this study. (p. 168)

Hood, Riahinejad, and White (1986) reported a four-year follow-up of these same students:

In the fourth year follow-up, men scored significantly higher on the Confidence subscale as well as on the Conceptions About Body and Appearance subscale, than did women. Students of both sexes showed substantial gains on all subscales over the four-year period, with the smallest change occurring among women on the Conceptions About Body and Appearance scale. (p. 109)
They concluded,

These findings suggest that the college environment may be promoting the development of identity in men to a greater extent than in women. The mixed messages women receive in college regarding career patterns, sex roles, and societal attitudes may cause women to develop identity at a slower pace. (pp. 112-113)

Conclusion

To summarize, women have responded to cultural pressures equating thinness with worth in many ways: by idealizing unrealistic and unhealthy figures; by being constantly unhappy with their weight; and by engaging in both healthy and unhealthy weight-loss strategies. This starts in puberty, continues through adolescence, and appears to be exacerbated by the college environment. Almost all studies of these behaviors discover that women suffer at dramatically more significant rates than men. However, some recent studies indicate that earlier studies may have been flawed because the scoring procedures did not take into account men’s tendency to perceive of themselves as underweight and express unhappiness with that.

Implications for Psychosocial Development

Unhealthy weight loss attempts, repeated weight fluctuations, and persistent unhappiness with weight are serious problems in and of themselves. Student development practitioners need to ask an even broader question: what are the implications for psychosocial development?

As noted in Chapter One, women’s unique struggles with weight have been ignored in psychosocial theory. For example, in the study by
Hood, Riahinejad, and White (1986) discussed in the previous section, a significant finding of the study was about women's Conceptions About Body and Appearance; however, that aspect of development is not mentioned in the conclusions of the article.


None have grounded their discussion in psychosocial development theories. Most of the articles focus on concerns with food and weight as a sign of abnormality, rather than viewing it as a problem common to most women. The efforts of student development practitioners to help women
struggling with food and weight issues may be limited by this lack of consideration of developmental theory.

What are the implications for psychosocial development? Using Chickering's model as a frame of reference, the implications can be seen in four areas: the sense of physical competence (vector one), identity issues (vector four), the developmental context, and the lifelong implications of inadequate development.

**Sense of Physical Competence (Vector One)**

The sense of physical competence one achieves at this level will have serious bearing on the level of body acceptance one can achieve in the fourth vector. As discussed in Chapter One, Chickering's description of physical competence is brief and is focused on physical skills, a very instrumental view of the body. Moore and Upcraft (1990) expand that slightly when they write, "[Chickering would now] take into account our more complete understanding of nutrition, exercise, and other wellness concepts (p. 14)." No further discussion of those concepts is given, and in fact, the Chickering article they reference (Thomas & Chickering, 1984) does not mention these concepts. It does not appear, then, that the basic assumptions of the vector (physical competence as an instrumental concept) have changed; we can therefore assume that nutrition and wellness are important new tasks only as they support making one more physically skillful. The discussion ignores a primary part of our experiences with our bodies, that is a sense of attractiveness.

Chickering's discussion of attractiveness is not until the fourth vector, but may be too late for most women, Coming to terms with one's
attractiveness is important to both women and men; several studies indicate that this may be more crucial for women than men - so crucial in fact, that many women define their physical competence in terms of their physical attractiveness.

Lerner and Karabenick (1974) and Lerner, Orlos, and Knapp (1976) laid the groundwork for this line of reasoning when they began comparing how women and men rated themselves in terms of attractiveness and effectiveness, and how those self-ratings related to self-concept. Lerner and Karabenick (1974) asked male and female students to rate themselves on the physical attractiveness of each of 24 body parts, and to complete a 16-item self-concept scale. They found a significant correlation for attractiveness and self-concept for females, but not for males.

Lerner, Orlos, and Knapp (1976) sought to replicate and extend the findings by adding an "effectiveness" component to the ratings. They studied 342 introductory psychology students at Eastern Michigan University. The sample was 85% white, with no analysis by race performed. Students assessed themselves on three scales, a list of 24 parts on which they rated their attractiveness to the opposite sex, a self-concept scale, and the same 24 body parts rated as to effectiveness. Males and females rated themselves similarly on attractiveness and effectiveness measures, but for women, more of the variance in their self-concept was accounted for by their attractiveness rating (27%) than their effectiveness rating (14%). For men, the reverse was true; effectiveness accounted for 34%, attractiveness for 25%. The authors caution that while this does not mean that attractiveness is irrelevant for men nor effectiveness irrelevant for women,
it does indicate an important sex difference worthy of further study. The authors observe:

Derivations from the alternative theoretical ideas of Erikson (1968) and of McCandless (1970) similarly suggest that a major source of females' self-concept is interpersonal, implying the saliency of their bodies as a stimulus for the attraction of others, while a major source of males' self-concept is individual, implying the importance of their bodies for manifesting instrumental effectiveness. (p. 315)

They conclude that,

Consistent with a presumably greater interpersonal than individual personality development orientation, the females' self-concepts appeared more strongly related to their attitudes about their bodies' physical attractiveness than its physical effectiveness. Numerous findings support this assertion. More variance in females' mean self-concept scores was accounted for by their ratings of body parts attractiveness than effectiveness; . . . the reverse pattern of relatedness was found to exist between the effectiveness ratings and self-concepts for the two sex groups; and more individual body parts were significantly involved in the females' attractiveness-self-concept relation than was the case for either the males' attractiveness-self-concept relation or for the females' effectiveness-self-concept relation. Taken together then these data indicate that the females' self-concepts were based more on 'interpersonal' physical effectiveness than 'individual' physical effectiveness. (p. 324)

Striegel-Moore, Silberstein, and Rodin (1986) write that: "For girls more than for boys it seems that self-concept is an interpersonal construct (p. 250)." The idea of physical competence as an interpersonal construct for females is supported by studies by Grant and Fodor (1986), Branch-Simpson (1984), and Franzoi and Shields (1984).

Grant and Fodor (1986) extended this line of research with 15-to 18-year-old high school students (race not given) and found that, inconsistent with other literature, girls rated themselves as more attractive than boys; as
expected, boys rated themselves more effective. However, consistent with other literature, they also found that girls' self-ratings of attractiveness correlated more with their self-concept, while the opposite was true for boys. They conclude: "The most interesting finding was that adolescent females tended to perceive their bodies as effective through attractiveness, while adolescent males showed effective use as more dominant (p. 279)."

Branch-Simpson's (1984) previously cited study found that women's evaluation of their physical selves seemed to be somewhat dependent on the status of their relationships with significant males.

Franzoi and Shields (1984) studied 366 female and 257 male undergraduate psychology students at The University of California-Davis, and used factor analysis to revise the Body Cathexis Scale [Secord & Jourard, 1953], an instrument which assumed that body esteem could be expressed as a single score, summing up self-ratings of individual body parts. The resulting product was the Body Esteem Scale. The women's scale had three subscales: Sexual Attractiveness (including features one can only change through the use of cosmetics), Weight Concern (features one can change through diet and exercise), and Physical Condition (issues of stamina and strength). The men's subscales were Physical Attractiveness (including facial features and some aspects of the physique), Upper Body Strength (which can be changed through exercise), and Physical Condition. The authors note a key difference in the two Physical Condition subscales:

While the two factors for men and women share the same label, our analysis indicates that men's sense of physical condition is different from women's. Items such as waist, appearance of stomach, and appetite, which are associated with Weight Concern in women, load high on men's Physical Condition factor. It appears that men associate these body parts and functions, not with how they and others assess
them as static objects, but with how they will help or hinder physical activity. (p. 178)

Weight concern did not emerge as a separate construct for men.

**Body Image and Sense of Physical Competence**

No published research exists which directly measures students' resolution of physical competence as Chickering originally defined it, or as this study proposed to expand the concept. The most relevant research is that which explores self-esteem as it relates to body image. The conclusions of that research are mixed, with several studies supporting the previously cited findings of Lerner and Karabenick (1974); Lerner, Orlos, and Knapp (1976); and Grant and Fodor (1986) that feeling attractive is a more important factor in females' self-esteem than in males. Others find just the opposite. A brief review of the different studies follows. This section will conclude with a discussion of possible explanations for the conflicting findings.

**Body satisfaction related to self-esteem for females, but not males:** Allgood-Merten, Lewinsohn, and Hops (1990) studied grades nine through twelve at a large public high school in Oregon; females reported more depressive symptoms, self-consciousness, stressful recent events, feminine attributes, negative body image (as measured by the Body Image Subscale of the Offer Self-Image Questionnaire, the Body Parts Satisfaction Scale, and the Body Self Relations Questionnaire), and negative self-esteem (as measured by the Rosenberg Self-Esteem inventory). The relationship between body image and self-esteem was significantly stronger for girls than
boys on two of the three measures of body image (details not given as to which instruments); body image accounted for a greater proportion of the self-esteem variance in girls than in boys. The authors observed,

What is new here is the finding that the shared variance of the body image variables with depression is eliminated when self-esteem is controlled for. This indicates that body image as it relates to depression is not a separate construct. Rather, it is a critically important aspect of self-esteem in this age group that functions as an antecedent as well as a strong correlate of depressive symptoms in adolescence. (p. 61).

They concluded with alarm,

Clearly the most important variables in reducing the sex difference [of depression] were body image and self-esteem; no significant portion of the variance could be accounted for by sex after their contributions were controlled for. Pending replication, these results suggest that if adolescent girls felt as physically attractive, effective, and generally good about themselves as their male peers did, they would not experience so much depression. (p. 61)

Rosen, Gross, and Vara's (1987) study of 1,373 9th through 12th graders classified students into three groups: Reducers (those currently trying to lose weight), Gainers (those trying to gain weight, and Maintainers (those trying to do neither). Self esteem was measured by the Rosenberg Self Esteem Inventory. For boys, 16% were Reducers, 55% Maintainers, and 29% Gainers; for girls, 63% were Reducers, 28% Maintainers, and 9% Gainers. On average female reducers were in the normal weight range (classified as plus or minus 15% of average weight), whereas the male reducers were obese. The male gainers were of normal weight, whereas the female gainers were below average weight. Actual weight was the best predictor of reducing or gaining category for boys, whereas ideal weight was for girls. Neither weight
reducing or gaining was related to low self-esteem or depression for boys. For girls, reducing was associated with negative body image, depression, and lower self-esteem. The authors concluded that girls base their self-worth on physical appearance more than boys, and that the social contingencies for deviation from the ideal weight are more intense for girls. They also offered an alternate view, that psychological maladjustment in adolescent girls is the consequence of weight change attempts.

Thompson and Thompson's previously cited 1986 study found that for women, higher global distortion was related to lower self-esteem (as measured by the Rosenberg Self-Esteem Inventory). No relationship was found for men.

Thompson and Altabe (1991) studied 237 college students and found men's discontent with their body size (as measured by the Figure Rating Scale) was unrelated to self-esteem (as measured by the Rosenberg Self-Esteem Inventory), while women's discontent was significantly correlated with self-esteem.

**Body satisfaction related to self-esteem for both sexes:** Mintz (1984) found that greater dissatisfaction with one's body was significantly related to lower levels of social self-esteem and more proneness to depression for both males and females. In the previously cited study by Mable, Balance, and Galgan (1986), not analyzed by sex, body dissatisfaction was associated with low self-esteem, externality, depression, and distortion.

**Body satisfaction related to self-esteem for males, not females:** Blyth, Simmons, and Zakin's 1985 study of sixth and seventh grade girls, found that early maturing girls were less satisfied with their weight but did not rate themselves as less attractive or having lower self-esteem.
Two studies concluded that the "normative nature of discontent" may actually be positive for women, buffering the effect of unhappiness: Franzoi and Shields (1984, previously cited) found that, for women, Weight Concern (on the Body Esteem Scale) had the lowest correlation with general self-esteem (measured by Rosenberg's Self-Esteem Scale), "possibly reflecting the dissatisfaction many women express about their own weight regardless of other self-satisfactions (1984, p. 177)."

Silberstein, Striegel-Moore, Timko, and Rodin's (1988, previously cited) studied 45 female and 47 male Yale undergraduates. The male sample averaged 6.4% above average weight (Metropolitan Life Norms, 1983) and the women were .77% below average. Recall that on the Body Size Drawings, a majority of both men (78.2%) and women (77.3%) selected an ideal figure different from their perceived figure; however, men were as likely to want to be heavier as thinner, but only one woman expressed a desire to be heavier. Women who reported lower body-esteem or had greater perceived-ideal discrepancy showed more symptoms of disordered eating than those who were satisfied with their appearance. Replicating the findings of Franzoi and Shields (1984), the Weight Concern subscale of the BES was not related to self-esteem for women (although the Sexual Attractiveness and Physical Condition subscales were); and self-esteem scores of women who wished to be thinner were not significantly different from those whose ideal body matched their perceived figure on the Body Size Drawings. Contrary to popular belief the study found that men's self-esteem was affected by the degree of dissatisfaction, and it was equally influenced by their perception of being heavier or thinner than their ideal size. The authors concluded:
In a culture that promotes the extremely thin female beauty ideal and thus creates a normative discontent with weight [Rodin, et al, 1985], the woman who experiences herself as dissatisfied with her weight resembles rather than deviates from her peers. . . . If our current cultural emphasis on thinness has created a feeling for women that their weight dissatisfaction is normative, then ironically this may prevent a negative influence of weight dissatisfaction on self esteem. (p. 230)

Indeed, it may be that the normative nature of weight discontent benefits women. If so, the current study would will show no relationship between figure satisfaction and level of psychosocial development.

Possible explanations of conflicting conclusions: One possible explanation of the conflicting findings is the differing developmental levels of the subjects in these different studies. Chickering's conception of vectors is that each emerges as a vital area of concern at a different time. Research is, at best, a "snapshot" of a person at a particular point in time. These various studies may have simply captured subjects at different times, when body size had different meanings. The study clarifies this somewhat because it includes freshman through graduate students, ages 17 through 27, who are further along in their development than any of the subjects in the previously cited studies.

Another possible explanation is that body image dissatisfaction alone does not affect self-esteem, but that repeated, failed attempts to resolve the dissatisfaction will lower self-esteem. It is worth noting that the women in the Silberstein, et al study were .77% below average weight, meaning they had experienced "success" in meeting society's standards by at least one measure. The weight of subjects were not given in any of the other studies.
Developmental Implications

Chickering described the importance of this vector: "A genuine and sound sense of security depends on the ability to solve, or otherwise cope with, life's problems; on the ability to maintain equilibrium in the 'shifting sands of time' (1969, p. 34)." He notes that one factor necessary for adequate resolution of this vector is that problems are solved so they stay solved. A woman seldom "solves" her weight problem so that it "stays solved." Judy Hollis (1985) uses the term "fluid body configuration" to describe a woman's sense of self as she repeatedly cycles through gaining and losing weight.

But the implications for psychosocial development are even broader, when we remember Chickering's description of the most important part of this vector--the overall "sense of competence, the confidence one has in his ability to cope with what comes and to achieve successfully what he sets out to do (1969, p. 9)." Furthermore, he writes, "Most important, the sense of competence upon completing college affects not only the assurance and vigor brought to adult tasks, but also affects other concurrent vectors of development (1969, p. 10)."

To summarize, Chickering's concept of physical competence is very instrumental, focusing on physical skills. Neither his original writing nor subsequent revisions discuss attractiveness as a part of physical competence. However, several studies indicate that a woman's sense of attractiveness, especially as related to her body image, may be an important part of her sense of physical competence. Studies relating body image to self-esteem have had conflicting results. Because of the importance of the sense of competence for lifelong development, this study proposes to examine both aspects of physical competence--instrumental (skills) and interpersonal
(attractiveness) as they relate to later development, and to examine possible gender differences.

Identity Issues (Vector four)

The other vector in which Chickering discusses the body is the fourth one. The components of identity (clarification of one's physical self and sex-role expectations) can be better understood in light of research regarding weight preoccupation.

Clarification of Physical Self

One interpretation of "clarification of physical self" is body acceptance. If this means being satisfied with one's weight and body size, then that is clearly not a part of the experience of most women. This study examines that relationship.

Another interpretation is the achievement of a "solid sense of self" (Chickering, 1969, p. 80). Chickering quotes Erikson's reference to a "feeling of being at home in one's body (p. 79)." When dieting and weight control is a way of life for a woman, it is difficult, if not impossible, to achieve that feeling of being at home in one's body. Many women who have yo-yo'd between dieting and bingeing have wardrobes of at least three sizes in their closets. They have experienced so many "body-selves" that they may not know which ones are accurate (recall Judy Hollis's term, "fluid body configuration"). The fantasies of these women often reveal that they think of their "thin selves" as totally different people than their "fat selves" (Orbach, 1978; Bryan, 1980), and integrating the two into one sense of self is difficult. Years of dieting, eating what one should and when one should has
also produced women who do not trust their judgment and who are completely out of touch with the sensations many people take for granted—the sense of their own hunger and satiety (Roth, 1984).

Attie and Brooks-Gunn (1987) summarize women’s problems when they write,

Persistent (and often failed) weight loss efforts, counter-regulatory behavior (overeating following food deprivation), and large weight fluctuations set the stage for disturbance of body image among chronic restrained eaters. Before the culture of mass dieting, women may have developed relatively cohesive and continuous experiences of their bodies, of course, with expectable periods of marked change at puberty and during pregnancy [Wooley & Wooley, 1985]. However, in the current climate, women reach adulthood having experienced many body-selves as a result of repeated efforts to modify their bodies to meet pre-pubertal ideals. (p. 240)

**Sex-Role Clarification**

About the second part of identity, Chickering writes:

Issues of sexual identification intimately interact with concerns for bodily appearance and self-presentation. Discovering what it means to be a man or be a woman, coming to terms with some of the behaviors and roles required, and developing a position consistent with one’s own peculiar blend of masculinity and femininity is an absorbing and complex task. (1969, p. 83)

That task becomes increasingly more complex in today’s society as sex-roles are continually being challenged and re-formulated. If dissatisfaction with weight has become a cultural expectation for women, as discussed previously (Hawkins, Turrell, & Jackson, 1983; Huon, Brown, & Morris, 1988), then deciding how one will resolve weight issues is a central part of this vector.
No research was found which examined the relationship of weight or figure satisfaction with sex-role expectations. Timko, Striegel-Moore, Silberstein, and Rodin (1987) examined how perceptions of importance of appearance related to sex-role orientation. They studied 45 Yale undergraduate women; the full continuum of Eating Disorders was present in the sample. They used the PAQ to measure sex-role beliefs. The authors began this study with the observation:

Despite the centrality of concern with appearance to femininity, it is not measured by current standard scales of sex-role orientation. Thus standard scales do not assess an aspect of femininity... namely, placing great importance on physical attractiveness. (p. 703)

To remedy that, they added five items (physically fit, slim, physically attractive to members of the same sex, physically attractive to members of the opposite sex, and attention to physical appearance) designed to measure "Self-Perception of Appearance" and "Importance of Appearance." The study found that the perceived importance of appearance correlated significantly with both self-perception of femininity and self-rating of the importance of femininity, whereas it was unrelated to masculinity; they concluded that conceptually based femininity scales should include items measuring the importance of appearance.

Dykens and Gerrard (1986) compared 83 undergraduate women, classified as bulimics, non-bulimic repeat dieters, or non-dieting and found no differentiation regarding sex-role values on the PAQ, but that non-dieters had higher self-esteem that either bulimics or repeat dieters. They concluded (p. 284), "The lack of group differentiation on traditional female role values and femininity suggests that the poor self esteem of the bulimics
and repeat dieters is influenced by factors other than traditional female sex typing." However, the authors reported significant weight differences among the groups (bulimics and repeat dieters weighed significantly more than non-dieting counterparts), then did not consider that in their interpretation. An alternative interpretation of the findings would be that the non-dieters were thin and therefore met sex-role requirements and therefore had higher self-esteem than the two groups who failed to meet society's definition of a successful woman.

Developmental Implications

Chickering's description of the outcome of this vector is the achievement of "that solid sense of self that assumes form as the developmental tasks for competence, emotions, and autonomy are undertaken with some success, and which, as it becomes more firm, provides a framework for interpersonal relationships, purposes, and integrity." Most women leave this vector without accepting their bodies. Many leave without a solid sense of their bodies. And some may leave this vector without having resolved sex-role expectations regarding attractiveness.

The Developmental Context

Chickering notes three conditions necessary for psychosocial development: relative freedom from anxiety, varied direct experiences and roles, and meaningful achievement. Many women struggling with weight and eating issues do not experience these conditions optimally.
Those who fail to achieve an "acceptable" body at this age may lose the opportunity for other interpersonal experiences vital to later development, and may live with such anxiety about their weight that other achievements are overshadowed. Even some women who "solve" their weight physically (achieve an "acceptable" body) do not experience these conditions, because so much of their time and energy is directed into weight control issues, rather than into other experiences and achievements.

Stake and Lauer (1987) studied male and female undergraduate students, and found that weight class had a significant effect on women's dating status, but not on men's. Average weight women had one to two dates per week; overweight women averaged one date per month. The authors observed, "Relative to average weight women, overweight women dated less often, experienced more peer and parental criticism, and reported that their mates were less satisfied with their body size. The social consequences variables revealed few differences, however, between overweight and average men (p. 39)."

Attie and Brooks-Gunn (1987) note that "behavioral expression of poor self-image (such as social withdrawal) may result in differential treatment, even in the absence of overweight status (p. 227)." And Striegel-Moore, Silberstein, and Rodin, (1986) point out: "Indeed, the pursuit of beauty and thinness may sometimes compromise women's success in other domains, for it takes time, attention, and money and is a drain on self-esteem (p. 257)."

In short, students struggling to resolve weight and body image issues may be missing opportunities to resolve other developmental issues. Because women appear to have much more of a struggle with weight and
body image issues than men, this study speculated that women’s development may be suffering inordinately.

Lifelong Implications

Finally, body acceptance is a lifelong struggle for many women. Recall Striegel-Moore, Silberstein, and Rodin’s (1986) study of women over age 62 who were still concerned about their body weight. Stunkard and Burt (1967) located three women who had lost weight during adolescence for cosmetic reasons and had maintained a normal weight for 20 years. Twenty years later, the women "reported undue and morbid preoccupation with their physical appearance, and anxiety, often of intense degree, over the gain of even two or three pounds (p. 1445)." The authors cite the persistent effect of adolescent development when they note that none of the three women had been obese after age 19.

Rosenzweig and Spruill (1987) surveyed women 20 years after they were college freshman, asking them to complete a questionnaire describing their present self, and also self in high school and college. They found an increase in fasting and bingeing; and in use of laxatives, diuretics, and diet pills. Regardless of their behavior, the women perceived themselves as being in a heavier weight class than they actually were - only one subject saw herself as being thinner than she actually was: 45% of normal weight women saw themselves as overweight; 86% of underweight women saw themselves as either normal or overweight; all overweight women saw themselves as overweight.

Rand and Kulda (1991) interviewed 2115 residents of Alachua County, Florida, in a multistaged statistical probability sample stratified by
age. They found that in every age group from 18 to 74, in every weight category, for both blacks and whites, women were much more likely to be restrained eaters than men ("restrained eaters" was defined by a weight concerns scale which measured feelings about food, dieting frequency, and the effect of weight on life). Overall 20% of white women, 22.6% of black women, 9.2% of white men, and 6.3% of black men were restrained eaters. In most weight groups and age groups two to three times as many women as men were restrained.

Thus, the gender differences weight and body image issues are lifelong patterns. If there is a developmental impact, then the lifelong impact is probably different for women and men.

Summary

Two bodies of knowledge guide this study - our knowledge of psychosocial development and our knowledge of weight and figure satisfaction. Psychosocial development theory has been a guiding force for understanding college students. Research shows that preoccupation with weight is a central part of the female experience. The relationship between the two bodies of work has never been investigated, leaving student development educators with an incomplete understanding of the students we seek to serve.
CHAPTER III
DESIGN AND METHODOLOGY

This chapter describes the purposes of the study, outlines the research questions, and offers operational definitions for the study. The design of the study, sample selection procedures, and method of data collection are then discussed. Instruments and scoring procedures are described, followed by a description of how data was analyzed.

Purposes of the Study

The purposes of this study were to investigate: (1) whether there is a relationship between weight and the psychosocial development concept of body acceptance; (2) whether there is a relationship between figure satisfaction and the psychosocial development concept of body acceptance; (3) whether there is a relationship between perceived physical ability and the psychosocial development concept of body acceptance; and, (4) if relationships exist, how similar or different they are for men and women.

In addition, the study also investigated how weight, figure satisfaction, and perceived physical ability were related to other psychosocial development constructs: management of sexual emotions, sense of confidence, establishment and clarification of purpose, development of mature interpersonal relationships,
academic autonomy, intimacy, and salubrious lifestyle, and examined possible
gender differences in those relationships. This was investigated among
traditional age college students who do not have the clinically defined eating
disorder bulimia.

In the course of data collection, information was gathered on two other
variables of potential interest: race and the presence of disordered eating
behaviors. Information on all variables was also obtained from a small number
of non-traditional age students. Because this study was exploratory, the variables
of race and disordered eating behaviors were also included in the regression
analyses; and all analyses were repeated for the sample including the non-
traditional age students.

Research Questions

As indicated in Chapter One, this study explored the following questions:

Is there a relationship between weight and acceptance of body and
appearance? If a relationship exists, will it indicate that overweightness is related
to lower levels of body acceptance? Will there be gender differences?

Is there a relationship between figure satisfaction and level of acceptance
of body and appearance? If so, will the relationship indicate that students who
perceive their bodies as much different than their ideal score lower on acceptance
of body and appearance? Will there be gender differences?

Is there a relationship between perceived physical ability and level of
acceptance of body and appearance? If so, will the relationship indicate that
students who score higher on perceived physical ability score higher on
acceptance of body and appearance? Will there be gender differences?
In addition to the above research questions, each question was also asked using management of sexual emotions and sense of confidence as the criterion variables, as well as acceptance of body and appearance. These two constructs are subvectors of Chickering’s Managing Emotions and Developing Competence vectors.

Each question was also asked using the following psychosocial development constructs as predictor variables: Establishing and Clarifying Purpose, Developing Mature Interpersonal Relationships, Academic Autonomy, Salubrious Lifestyle, and Intimacy. These vectors typically occur later in the Identity age range and after body acceptance has been resolved.

Operational Definitions

**Traditional** - undergraduate college students between ages 18 and 25, or graduate students between the ages of 22 and 28, who are not suffering from the clinically-defined eating disorder of bulimia.

**Bulimia** - According to the American Psychiatric Association's Diagnostic and Statistical Manual of Mental Disorders, Third Edition, Revised (1987), the clinical features of bulimia include:

Recurrent episodes of binge eating (rapid consumption of a large amount of food in a discrete period of time); a feeling of lack of control over eating behavior during the eating binges; self-induced vomiting, use of laxatives or diuretics, strict dieting or fasting, or vigorous exercise in order to prevent weight gain; and persistent overconcern with body shape and weight. In order to qualify for the diagnosis, the person must have had, on average, a minimum of two binge eating episodes a week for at least three months. (p. 67)

**Disordered Eating** - Behaviors which could be considered abnormal (for example, binge eating, strict dieting or fasting) but which are not severe enough
to meet the clinical definition of bulimia, as measured by the Survey of Eating Patterns, described in detail below. Chapter Two reviewed several studies which documented the high prevalence of disordered eating among college students, especially college women (Mintz, 1987; Connors & Johnson, 1987; Klesges, Mizes, & Klesges; Striegel-Moore, Silberstein, Frensch, & Rodin, 1989; Dykens & Gerrard, 1986; Frese & Frese, 1990).

**Weight** - a subject's self-reported weight. Weight and height were converted to a Body Mass Index score (BMI), which allows people of different heights to be compared to each other on a continuous scale. This is explained in detail below. Variables of interest include how people at different points in the continuum compare to each other (for example, those who are overweight, those who are average, and those who are underweight).

**Figure Satisfaction** - the degree to which a subject believes her or his body shape and size matches her or his ideal body shape and size. This was measured by the Weight/ Figures Survey and expressed as a Figure Satisfaction Score (FSS), to be discussed in detail below.

**Perceived Physical Ability** - as measured by the Perceived Physical Ability scale, discussed below.

**Body Acceptance and Other Psychosocial Development Constructs** - scores on two standard instruments: the Erwin Identity Scale and the Student Developmental Task and Lifestyle Inventory, described in detail below. These instruments are based on Chickering's theory and purport to measure progress in resolving the following vectors or parts of vectors: Sense of Competence, Managed Sexual Emotions, Body and Appearance Acceptance, Freeing Interpersonal Relationships, Developing Purpose, and Developing Autonomy.
Design

This design is exploratory, correlational research. It sought to investigate the extent to which variables of identity as conceptualized by Chickering (1968), especially acceptance of body and appearance, correlate with weight, degree of figure satisfaction, and degree of perceived physical ability for college women and men. This design was used because it permitted exploration of several variables and their interrelationships simultaneously. As such, this study identifies what correlates with what, but it does not necessarily identify cause-and-effect relationships.

Subjects and Procedure

Subjects were drawn from a population of 12,840 students enrolled at Mississippi State University for Spring Semester 1993. Mississippi State University is a comprehensive land-grant institution in Starkville, Mississippi (population 18,000). Mississippi State is the largest institution in the state. Enrollment was 40% female and 60% male; (81% white, 13% black, 6% other). Most students (85%) are full-time; most are traditional age (82% are less than 26 years old); and most are undergraduate (83%). Following is a chronological description of how the subjects were selected and contacted:

1. February 1, 1993: The Mississippi State University Registrar's Office provided the researcher with the complete database of all students enrolled for Spring 1993. A computer consultant working with the researcher designed a program to select a random sample from the group. Initially, the names and addresses of 200 men and 200 women were drawn. The sample was stratified by class, as follows: 40 men and 40 women each classified as freshman,
sophomores, juniors, seniors, and master's students. A stratified random sample across all classes was chosen to increase the probability of getting a range of responses on the psychosocial development instruments. By including students ages 18 to 28, and from freshman through master's level, it was anticipated that some subjects will have just begun to deal with issues measured by the instruments, while others will have dealt successfully with some or all of the issues.

2. February 8: Instrument packets, introductory letters, and return envelopes were mailed to all subjects with local addresses or delivered to the residence hall rooms of students living on campus. A sample packet is included in Appendix B. It should have taken approximately 45 to 90 minutes to complete the instruments.

   In order to motivate students, those who returned their instrument packets were able to enter their names in a drawing for a $100 cash prize (as described in the sample packet). Two boxes were set up in 101 Lee Hall; when a student deposited her or his return envelope in one box, the secretary gave her or him a raffle ticket (Appendix C) to complete and deposit in the second box.

3. February 20 - 26: Student assistants called students who had not entered the drawing to encourage their participation (script in Appendix D). A $50 prize was available in this round on March 2.

4. March 2 - 30: Because only 106 instruments were returned, the researcher repeated the process with an additional stratified random sample of 284.
After eliminating names because of duplicates and incomplete addresses, a total of 585 packets were mailed; 37 were returned as undeliverable, thus leaving a final number of 548 packets delivered (259 to men, 289 to women). The researcher received 181 completed packets, slightly less than the 200 packets she initially planned for. This was a response rate of 33%; the response rate was higher for women (41%) than for men (26%). Due to deadlines for completing the dissertation, it was not possible to conduct another round. The researcher determined that this sample was sufficient for the study (discussed further below).

Of the 181 students who returned packets, 22 subjects were non-traditional age (over 25 for undergraduates; over 28 for graduate students). An additional 10 subjects did not give their age. These 32 subjects were excluded from the initial analysis, because the two psychosocial development instruments have been developed exclusively through use with traditional age students. The 32 students who could not be classified as traditional age were included in a subsequent exploratory analysis, as described on page 142.

Additional packets which were eliminated included four because the Response Bias measure of SDTLI scores indicated suspect validity; two because more than one measure was incomplete; and two because of a researcher coding error that made scoring impossible; thus leaving a final sample of 141. The researcher planned to eliminate subjects who were identified as bulimic by the Survey of Eating Patterns; no subject met that definition. One subject did not return the PPA; for analysis, the grand mean was substituted.
The sample size of 141, while smaller than the researcher preferred, meets Kerlinger and Pedhazur's (1973) minimum requirement of 100 subjects for multiple regression, an estimate of 111 to 130 subjects based on Cohen's (1988) formula range using conservative estimates, and Roscoe's (1975) minimum of 10 subjects per variable (14 variables, 140 subjects). Further, as explained in Chapter Four, the sample appears to be representative of the university population in terms of race, age, and classification.

Instrumentation

All subjects were requested to complete the Weight/Figures Survey, the Perceived Physical Ability (PPA) subscale of the Physical Self-Efficacy Scale, the Erwin Identity Scale (EIS), the Student Developmental Task and Lifestyle Inventory (SDTLI), and the Survey of Eating Patterns (SEP). These instruments were used to assess weight, figure satisfaction, perceived physical ability, and psychosocial development. The SEP was included in order to screen out students who were likely to be bulimic. No students were bulimic; however, because students exhibited a wide range of scores (indicating a wide range of eating behaviors) the researcher chose to include scores in the analysis.

Weight

Body Mass Index Score

Subjects reported their height and weight on the Weight/Figures Survey; this was used to compute a Body Mass Index score for each subject. Although the most accurate method of determining weight and height would be to have subjects come to a central location to be weighed and measured, the
researcher believed such a requirement would significantly decrease participation in the study, and therefore seriously damage the study's effectiveness. This belief is based on the researcher's experience working with women who are preoccupied with their weight, as well as the published literature. In at least two studies (Birtchnell, Dolan, & Lacey, 1987; and Brooks-Gunn & Warren, 1983), some female students withdrew from studies when they discovered they would be weighed and measured by another person.

At least two studies have indicated that self-reported weights are quite accurate (Stewart, 1982; Stunkard & Albaum, 1981). Use of self-reported weights and heights in research studies is fairly standard procedure (see, for example, Baucom & Aiken, 1981; Hawkins, Turrell, & Jackson, 1983; Jacobson & Robbins, 1988; Mable, Balance, & Galgan, 1986; Mintz & Betz, 1986).

A Body Mass Index (BMI) score was computed for each subject, based on the subject's report of her or his current weight and height. The BMI (or Quetelet's index) is a number which allows researchers to easily compare degrees of overweightness or underweightness among people at different heights. It is computed by converting weight into kilograms and height into meters, then using the formula \( W/H^2 \). This measure is recommended by a number of researchers because it helps account for differences in body composition and is highly correlated with independent measures of body fat (National Institutes of Health Consensus Development Conference, 1985; Frankle, 1988; Gustafson-Larson & Terry, 1992; Bray, 1976).

As the conversion table (Appendix E) shows, for example, a person who is 5'5" tall, and weighs 140 pounds, would have a BMI of 23.30. A person who is 6'4" and weighs 190 would have a BMI of 23.13. Different experts identify slightly different ranges for "normal" weight. One widely accepted standard is from
Millar and Stephens’s (1987) large studies comparing Britain, Canada, and the U.S. They defined underweight as ≤ 20, normal as 20.1 - 25, overweight as 25.1 - 30, and obese as > 30.

**Figure Satisfaction**

**Figure Satisfaction Score**

Figure satisfaction was computed from the Weight/Figures Survey, which includes a series of nine figure drawings ranging from very thin to very fat. Subjects were asked to indicate which figures best illustrate their current and ideal figures. A Figure Satisfaction Score (FSS) was then computed by subtracting the ideal figure from the current figure. The possible range of scores is therefore -8 to +8.

As discussed in Chapter Two, using negative scores on the FSS has resulted in problems in previous studies (Silberstein, Striegel-Moore, Timko, & Rodin, 1988; Drewnowski & Yee, 1987), primarily with male subjects, because negative scores cancel out positive scores. Therefore, for purposes of data analysis in this study, 8 points were added to all scores, so the final range of scores was 0 to 16. For example, a person who thinks she looks like Figure 5 and wishes to look like Figure 2 would have an initial score of 3; for data analysis this would be transformed into a score of 11. A person who thinks she looks like Figure 1 and wishes to look like a Figure 3 would have an initial score of -2; for data analysis this would be transformed into a score of 6. Subjects who are satisfied with their bodies would have initial scores of 0, transformed scores of 8.

The set of silhouettes was originally designed by Stunkard, Sorensen, and Schulsinger (1983) for an investigation comparing adults’ weights to the weights
of their natural or adoptive parents. Fallon and Rozin (1985) first used the instrument to measure students' perceptions of their current and ideal figures. Their procedure has since been used by Thompson and Psaltis (1988) and by Silberstein, Striegel-Moore, Timko, and Rodin (1988). Thompson and Altabe (1991) performed reliability and validity tests on the measure.

**Reliability:** The instrument was administered to 58 female and 34 male college students (ages 17 to 25) twice at a two-week interval. They were asked several questions about the figures; two are of interest for this study: "choose your ideal figure" and "choose the figure that reflects how you think you look." For women the correlation coefficient was .71 for Ideal and .89 for Think. For men the correlation was .82 for Ideal and .92 for Think. All correlations were significant at the .001 level.

**Validity:** There were 46 female and 91 male participants in the validity studies. A discrepancy score of Think minus Ideal was correlated with the Drive for Thinness subscale and the Body Dissatisfaction subscale of the Eating Disorders Inventory. For women the correlation was .45 (p<.001) with Drive for Thinness and .62 (p<.001) with Body Dissatisfaction. For men, the correlation was .30 (p<.01) with Drive for Thinness and .22 (p<.01) with Body Dissatisfaction.

**Physical Ability**

**The Perceived Physical Ability Scale**

The Perceived Physical Ability Scale has 10 items, scored on a Likert-type 6-point scale, with a possible score range of 10 to 60. Statements describe beliefs about physical abilities, such as "I have excellent reflexes," or "I take little pride in my ability in sports." Subjects mark a response alternative from strongly agree
(1) to strongly disagree (6). As seen in the examples, directionality of some statements are reversed. Higher scores on the PPA indicate higher perceived physical ability. Measurements of reliability and validity were performed using University of Maine students (Ryckman, Robbins, Thornton, & Cantrell, 1982). Race and gender of subjects were not given in any discussion.

The PPA is a subscale of the Physical Self-Efficacy Scale, which was developed from a pool of 90 statements concerning individuals' perceived physical competence and level of confidence in displaying physical skills. These were administered to 363 students. Results were subjected to principal factor analysis. Items were eliminated which had low factor-loading or high social desirability contamination (as measured by the Marlowe-Crown Social Desirability Scale). Internal consistency was measured with a Cronbach alpha and determined to be .84.

Reliability: The instrument was administered twice at a six-week interval to 83 students and resulted in .85 (p<.001) test-retest reliability.

Construct Validity: The instrument was administered to a sample of 90 students and correlated .43 with the Physical Self-Concept Subscale of the Tennessee Self-Concept Scale.

Predictive Validity: The PPA was completed by 96 students, who also completed a questionnaire about their sports experience and participated in a dart-throwing task. PPA predicted participation and involvement in sports as well as performance on the dart-throwing task.

The PPA was completed by 22 students, who also participated in a ball and cup task to measure motor control. High scorers on PPA performed better in the motor control task (r=.40, p<.04).
The Erwin Identity Scale

The Erwin Identity Scale consists of 59 statements; students are instructed for each statement to evaluate “How true is this of me?” and respond on a Likert-type 5-point scale, ranging from “very true of me” to “not at all true of me.” The directionality of the statements is varied to offset any response patterns. Answers are scored on three subscales: Confidence (24 items, possible score of 120); Sexual Identity (19 items, possible score of 95); and Conceptions About Body and Appearance (16 items, possible score of 90).

Erwin says he chose these subscales because “Identity includes an assuredness in one’s self and in one’s capabilities, and an accurate self-perception and acceptance of one’s sexual feelings and of one’s body and appearance (Developmental Analytics, p. 5).”

Rodgers (1980/1989) analyzed the EIS and concluded that the subscales actually measure parts of four different vectors, rather than being a complete measure of Chickering’s Identity vector. The Confidence subscale is mostly a measure of the Competence vector and some parts of the Autonomy vector; the Sexual Identity subscale is more reflective of the Managing Emotions (specifically sexual emotions) vector than it is of Identity’s integration of heterosexuality or bisexuality by a person. Conceptions About Body and Appearance does reflect one part of the Identity Vector.

Reliability: The EIS was developed in two phases; the first phase included 78 items and was administered to 15 high school juniors and seniors, 32 college freshmen, 29 college seniors, and 15 graduate students in 1977 in the midwest; race and gender were not given. Reliability estimates were made using
Chronbach’s alpha coefficient, to measure the degree to which items within a subscale measure common characteristics. Coefficients were .65 for Conceptions About Body and Appearance, .75 for Confidence, and .76 for Sexual Identity.

For the second phase, items which correlated less than .20 with the respective subscale total score were deleted; some items were deleted or reworded to eliminate sexual, cultural, and handicap bias, and one item was added. The revised EIS, with 58 items, was administered to a random sample of 169 students attending summer orientation at the University of Iowa. The new reliability coefficients were .79 for Conceptions About Body and Appearance, .81 for Confidence, and .75 for Sexual Identity. Items were later added to the Confidence subscale; the author contends that “this minor revision did not have a significant impact on the usefulness of validity and reliability studies done before the change (Developmental Analytics, p. 8),” but does not give specific details.

Validity: A moderate relationship has been shown between the Lack of Anxiety (.41) and Personal Integration (.81) scales from the Omnibus Personality Inventory. The Identity Achievement Scale was moderately correlated with Confidence (.46) and Sexual Identity (.29). The low relationship (.29) between the Identity Achievement Scale and Conceptions About Body and Appearance suggests an area where Chickering’s and Marcia’s conceptualizations of identity do not overlap (Developmental Analytics, p. 10).

Rotter’s Internal-External Scale (I-E) measures a person’s expectancy of either external locus of control (high score) or internal locus of control (low scores). The moderate negative correlations of Confidence (-.21) and Sexual Identity (-.36) lends support to the validity of the EIS because of Chickering’s
approach to identity formation as an internal judgment. No relationship (.01) was established between I-E and Conceptions About Body and Appearance.

Longitudinal Studies: Hood, Riahinejad, and White (1986) re-tested college seniors who had been tested as freshmen. The mean scores on all three subscales increased for both men and women. Men continued to score higher than women on the Confidence subscale and on the Conceptions About Body and Appearance subscale.

Student Developmental Task and Lifestyle Inventory

The Student Developmental Task and Lifestyle Inventory (SDTLI, see Appendix B) was also used to assess psychosocial development. The SDTLI was developed by Winston and Miller to record a representative sample of behaviors and reports of feelings and attitudes students can be expected to demonstrate when they have satisfactorily achieved developmental tasks. It is concerned with "changes produced in individuals as a result of accomplishing a developmental task or having addressed important life events or issues within the context of higher education. (1987, p. 8)." It is designed for use with traditional age (17 to 24 years old) students. This study included undergraduates age 25 and under, and graduate students age 28 and under, in order to gather information from students who were likely to have recently completed the tasks measured by the instrument.

According to Winston, "The SDTLI is based on Chickering's general conceptual framework, but does not completely conform to the vector structure proposed in 1969. Through the various revisions of the SDTLI, changes were dictated by the nature of the data collected from college students (p. 108-109, 1990)." It was originally designed as a counseling tool, and was revised to help
with research. It focuses on developmental tasks, a concept discussed by Erikson, Havighurst, Chickering, and many others (see Chapter One for more discussion). The development of the SDTLI was described in some detail in Chapter Two. It was chosen for this study because it is one of the most widely used and thoroughly developed measures of the psychosocial development of college students available, because it measures development in the later vectors, and because it is designed with application in mind.

The 140-item SDTLI is organized into three Tasks and three Scales. A Task is an "interrelated set of behaviors and attitudes which a culture specifies should be exhibited at approximately the same time by a given age cohort in a designated context (i.e., higher education) (Winston & Miller, 1987, p. 8)." A Scale measures "the degree to which students report possessing certain behavioral characteristics, attitudes, or feelings, but unlike a developmental task, may not be directly affected by participation in the higher education environment (p. 8)."

It consists of 140 behavioral statements, which students indicate as either True or False about themselves (13 of the statements have an "Other" option). The answer sheet is two parts, an original and a carbon, on which the "correct" response is noted. Some items are keyed so that True represents a higher developmental level, while on others False is the higher level. Statements are arranged so that statements about one task are not all together, except on the Intimacy scale. The five Response Bias items are scattered throughout the instrument (5, 73, 99, 129, and 137). The authors recommend that any instruments with a Response Bias score of 3 or more be discarded when conducting research, because of the possibility that the student is either trying to portray an unrealistic representation of him or herself or because the student was
careless in completing the instrument. Response bias items include such statements as "I never make errors in classwork," and "I never get angry."

**Tasks:** The three tasks are Establishing and Clarifying Purpose (PUR), Developing Mature Interpersonal Relationships (MIR), and Academic Autonomy (AA).

The first Task, Establishing and Clarifying Purpose (PUR), contains 68 items and is divided into five subtasks:

- Students who have high achievement on this task (a) have well-defined and thoroughly explored educational goals and plans and are active self-directed learners; (b) have synthesized knowledge about themselves and the world of work into appropriate career plans, both making an emotional commitment and taking steps now to allow realization of career goals; (c) have established a personal direction in their lives and made plans for their futures that take into account personal, ethical, and religious values, future family plans, and vocational and educational objectives; (d) exhibit a wide range of cultural interests and are active participants in traditional cultural events; and (e) structure their lives and manipulate their environment in ways that allow them to satisfy daily needs, meet personal responsibilities, manage personal finances appropriately, and satisfactorily meet academic demands. (Winston & Miller, 1987, pp. 8-9)

This Task is divided into five sub-tasks: Educational Involvement (16 items), Career Planning (21 items), Lifestyle Planning (11 items), Life Management (16 items), and Cultural Participation (6 items).

The second Task, Developing Mature Interpersonal Relationships (MIR), has 33 items:

- Students who have high achievement on this task have developed relationships with peers characterized by independence, frankness, and trust; they appreciate individual differences among friends and acquaintances and feel reduced pressure to conform to group norms or to conceal disagreements. In relationships with persons from different cultures, races, and backgrounds they exhibit high levels of respect and acceptance and have a general attitude of openness to and appreciation for differences. Students high on this task are free from the need for
continuous reassurance and approval from others and have minimal
dependence on parents for direction in decision-making. (Winston &
Miller, 1987, p. 9)

The Task has three subtasks: Peer Relationships (13 items), Tolerance (10 items),
and Emotional Autonomy (10 items).

The third Task is Academic Autonomy (AA), with 10 items, and no sub-
tasks:

Students who have accomplished this task have the capacity to deal well
with ambiguity and to monitor and control their behavior in ways that
allow them to gain personal goals and fulfill responsibilities. High scorers
device and execute effective study plans and schedules; perform
academically at levels with which they are satisfied are consistent with
their abilities; are self-disciplined; and require minimal amounts of
direction from others. While they are independent learners, they are also
willing to seek academic help when required. (Winston & Miller, 1987, p.
10)

Scales: The Salubrious Lifestyle Scale (SL) is made up of eight items:

[It] measures the degree to which a student's lifestyle is consistent with or
promotes good health and wellness practices. A high score indicates
eating well-balanced, nutritious meals, maintaining an appropriate body
weight, planning for and getting sufficient amounts of sleep and physical
exercise, use of effective stress reduction techniques, and positive
evaluation of one's physical appearance. (Winston & Miller, 1987 p. 10)

The Intimacy Scale (INT) is considered an experimental scale at present.
It has 19 items, and should only be answered by a student if he or she is or has
been involved in a romantic relationship within the preceding 12 months. The
wording does not limit this to heterosexual relationships. Instructions refer to
"partner" as a "dating partner, spouse, or a friend with whom you are (have
been) romantically involved."

Students scoring high on this scale have established a relationship with
another person based on high levels of mutual respect, honesty, and trust.
Intimacy involves the uninhibited expression of feelings, values,
attitudes, wants, and needs to one's partner. Partners can be themselves, without feeling the need to create a facade, and do not 'play games' with each other. This kind of intimacy is not possessive and includes the private sharing of ideas and nonverbal forms of communication. Hopes, fears, aspirations, doubts, and other feelings and thoughts are freely expressed through private conversations and other shared experiences. Intimacy involves the capacity to love and care for another and to be loved and cared for by another, as well as testing one's ability and desire to make long-term commitments. (Winston & Miller, 1987, p. 10)

**Reliability:** Test-retest reliability estimates were made with two groups of undergraduates: students enrolled in an introductory class in education (n=27) at a large, public, southeastern university, and in an introductory psychology class (n=42) at a small, public college in the southeast. Students in the education class repeated the inventory four weeks later; the psychology students repeated the instrument two weeks later. Correlations clustered around .80 (.70 to .88 for the four-week time period, and .74 to .89 for the two-week period.) All test-retest correlations were significant at p<.01 level.

**Internal consistency estimates:** The instruments were administered to 1200 students in 22 colleges and universities in the U.S. and Canada in Fall 1996. Alpha coefficients ranged from .90 for the PUR task to .45 for the CUP subtask. Coefficient alpha for the total inventory was .93. The subtasks, CUP, TOL, and EA had relatively low alpha coefficients (.45, .55, and .55) and are not recommended for research studies; however, the tasks to which they belong (PUR and MIR) have adequate enough internal consistency reliability (.90 and .76) to be recommended by the authors for use in research.

**Validity:** According to Winston and Miller (1987, p. 24), "items were written based on conceptualizations of psychosocial development proposed by Chickering [1969] and the authors' observations of college students; ultimately
items were grouped based on factor analysis techniques." Intercorrelations indicate that the subtasks correlate more highly with the task to which they are assigned than to any other task. Age was a good predictor for performance on the Tasks and Subtasks, which lends validity to the concept.

The PUR and MIR tasks were found to be relatively independent of each other (.26). The AA Task has relatively high correlation with both PUR (.41) and MIR (.39); however, according to the authors:

Experimentation with subsuming the AA items in either MIR or PUR. . . lowered the alpha coefficients substantially, which suggests that AA is conceptually related to both PUR and MIR, but also measures a somewhat unique construct. The decision, therefore, was made to retain AA as a separate task because (a) logically, one would expect there to be a relationship between AA and the other tasks, and (b) the content of the task is of crucial importance for successful academic study. (Winston & Miller, 1987, p. 24)

Validity estimates using other instruments: The Establishing and Clarifying Purpose Task (PUR) has a relatively high correlation with the Career Planning Scale (.70) and the Career Exploration Scale (.49) of the Career Development Inventory and with the Confidence subscale (.47) of the Erwin Identity Scale.

Developing Mature Interpersonal Relationships Task (MIR) correlated .37 with the Mines-Jenson Interpersonal Relationships Inventory, which the authors note "gives support to the MIR's validity, but also suggests that the two do not measure exactly the same constructs (Winston & Miller, 1987, p. 30)."

Academic Autonomy (AA) correlated .49 with the Confidence Scale and .49 with the Study Habits Scale. Salubrious Lifestyle correlated .38 with the Confidence Scale and .33 with the Study Habits scale.
Biographical-demographical variables: Several biographical and demographical variables were analyzed to determine if they affected scores. The only two items for which significant gender differences were found were on the Intimacy Scale, where women scored slightly higher than men (12.72 vs. 11.82) and Salubrious Lifestyle, where men scored higher than women (5.24 vs. 4.59). The finding on Intimacy is consistent with most recent gender theory which postulates that women may resolve intimacy issues more easily than men. The findings on Salubrious Lifestyle lend intuitive support to the present study.

Only two subtasks and one scale showed a racial difference. Blacks scored slightly higher than Whites on the Life Planning Subtask (7.12 vs. 6.46). Whites scored slightly higher than Blacks on the Life Management Subtask (9.80 vs. 8.38) and on the Intimacy Scale (13.44 vs. 11.77).

The other demographic data of interest for this study is that regarding geographic region in which students grew up. Southeastern students scored lower on CUP, AA, EA, and MIR than students who grew up in all other regions; they also scored lower on PUR than students from the Northeast and the West.

Eating Disorder

Because this study is concerned with students without eating disorders, the Survey of Eating Patterns (SEP) was used to screen out subjects who may suffer from the clinically defined eating disorder of bulimia. The SEP (Shatford & Evans, 1986) is a 14-item operationalized version of the DSM-III (American Psychiatric Association, 1980) diagnostic criteria for bulimia. Each item describes a symptom of bulimia, followed by a Likert-type scale for a subject to indicate the severity of symptom. The authors report an internal consistency (Cronbach’s alpha) of .82. and concurrent validity ($r=0.83, p<.0001$) with the Test for Bulimia
(BULIT) (Shatford & Evans, 1986). The researcher added two questions (numbers 15 & 16) to reflect the DSM-III-R (American Psychiatric Association, 1987) updates. The instrument yields a bivariate classification of bulimic or nonbulimic. A continuous score can also be computed to give some indication of level of disordered eating behavior.

Analysis of Data

The six predictor variables are:

- Body Mass Index (BMI)
- Figure Satisfaction Score (FSS)
- Perceived Physical Ability (PPA)
- gender
- race
- Survey of Eating Patterns (SEP)

All predictor variables are continuous, except gender and race.

The eight criterion variables are:

- Conceptions About Body and Appearance (CABA)
- Sexual Identity (SI)
- Confidence (CON)
- Establishing and Clarifying Purpose (PUR)
- Developing Mature Interpersonal Relationships (MIR)
- Academic Autonomy (AA)
- Intimacy (INT)
- Salubrious Lifestyle (SL)
All criterion variables are continuous.

**Race:** Race was not initially included as a predictor variable, because the researcher was unsure if she would get sufficient response from black subjects. However, because 17% of the final sample pool was black (compared to 13% of the students enrolled in the institution) race was entered as a predictor variable. Because the numbers are still low (4 men, 20 women) results must be interpreted with caution, especially for black men.

**Disordered eating:** As previously discussed, eating disorder was not originally included as a criterion variable, and no subject met the clinical definition of bulimic. However, because subjects exhibited such a wide range of eating behaviors, the researcher included the SEP score as a predictor variable to see if it might provide valuable information.

The criterion variable of primary interest for this study is CABA. The relationships of the predictor variables to CABA were examined with multiple regression, using SPSS. According to Kerlinger and Pedhazur (1973, p. 3): "Multiple regression is a method of analyzing the collective and separate contributions of two or more independent variables . . . to the variation of a dependent variable."

Initially, simple correlations between the predictor variables BMI, FSS, PPA, and SEP and the dependent variable CABA were computed, for all subjects, for female subjects only, and for male subjects only. Additionally, correlations were produced in scatterplot forms to allow the researcher to visually examine relationships. A direct multiple regression was then performed with all predictor variables entered. Gender and race were coded in as dummy variables (gender: 1 = female, 2 = male; race: 1 = black; 2 = white; 3 = other). The order of entry for
predictor variables was BMI, FSS, PPA, gender, race, and SEP. These procedures were repeated for all criterion variables.

Linearity and fit were examined by first plotting the data with residuals on the y axis and predictor variables on the x axis. The plots showed the residuals falling randomly, with relatively equal dispersion about zero, and no strong tendencies to be either greater or less than zero. Next data was plotted with predicted values on the y axis and observed values on the x axis. The plots showed data clustered so that most fit within standard deviations. Linearity and fit were thus judged acceptable.
CHAPTER IV
RESULTS

This chapter presents demographic and summary information for traditional age subjects on all instruments. It examines each criterion variable, first presenting correlation statistics, then presenting multiple regression statistics. It concludes with a description of exploratory analyses performed with a sample which also included non-traditional age students.

Overview

The 141 traditional age students were demographically diverse, as can be seen from Table 1. The sample included 59 white females, 20 black females, 2 Asian females, 55 white males, 4 black males, and 1 Asian male. Table 2 presents means and standard deviations on all variables for all subjects, then compares responses by female and male students. Table 3 summarizes the relationships among the predictor variables. Table 4 reveals that the scores of this sample were slightly lower on most variables than other representative samples. This is not unusual for students in the Southeast.
Table 1:
Demographic Information for Traditional Age Sample

<table>
<thead>
<tr>
<th></th>
<th>n</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sex</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>81</td>
<td>57.4</td>
</tr>
<tr>
<td>Male</td>
<td>60</td>
<td>42.6</td>
</tr>
<tr>
<td>Race</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Black</td>
<td>24</td>
<td>17.0</td>
</tr>
<tr>
<td>White</td>
<td>114</td>
<td>80.9</td>
</tr>
<tr>
<td>Other</td>
<td>3</td>
<td>2.1</td>
</tr>
<tr>
<td>Class</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Freshman</td>
<td>34</td>
<td>24.1</td>
</tr>
<tr>
<td>Sophomore</td>
<td>30</td>
<td>21.3</td>
</tr>
<tr>
<td>Junior</td>
<td>37</td>
<td>26.2</td>
</tr>
<tr>
<td>Senior</td>
<td>27</td>
<td>19.1</td>
</tr>
<tr>
<td>Graduate</td>
<td>13</td>
<td>9.2</td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>23</td>
<td>16.3</td>
</tr>
<tr>
<td>19</td>
<td>32</td>
<td>22.7</td>
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<tr>
<td>20</td>
<td>25</td>
<td>17.7</td>
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<td>15.6</td>
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<td>24</td>
<td>2</td>
<td>1.4</td>
</tr>
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<td>25</td>
<td>4</td>
<td>2.8</td>
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<tr>
<td>26</td>
<td>2</td>
<td>1.4</td>
</tr>
<tr>
<td>27</td>
<td>1</td>
<td>.7</td>
</tr>
<tr>
<td>Variable</td>
<td>All Subjects N= 141</td>
<td>Female Subjects N= 81</td>
</tr>
<tr>
<td>----------</td>
<td>-------------------</td>
<td>----------------------</td>
</tr>
<tr>
<td></td>
<td>Mean</td>
<td>Standard Deviation</td>
</tr>
<tr>
<td>FSS</td>
<td>8.465</td>
<td>1.075</td>
</tr>
<tr>
<td>PPA</td>
<td>40.514</td>
<td>8.567</td>
</tr>
<tr>
<td>SEP</td>
<td>32.279</td>
<td>9.261</td>
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<tr>
<td>CABA</td>
<td>53.964</td>
<td>10.046</td>
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<tr>
<td>CON</td>
<td>86.879</td>
<td>15.213</td>
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<tr>
<td>AA</td>
<td>4.482</td>
<td>2.571</td>
</tr>
<tr>
<td>SL</td>
<td>4.688</td>
<td>2.191</td>
</tr>
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</table>
Table 3:
Correlations Among Predictor Variables for Traditional Age Sample

### All Subjects

<table>
<thead>
<tr>
<th></th>
<th>FSS</th>
<th>PPA</th>
<th>SEP</th>
</tr>
</thead>
<tbody>
<tr>
<td>r</td>
<td>p</td>
<td>r</td>
<td>p</td>
</tr>
<tr>
<td>BMI</td>
<td>.5048*</td>
<td>.000</td>
<td>-.0661</td>
</tr>
<tr>
<td>FSS</td>
<td></td>
<td></td>
<td>-.2620*</td>
</tr>
<tr>
<td>PPA</td>
<td></td>
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</table>

### Females

<table>
<thead>
<tr>
<th></th>
<th>FSS</th>
<th>PPA</th>
<th>SEP</th>
</tr>
</thead>
<tbody>
<tr>
<td>r</td>
<td>p</td>
<td>r</td>
<td>p</td>
</tr>
<tr>
<td>BMI</td>
<td>.6309*</td>
<td>.000</td>
<td>-.2989*</td>
</tr>
<tr>
<td>FSS</td>
<td></td>
<td></td>
<td>-.2042</td>
</tr>
<tr>
<td>PPA</td>
<td></td>
<td></td>
<td></td>
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</table>

### Males

<table>
<thead>
<tr>
<th></th>
<th>FSS</th>
<th>PPA</th>
<th>SEP</th>
</tr>
</thead>
<tbody>
<tr>
<td>r</td>
<td>p</td>
<td>r</td>
<td>p</td>
</tr>
<tr>
<td>BMI</td>
<td>.6642*</td>
<td>.000</td>
<td>-.0459</td>
</tr>
<tr>
<td>FSS</td>
<td></td>
<td></td>
<td>-.2269</td>
</tr>
<tr>
<td>PPA</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*p ≤ .05
Table 4:
Comparisons of This Sample to Other Samples

<table>
<thead>
<tr>
<th></th>
<th>Means</th>
<th>Standard Deviations</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>PPA (this sample)</strong></td>
<td>40.51</td>
<td>8.57</td>
</tr>
<tr>
<td>Ryckman, Robbins, Thornton, &amp; Cantrell (1982)*</td>
<td>44.54</td>
<td>8.28</td>
</tr>
<tr>
<td></td>
<td>44.06</td>
<td>9.82</td>
</tr>
<tr>
<td><strong>SEP</strong> (this sample)</td>
<td>26.82</td>
<td>8.97</td>
</tr>
<tr>
<td>Berg (1988)</td>
<td>28.44</td>
<td>8.64</td>
</tr>
<tr>
<td><strong>CABA</strong> (this sample)</td>
<td>53.96</td>
<td>10.05</td>
</tr>
<tr>
<td>Developmental Analytics (date not given)</td>
<td>56.2</td>
<td>not given</td>
</tr>
<tr>
<td><strong>SI</strong> (this sample)</td>
<td>61.93</td>
<td>10.98</td>
</tr>
<tr>
<td>Developmental Analytics (date not given)</td>
<td>65.4</td>
<td>not given</td>
</tr>
<tr>
<td><strong>CON</strong> (this sample)</td>
<td>86.88</td>
<td>15.21</td>
</tr>
<tr>
<td>Developmental Analytics (date not given)</td>
<td>87.7</td>
<td>not given</td>
</tr>
<tr>
<td><strong>PUR</strong> (this sample)</td>
<td>36.50</td>
<td>12.30</td>
</tr>
<tr>
<td>Winston &amp; Miller (1987)***</td>
<td>32.41 to 45.21</td>
<td>10.34 to 11.18</td>
</tr>
<tr>
<td><strong>MIR</strong> (this sample)</td>
<td>16.61</td>
<td>4.93</td>
</tr>
<tr>
<td>Winston &amp; Miller (1987)***</td>
<td>17.71 to 20.69</td>
<td>5.20 to 4.58</td>
</tr>
<tr>
<td><strong>AA</strong> (this sample)</td>
<td>4.48</td>
<td>2.57</td>
</tr>
<tr>
<td>Winston &amp; Miller (1987)***</td>
<td>4.59 to 6.06</td>
<td>2.35 to 2.41</td>
</tr>
<tr>
<td><strong>INT</strong> (this sample)</td>
<td>11.41</td>
<td>5.36</td>
</tr>
<tr>
<td>Winston &amp; Miller (1987)***</td>
<td>11.86 to 13.54</td>
<td>3.19 to 3.71</td>
</tr>
<tr>
<td><strong>SL</strong> (this sample)</td>
<td>4.69</td>
<td>2.19</td>
</tr>
<tr>
<td>Winston &amp; Miller (1987)***</td>
<td>4.59 to 5.11</td>
<td>2.08 to 2.16</td>
</tr>
</tbody>
</table>

*Study included two samples

**Female subjects only (Berg did not include men). Revised version of the SEP given to this sample included two additional questions; therefore it was possible for subjects to score 10 points higher than Berg's sample.

***Means were reported separately for each academic class; this is the range of means and standard deviations.
Body Size and Figure Satisfaction

Table 5 shows that males in the sample were somewhat more likely to be overweight or obese than females. The Table 6 summary of Figure Satisfaction Scores illustrates a dramatic sex difference. While similar proportions of males and females (78.3% of men and 79% of women) were dissatisfied with their current figure, the direction of the dissatisfaction varied by sex. Women almost uniformly expressed a desire for a smaller figure (67.9% chose an “ideal” figure smaller than their “current” figure; only 11.1% chose an “ideal” figure larger than their “current” figure). Men were almost as likely to want to be larger as smaller (46.7% chose an “ideal” figure smaller than their “current” figure; and 31.7% chose an “ideal” figure larger than their “current” figure).

Figure 2 gives some idea of the “accuracy” of women’s and men’s perceptions of their body size. To permit comparisons to FSS scores, the BMI categories of “overweight” and “obese” were combined into a single “overweight” category. The FSS scores were grouped into perceptions of being underweight (less than 8), normal weight (8), or overweight (more than 8). Sex differences in perceptions of body size are even more dramatically demonstrated in this comparison. While 67.9% of women wished to weigh less, only 13.6% of women were actually overweight. While 31.7% of men wanted to weigh more, only 8.3% of were actually underweight.
Table 5:
Body Mass Index Scores (Traditional-Age Sample)

<table>
<thead>
<tr>
<th></th>
<th>Underweight</th>
<th>Normal</th>
<th>Overweight</th>
<th>Obese</th>
</tr>
</thead>
<tbody>
<tr>
<td>females</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>n</td>
<td>24</td>
<td>46</td>
<td>9</td>
<td>2</td>
</tr>
<tr>
<td>%</td>
<td>29.6</td>
<td>56.8</td>
<td>11.1</td>
<td>2.5</td>
</tr>
<tr>
<td>male</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>n</td>
<td>5</td>
<td>31</td>
<td>17</td>
<td>7</td>
</tr>
<tr>
<td>%</td>
<td>8.3</td>
<td>51.7</td>
<td>28.3</td>
<td>11.7</td>
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</table>

Table 6:
Figure Satisfaction Scores (Traditional-Age Sample)

<table>
<thead>
<tr>
<th></th>
<th>5</th>
<th>6</th>
<th>7</th>
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<th>8.5</th>
<th>9</th>
<th>10</th>
<th>11</th>
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<tr>
<td>females</td>
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<td>0</td>
<td>9</td>
<td>17</td>
<td>4</td>
<td>41</td>
<td>8</td>
<td>2</td>
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<tr>
<td>%</td>
<td>0</td>
<td>0</td>
<td>11.1</td>
<td>21</td>
<td>4.9</td>
<td>50.6</td>
<td>9.7</td>
<td>2.5</td>
</tr>
<tr>
<td>males</td>
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<td>4</td>
<td>14</td>
<td>13</td>
<td>1</td>
<td>22</td>
<td>3</td>
<td>2</td>
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<tr>
<td>%</td>
<td>1.7</td>
<td>6.7</td>
<td>23.3</td>
<td>21.7</td>
<td>1.7</td>
<td>36.7</td>
<td>5</td>
<td>3.3</td>
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</tbody>
</table>
Figure 2:
Comparisons of BMI and FSS Scores (Traditional-Age Sample)
Data Analysis

As discussed in Chapter Three, each set of research questions was examined by determining the relationships of the predictor variables to the criterion variable, as well as examining gender differences in the relationships. For each criterion variable, the data was analyzed in two steps, as described in Chapter Three: simple correlations and multiple regression.

Table 7 summarizes the correlations for each criterion variable with all predictor variables. Table 8 summarizes direct multiple regressions. Discussion of each criterion variable also includes a final regression table with beta coefficients.

A significance level of .05 was established as acceptable for all analyses. For each multiple regression, the linearity and fit was found sufficient after plotting of residuals and plotting of predicted and observed values.
Table 7: Correlations Between Predictor and Criterion Variables

<table>
<thead>
<tr>
<th></th>
<th>All Subjects</th>
<th>Females</th>
<th>Males</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>N= 141</td>
<td>N=81</td>
<td>N=60</td>
</tr>
<tr>
<td></td>
<td>r</td>
<td>p</td>
<td>r</td>
</tr>
<tr>
<td><strong>Conceptions About Body and Appearance (CABA)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BMI</td>
<td>.0467</td>
<td>.583</td>
<td>-.0756</td>
</tr>
<tr>
<td>FSS</td>
<td>.0313</td>
<td>.713</td>
<td>-.1985</td>
</tr>
<tr>
<td>PPA</td>
<td>-.3218*</td>
<td>.000</td>
<td>-.4357*</td>
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<tr>
<td>SEP</td>
<td>-.1454</td>
<td>.087</td>
<td>-.1219</td>
</tr>
<tr>
<td><strong>Sexual Identity (SI)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BMI</td>
<td>.1153</td>
<td>.173</td>
<td>-.2447*</td>
</tr>
<tr>
<td>FSS</td>
<td>.1836*</td>
<td>.029</td>
<td>-.2060</td>
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<tr>
<td>PPA</td>
<td>-.2463*</td>
<td>.003</td>
<td>-.3495*</td>
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<tr>
<td>SEP</td>
<td>-.1305</td>
<td>.124</td>
<td>-.1051</td>
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<tr>
<td><strong>Confidence (CON)</strong></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>BMI</td>
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<td>.038</td>
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<td>FSS</td>
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<td>.402</td>
<td>-.0824</td>
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<td>.000</td>
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<td>SEP</td>
<td>-.1957*</td>
<td>.020</td>
<td>-.1478</td>
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<td><strong>Establishing and Clarifying Purpose (PUR)</strong></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>BMI</td>
<td>.0292</td>
<td>.731</td>
<td>-.0367</td>
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<tr>
<td>FSS</td>
<td>.0969</td>
<td>.253</td>
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<tr>
<td>PPA</td>
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<td>-.3365*</td>
</tr>
<tr>
<td>SEP</td>
<td>.0699</td>
<td>.412</td>
<td>.0614</td>
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<tr>
<td><strong>Developing Mature Interpersonal Relations (MIR)</strong></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>BMI</td>
<td>.1126</td>
<td>.184</td>
<td>.0034</td>
</tr>
<tr>
<td>FSS</td>
<td>.1012</td>
<td>.233</td>
<td>.0289</td>
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<tr>
<td>PPA</td>
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<td>-.3014*</td>
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<td>.0686</td>
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<td><strong>Academic Autonomy (AA)</strong></td>
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<tr>
<td>BMI</td>
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<tr>
<td>FSS</td>
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<td>.524</td>
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<td>SEP</td>
<td>-.1590</td>
<td>.060</td>
<td>-.1251</td>
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<td><strong>Intimacy (INT)</strong></td>
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<td></td>
<td></td>
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<tr>
<td>BMI</td>
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<td>.587</td>
<td>-.1706</td>
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<td>FSS</td>
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<td>.005</td>
<td>-.0429</td>
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<td>.873</td>
<td>.1080</td>
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<td><strong>Salubrious Lifestyle (SL)</strong></td>
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<td></td>
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<tr>
<td>BMI</td>
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<td>.031</td>
<td>-.3277*</td>
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<tr>
<td>FSS</td>
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<tr>
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<td>.000</td>
<td>-.4606*</td>
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<tr>
<td>SEP</td>
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<td>-.1100</td>
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</table>

*p<.05
Table 8: Multiple Regression for Traditional Age Sample (N=141)

<table>
<thead>
<tr>
<th>Predictor:</th>
<th>Body Mass Index</th>
<th>Figure Satisfaction Score</th>
<th>Perceived Physical Ability</th>
<th>Gender</th>
<th>Race</th>
<th>Survey of Eating Patterns</th>
</tr>
</thead>
<tbody>
<tr>
<td>Criterion:</td>
<td>Added $R^2$</td>
<td>Added $F$</td>
<td>Added $R^2$</td>
<td>Added $F$</td>
<td>Added $R^2$</td>
<td>Added $F$</td>
</tr>
<tr>
<td>Conceptions About Body &amp; Appearance</td>
<td>.002</td>
<td>0.303</td>
<td>.000</td>
<td>0.156</td>
<td>.115</td>
<td>6.084*</td>
</tr>
<tr>
<td>Sexual Identity</td>
<td>.013</td>
<td>1.873</td>
<td>.021</td>
<td>2.459</td>
<td>.092</td>
<td>6.626*</td>
</tr>
<tr>
<td>Confidence</td>
<td>.031</td>
<td>4.401*</td>
<td>.000</td>
<td>2.214</td>
<td>.140</td>
<td>9.448*</td>
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<tr>
<td>Establishing &amp; Clarifying Purpose</td>
<td>.001</td>
<td>0.118</td>
<td>.009</td>
<td>0.691</td>
<td>.082</td>
<td>4.627*</td>
</tr>
<tr>
<td>Developing Mature Interpersonal</td>
<td>.013</td>
<td>1.786</td>
<td>.003</td>
<td>1.073</td>
<td>.077</td>
<td>4.625*</td>
</tr>
<tr>
<td>Relationships</td>
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<td>1.378</td>
<td>.014</td>
<td>1.722</td>
<td>.009</td>
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<tr>
<td>Academic Autonomy</td>
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<td>.091</td>
<td>7.112*</td>
<td>.004</td>
<td>4.950*</td>
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<tr>
<td>Intimacy</td>
<td>.033</td>
<td>4.763*</td>
<td>.010</td>
<td>3.125*</td>
<td>.229</td>
<td>17.073*</td>
</tr>
</tbody>
</table>

*p ≤ .05
Conceptions About Body and Appearance

Correlations

**Body Mass Index (BMI):** No significant relationships were discovered between the predictor variable BMI and the criterion variable CABA.

**Figure Satisfaction Score (FSS):** For the overall sample, there was no significant relationship between the predictor variable FSS and the criterion variable CABA. However, when the information was analyzed by gender, women had a non-significant negative relationship between FSS and CABA, and men had a significant positive relationship. In other words, as men moved in the direction of believing they were underweight, they demonstrated less acceptance of their bodies.

**Perceived Physical Ability (PPA):** Significant relationships between PPA and CABA were found for the overall group; when broken down by gender, a significant relationship remained for women, but not for men. This means that for women, the greater their faith in their physical ability, the higher their level of acceptance of their body. For men, that could not be demonstrated.

**Survey of Eating Patterns (SEP):** No significant relationships were discovered between the predictor variable SEP and the criterion variable CABA.

Multiple Regression

The first direct multiple regression was to determine if a relationship existed between the criterion variable CABA and the predictors BMI, FSS,
PPA, Gender, Race, and SEP. BMI was the first variable entered into the multiple regression equation. The $R^2$ added was 0.22% and indicated no significant statistical relationship, $F(1,139)=0.303$, $p=.583$.

The second variable entered was FSS, which accounted for an additional .00% of the variance in CABA. To this point the two variables entered were not significantly statistically related to CABA, $F(2,138)=0.156$, $p=.856$.

After the third variable (PPA) was entered, an additional 11.53% of the variance in CABA was accounted for. The combination of the three predictor variables to this point was significantly related to CABA $F(3,137)=6.084$, $p=.001$.

The next variable (gender) accounted for an additional 1.20% of the variance in CABA. The combination of all variables entered to this point was significantly related to CABA, $F(4,136)=5.060$, $p=.001$.

The fifth variable added to the equation was race, which accounted for an additional 7.41% of the variance. The combination of these five variables was significantly related to CABA, $F(5,135)=6.905$, $p=.000$.

The final variable added was SEP, which added 0.33% of the variance. A total of 20.70% of the variance in CABA scores were explained by the predictor variables. The two important variables were PPA and race. PPA $(r=.322)$ had a significant correlation with CABA scores. Thus, students who scored high on CABA tended to have higher confidence in their physical ability. Race $(r=-.203)$ had a significant negative relationship with CABA scores. Race was coded as 1 for black and 2 for white; thus students with higher levels of CABA tended to be black.
As can be seen in Table 9, in the final regression four predictor variables contributed significantly to the variance in CABA. In order of importance, PPA, Race, FSS, and gender contributed.

### Table 9:
Final Regression for CABA (Traditional-age students)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Beta</th>
<th>T</th>
<th>Sig. T</th>
</tr>
</thead>
<tbody>
<tr>
<td>SEP</td>
<td>-.0608</td>
<td>-.751</td>
<td>.454</td>
</tr>
<tr>
<td>Race</td>
<td>-.2736</td>
<td>-3.412</td>
<td>.001</td>
</tr>
<tr>
<td>BMI</td>
<td>-.1132</td>
<td>-1.038</td>
<td>.301</td>
</tr>
<tr>
<td>PPA</td>
<td>.3345</td>
<td>4.068</td>
<td>.000</td>
</tr>
<tr>
<td>Gender</td>
<td>.2134</td>
<td>2.103</td>
<td>.037</td>
</tr>
<tr>
<td>FSS</td>
<td>.2520</td>
<td>2.356</td>
<td>.020</td>
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<tr>
<td>Constant</td>
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<td>7.422</td>
<td>.000</td>
</tr>
</tbody>
</table>

\(F(6,136)=5.829, p=.000\)

**Sexual Identity**

**Correlations**

**Body Mass Index (BMI):** For the overall sample, no significant relationship was discovered between the predictor variable BMI and the criterion variable SI. However, when examined separately, significant
relationships were discovered for both sexes; the relationships were in different directions. For women, higher weight was related to lower SI scores; for men higher weight was related to higher SI scores.

**Figure Satisfaction Score (FSS):** Significant relationships were found for all subjects between the predictor variable FSS and the criterion variable SI. When examined by gender, women had a non-significant negative relationship between FSS and SI, and men had a significant positive relationship. That is, the more likely a man believed he was underweight, the less likely he was to have developed management of sexual emotions.

**Perceived Physical Ability (PPA):** Significant relationships between Perceived Physical Ability (PPA) and SI were found for the overall group; when broken down by gender, a significant relationship remained for women, but not for men. This means that for women, the greater their faith in their physical ability, the higher their level of management of sexual emotions. For men, that could not be demonstrated.

**Survey of Eating Patterns (SEP):** No significant relationships were found between SEP and SI.

**Multiple Regression**

The second direct multiple regression was designed to determine if a relationship existed between the criterion SI and the predictors BMI, FSS, PPA, Gender, Race, and SEP. BMI was the first variable entered into the multiple regression equation. The R² added was 1.33% and indicated no significant statistical relationship, $F(1,139)=1.8731, p=.173$. 
The second variable entered was FSS, which accounted for an additional 2.1% of the variance in SI. To this point the two variables entered were not significantly related to SI, $F(2,138)=2.4589$, $p=.089$.

After the third variable (PPA) was entered, an additional 9.2% of the variance in SI was accounted for. The combination of the three predictor variables to this point was significantly related to SI, $F(3,137)=6.626$, $p=.000$.

The fourth variable (gender) accounted for an additional 0.02% of the variance in SI. The combination of all variables entered to this point was significantly related to SI, $F(4,136)=4.9410$, $p=.001$.

The fifth variable entered into the equation was race, which accounted for an additional 0.31% of the variance. The combination of these five variables was significantly related to SI, $F(5,135)=4.0339$, $p=.002$.

The final variable added was SEP, which added 1.86% of the variance. A total of 14.85% of the variance in SI scores was explained by the predictor variables. The important variable was PPA. PPA ($r=.246$) had a significant correlation with SI scores. Thus, students who scored high on SI tended to have higher confidence in their physical ability.

As can be seen in Table 10, when all predictor variables were considered, PPA and FSS both contributed significantly to the variance.
Table 10:
Final Regression for SI (Traditional-Age Students)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Beta</th>
<th>T</th>
<th>Sig. T</th>
</tr>
</thead>
<tbody>
<tr>
<td>SEP</td>
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<td>.090</td>
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<tr>
<td>Race</td>
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<td>.914</td>
<td>.362</td>
</tr>
<tr>
<td>BMI</td>
<td>.0148</td>
<td>.131</td>
<td>.896</td>
</tr>
<tr>
<td>PPA</td>
<td>2897</td>
<td>3.401</td>
<td>.001</td>
</tr>
<tr>
<td>Gender</td>
<td>-.0235</td>
<td>-.224</td>
<td>.823</td>
</tr>
<tr>
<td>FSS</td>
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<td>.014</td>
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<tr>
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<td></td>
<td>.000</td>
</tr>
</tbody>
</table>

\(F(6,134)=3.896, \ p=.001\)

Confidence

Correlations

**Body Mass Index (BMI):** A significant relationship was discovered between the predictor variable BMI and the criterion variable CON for all subjects; when analyzed by gender, the significant positive relationship remained for males but not for females. This means that as males increased in body size, they were likely to be more confident. No conclusion could be drawn for females.

**Figure Satisfaction (FSS):** For the overall sample, there was no significant relationship between the predictor variable FSS and the criterion variable CON. However, when the information was examined by gender,
women had a non-significant negative relationship between FSS and CON, and men had a significant positive relationship. In other words, as men moved in the direction of believing they were underweight, their level of confidence decreased.

**Perceived Physical Ability (PPA):** Significant relationships between PPA and CON were discovered for all subjects, for women, and for men. The relationship was more pronounced for women than men. This means that for all subjects, the greater their faith in their physical ability, the higher their sense of confidence.

**Survey of Eating Patterns (SEP):** For the overall sample, a significant negative relationship was found between SEP and CON, meaning students with higher levels of confidence were less likely to be engaged in disordered eating behaviors than students with lower levels of confidence. No significant relationships were found for either gender.

**Multiple Regression**

The third direct multiple regression was to determine if a relationship existed between the criterion variable CON and the predictors BMI, FSS, PPA, Gender, Race, and SEP. BMI was the first variable entered into the multiple regression equation. The $R^2$ added was 3.07% and indicated a significant statistical relationship, $F(1,139)=4.401, p=.038$.

The second variable entered was FSS and accounted for an additional 0.04% of the variance in CON. To this point the two variables entered were not significantly related to CON, $F(2,138)=2.2142, p=.113$.

After the third variable (PPA) was entered, an additional 14.03% of the variance in CON was accounted for. The combination of the three
predictor variables to this point was significantly related to \( \text{CON} \). \( F(3,137)=9.4476, p=.000. \)

The fourth variable (gender) accounted for an additional 1.53% of the variance in \( \text{CON} \). The combination of all variables entered to this point was significantly related to \( \text{CON} \), \( F(4,136)=7.8066, p = .000. \)

The fifth variable added to the equation was race, which accounted for an additional 2.79% of the variance. The combination of these five variables was significantly related to \( \text{CON} \), \( F(5,135)=7.3774, p=.000. \)

The final variable added was \( \text{SEP} \), which added 1.57% of the variance. A total of 23.04% of the variance in \( \text{CON} \) scores was explained by the predictor variables. The important variables were \( \text{PPA} \), \( \text{BMI} \), gender, race, and \( \text{SEP} \). \( \text{PPA} \) \( (r=.354) \) had a significant correlation with \( \text{CON} \) scores. Thus, students who scored high on \( \text{CON} \) also tended to have higher confidence in their physical ability. \( \text{BMI} \) \( (r=.175) \) had a significant positive relationship with \( \text{CON} \). Thus, students who scored high on \( \text{CON} \) tended to be at higher weights.

\( \text{Race} \) \( (r=-.0853) \) had a significant negative relationship with \( \text{CON} \) scores. Race was coded as 1 for black and 2 for white; thus students with higher levels of \( \text{CON} \) tended to be black. \( \text{Gender} \) \( (r=.228) \) had a significant positive relationship. Gender was coded as 1 for females and 2 for males; thus students with higher levels of \( \text{CON} \) tended to be male. \( \text{SEP} \) \( (r=-.196) \) had a significant negative relationship with \( \text{CON} \). Thus, students who scored high on \( \text{CON} \) were less likely to engage in disordered eating.

As seen in Table 11, when all predictor variables were included in the regression, three contributed significantly to the variance. In order of importance, contributing variables were \( \text{PPA} \), \( \text{FSS} \), and race.
Table 11: Final Regression for CON (Traditional Age Students)

<table>
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<tr>
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<th>Sig. T</th>
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<td>7.028</td>
<td>.000</td>
</tr>
</tbody>
</table>

\[ F(6,134)=6.6851, \ p=.000 \]

Establishing and Clarifying Purpose

Correlations

**Body Mass Index (BMI):** No significant relationship was discovered between BMI and PUR.

**Figure Satisfaction Score (FSS):** There were no significant relationships between the predictor variable FSS and the criterion variable PUR.

**Perceived Physical Ability (PPA):** A significant relationship between PPA and PUR was found for the overall group; when analyzed by gender, a significant relationship remained for women, but not for men. This means that for women, the greater their faith in their physical ability, the more
likely they were to have established and clarified purpose. For men, that
could not be demonstrated.

**Survey of Eating Patterns (SEP):** No relationships were found
between SEP and PUR.

**Multiple Regression**

The fourth direct multiple regression was to determine if a
relationship existed between the criterion PUR and the predictors BMI, FSS,
PPA, Gender, Race, and SEP. BMI was the first variable entered into the
multiple regression equation. The $R^2$ added was 0.08% and indicated no
significant statistical relationship, $F(1,139)=0.1185$, $p=.731$.

The second variable entered was FSS, which accounted for an
additional 0.91% of the variance in PUR. To this point the two variables
entered were not significantly related to PUR, $F(2,138)=0.6912$, $p=.503$.

After the third variable (PPA) was entered, an additional 8.21% of the
variance in PUR was accounted for. The combination of the three predictor
variables to this point was significantly related to PUR, $F(3,137)=4.6273$,
$p=.004$.

The next variable (gender) accounted for an additional 0.00% of the
variance in PUR. The combination of all variables entered to this point was
significantly related to PUR, $F(4,136)=3.4452$, $p=.010$.

The fifth variable added to the equation was race, which accounted
for an additional 2.85% of the variance. The combination of these five
variables was significantly related to PUR, $F(5,135)=3.7009$, $p=.004$.

The final variable added was SEP, which added 0.57% of the variance.
A total of 12.62% of the variance in PUR scores was explained by the
predictor variables. The two important variables were PPA and race. PPA 
\( (r=0.249) \) had a significant correlation with PUR scores. Thus, students who 
scored high on PUR tended to have higher confidence in their physical 
ability. Race \( (r=0.192) \) had a positive relationship with PUR scores. Race was 
coded as 1 for black and 2 for white; thus students with higher levels of PUR 
tended to be white.

As can be seen in Table 12, when all predictor variables were 
considered in the regression, PPA and race contributed significantly to the 
variance.

**Table 12:**
**Final Regression for PUR (Traditional Age Students)**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Beta</th>
<th>T</th>
<th>Sig. T</th>
</tr>
</thead>
<tbody>
<tr>
<td>SEP</td>
<td>0.0795</td>
<td>0.935</td>
<td>0.351</td>
</tr>
<tr>
<td>Race</td>
<td>0.1645</td>
<td>1.954</td>
<td>0.053</td>
</tr>
<tr>
<td>BMI</td>
<td>-0.0342</td>
<td>-0.298</td>
<td>0.766</td>
</tr>
<tr>
<td>PPA</td>
<td>0.3029</td>
<td>3.510</td>
<td>0.001</td>
</tr>
<tr>
<td>Gender</td>
<td>-0.0405</td>
<td>-0.380</td>
<td>0.704</td>
</tr>
<tr>
<td>FSS</td>
<td>0.1599</td>
<td>1.424</td>
<td>0.157</td>
</tr>
<tr>
<td>Constant</td>
<td></td>
<td>2.402</td>
<td>0.018</td>
</tr>
</tbody>
</table>

\[ F(6, 134) = 6.6851, p = .000 \]
Developing Mature Interpersonal Relationships

Correlations

Body Mass Index (BMI): No significant relationship was discovered between the predictor variable BMI and the criterion variable MIR.

Figure Satisfaction Score (FSS): For the overall sample, there was no significant relationship between the predictor variable FSS and the criterion variable MIR. However, when the information was broken out by gender, men had a significant positive relationship. In other words, as men moved in the direction of believing they were underweight, they demonstrated lower levels of developing mature interpersonal relationships.

Perceived Physical Ability (PPA): A significant relationship between Perceived Physical Ability (PPA) and MIR was found for the overall group; when broken down by gender, a significant relationship remained for women, but not for men. This means that for women, the greater their faith in their physical ability, the higher their level of mature interpersonal relationships. For men, that could not be demonstrated.

Survey of Eating Patterns (SEP): No significant relationships were discovered between SEP and MIR.

Multiple Regression

The fifth direct multiple regression was to determine if a relationship existed between the criterion MIR and the predictors BMI, FSS, PPA, Gender, Race, and SEP. BMI was the first variable entered into the multiple regression equation. The $R^2$ added was 1.27% and indicated no significant statistical relationship, $F(1,139)=1.7859, p=.184.$
The second variable entered was FSS, which accounted for an additional 0.26% of the variance in MIR. To this point the two variables entered were not significantly related to MIR, $F(2,138)=1.0734, p=.345$.

After the third variable (PPA) was entered, an additional 7.66% of the variance in MIR was accounted for. The combination of the three predictor variables to this point was significantly related to MIR $F(3,137)=4.6249, p=.004$.

The next variable (gender) accounted for an additional 0.01% of the variance in MIR. The combination of all variables entered to this point was significantly related to MIR $F(4,136)=3.4457, p=.010$.

The fifth variable entered into the equation was race, which accounted for an additional 0.47% of the variance. The combination of these five variables was significantly related to MIR $F(5,135)=2.8900, p=.016$.

The final variable added was SEP, which added 0.54% of the variance. A total of 10.21% of the variance in MIR scores was explained by the predictor variables. The important variable was PPA. PPA ($r=.246$) had a significant correlation with MIR scores. Thus, students who scored high on MIR tended to have higher confidence in their physical ability.

Table 13 shows similar results when all predictor variables are included in the regression. PPA contributed the most to the variance.
Table 13:  
Final Regression for MIR (Traditional Age Students)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Beta</th>
<th>T</th>
<th>Sig. T</th>
</tr>
</thead>
<tbody>
<tr>
<td>SEP</td>
<td>-.0772</td>
<td>-.896</td>
<td>.372</td>
</tr>
<tr>
<td>Race</td>
<td>-.0607</td>
<td>-.712</td>
<td>.478</td>
</tr>
<tr>
<td>BMI</td>
<td>.0479</td>
<td>.413</td>
<td>.681</td>
</tr>
<tr>
<td>PPA</td>
<td>-.2776</td>
<td>-3.174</td>
<td>.002</td>
</tr>
<tr>
<td>Gender</td>
<td>.0184</td>
<td>.170</td>
<td>.865</td>
</tr>
<tr>
<td>FSS</td>
<td>.1736</td>
<td>1.525</td>
<td>.130</td>
</tr>
<tr>
<td>Constant</td>
<td></td>
<td>3.733</td>
<td>.000</td>
</tr>
</tbody>
</table>

F(6,134)=2.539. p=.023

Academic Autonomy

Correlations

**Body Mass Index (BMI):** No significant relationships were discovered between the predictor variable BMI and the criterion variable AA.

**Figure Satisfaction Score (FSS):** There were no significant relationships between the predictor variable FSS and the criterion variable AA.

**Perceived Physical Ability (PPA):** For the overall group, no significant relationships were found between Perceived Physical Ability (PPA) and AA; when broken down by gender, a significant relationship was found for women, but not for men. This means that for women, the greater
their faith in their physical ability, the higher their level of academic autonomy. For men, that could not be demonstrated.

**Survey of Eating Patterns (SEP):** For the overall sample, no significant relationships were found between SEP and AA. However, for males, SEP was significantly negatively related to AA. In other words, men who scored higher on Academic Autonomy were less likely to be engaged in disordered eating behaviors than men who scored lower on AA.

**Multiple Regression**

The sixth direct multiple regression was to determine if a relationship existed between the criterion AA and the predictors BMI, FSS, PPA, Gender, Race, and SEP. BMI was the first variable entered into the multiple regression equation. The $R^2$ added was 0.98% and indicated no significant statistical relationship, $F(1,139)=1.3778, p=.242$.

The second variable entered was FSS and accounted for an additional 1.45% of the variance in AA. To this point the two variables entered were not significantly related to AA, $F(2,138)=1.7216, p=.183$.

After the third variable (PPA) was entered, an additional 0.94% of the variance in AA was accounted for. The combination of the three predictor variables to this point was not significantly related to AA $F(3,137)=1.5927, p=.194$.

The next variable (gender) accounted for an additional 1.09% of the variance in AA. The combination of all variables entered to this point was not significantly related to AA, $F(4,136)=1.5887, p=.181$. 
The fifth variable to the equation was race, which accounted for an additional 0.49% of the variance. These five variables were not significantly related to AA, $F(5,135)=1.4087$, $p=.225$.

The final variable added was SEP, which added 3.32% of the variance. A total of 8.38% of the variance in AA scores was explained by the predictor variables. No variables or combination of variables contributed significantly.

**Intimacy**

**Correlations**

**Body Mass Index (BMI):** No significant relationship was discovered between the predictor variable BMI and the criterion variable INT for the overall group; however, when analyzed by gender, men demonstrated a significant positive relationship, meaning that men of higher weights were more likely than men of lower weights to have been in an intimate relationship in the past year and to have scored high on that scale.

**Figure Satisfaction Score (FSS):** For the overall sample, there was a significant relationship between the predictor variable FSS and the criterion variable INT. However, when the information was examined by gender, the relationship remained (and increased) for men, but did not remain for women. In other words, as men moved in the direction of believing they were underweight, they were less likely to have been in an intimate relationship in the previous year and more likely to have scored lower on that scale.

**Perceived Physical Ability (PPA):** No significant relationships were found between the variable PPA and the variable INT.
Survey of Eating Patterns (SEP): A significant relationship was found between SEP and INT for the overall group. In other words, subjects who scored high on intimacy were more likely to be engaged in disordered eating behaviors than those who scored low or had not been in an intimate relationship in the previous year. Although there was not a significant relationship for either males or females, it appears to have been somewhat stronger among women than men.

Multiple Regression

The seventh direct multiple regression was to determine if a relationship existed between the criterion INT and the predictors BMI, FSS, PPA, Gender, Race, and SEP. BMI was the first variable entered into the multiple regression equation. The $R^2$ added was 0.21% and indicated no significant statistical relationship, $F(1,139)=0.2969$, $p=.587$.

The second variable entered was FSS, which accounted for an additional 9.13% of the variance in INT. To this point the two variables entered were not significantly related to INT, $F(2,138)=7.1122$, $p=.001$.

After the third variable (PPA) was entered, an additional 0.43% of the variance in INT was accounted for. The combination of the three predictor variables to this point was significantly related to INT $F(3,137)=4.9501$, $p=.003$.

The next variable (gender) accounted for an additional 5.91% of the variance in INT. The combination of all variables entered to this point was significantly related to INT, $F(4,136)=6.3283$, $p=.000$. 
The fifth variable entered into the equation was race, which accounted for an additional 0.65% of the variance. The combination of these five variables was significantly related to INT, \(F(5,135)=5.2742, p=.000\).

The final variable added was SEP, which added 1.57% of the variance. A total of 17.91% of the variance in INT scores was explained by the predictor variables. The two important variables were FSS and gender. FSS \((r=.238)\) had a significant correlation with INT scores. Thus, the higher INT tended to be, the higher the FSS score tended to be. Gender \((r=-.343)\) had a significant negative relationship with INT scores. Gender was coded as 1 for female and 2 for male; thus students with higher levels of INT tended to be female.

As can be seen in Table 14, when all predictor variables were included in the regression analysis, only gender contributed significantly to the variance in INT.
Table 14:
Final Regression for INT (Traditional Age Students)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Beta</th>
<th>T</th>
<th>Sig. T</th>
</tr>
</thead>
<tbody>
<tr>
<td>SEP</td>
<td>.1320</td>
<td>1.602</td>
<td>.112</td>
</tr>
<tr>
<td>Race</td>
<td>.0664</td>
<td>.814</td>
<td>.417</td>
</tr>
<tr>
<td>BMI</td>
<td>-.0373</td>
<td>-.336</td>
<td>.738</td>
</tr>
<tr>
<td>PPA</td>
<td>.1307</td>
<td>1.562</td>
<td>.121</td>
</tr>
<tr>
<td>Gender</td>
<td>-.3131</td>
<td>-3.033</td>
<td>.003</td>
</tr>
<tr>
<td>FSS</td>
<td>.1818</td>
<td>1.671</td>
<td>.097</td>
</tr>
<tr>
<td>Constant</td>
<td></td>
<td>1.815</td>
<td>.072</td>
</tr>
</tbody>
</table>

\[ F(6,134)=4.874, \ p=.000 \]

**Salubrious Lifestyle**

**Correlations**

**Body Mass Index (BMI):** A significant negative relationship was found between BMI and SL for the overall sample; when analyzed by gender the relationship remained for women, but not for men. This means that women with less "healthy" lifestyles were more likely to be at higher weights. No such relationship was demonstrated for men.

**Figure Satisfaction Score (FSS):** For the overall sample, there was a significant negative relationship between the predictor variable FSS and the criterion variable SL. When analyzed by gender the significance
disappeared. This means that, in general, subjects who believed they were overweight had lower levels of salubrious lifestyle; but gender differences were not apparent.

Perceived Physical Ability (PPA): A significant relationship between Perceived Physical Ability (PPA) and SL was found for the overall group; when broken down by gender, significant relationships remained for both men and women. This means that for all subjects, the greater their faith in their physical ability, the more likely they were to be engaged in a salubrious lifestyle.

Survey of Eating Patterns (SEP): No significant relationships were found between SEP and SL.

Multiple Regression

The final direct multiple regression was to determine if a relationship existed between the criterion variable SL and the predictors BMI, FSS, PPA, Gender, Race, and SEP. BMI was the first variable entered into the multiple regression equation. The $R^2$ added was 3.31% and indicated a significant statistical relationship, $F(1,139)=4.7634$, $p=.031$.

The second variable entered was FSS, which accounted for an additional 1.02% of the variance in SL. To this point the combination of the two variables entered was significantly related to SL, $F(2,138)=3.1254$, $p=.047$.

After the third variable (PPA) was entered, an additional 22.88% of the variance in SL was accounted for. The combination of the three predictor variables to this point was significantly related to SL, $F(3,137)=17.0727$, $p=.000$. 
The next variable (gender) accounted for an additional 1.09% of the variance in SL. The combination of all variables entered to this point was significantly related to SL, $F(4,136)=13.4231$, $p=.000$.

The fifth variable added to the equation was race, which accounted for an additional 5.9% of the variance. The combination of these five variables was significantly related to SL, $F(5,135)=14.0377$, $p=.000$.

The final variable added was SEP, which added 0.25% of the variance. A total of 34.43% of the variance in SL scores was explained by the predictor variables. The important variable was PPA. PPA ($r=.501$) had a significant correlation with SL scores. Thus, students who scored high on SL tended to have higher confidence in their physical ability.

As can be seen in Table 15, when all predictor variables were included in the regression equation, three variables contributed significantly to the variance in SL. In order of importance, PPA, Race, and BMI all contributed.
Table 15:
Final Regression for SL (Traditional Age Students)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Beta</th>
<th>T</th>
<th>Sig. T</th>
</tr>
</thead>
<tbody>
<tr>
<td>SEP</td>
<td>-.0500</td>
<td>-.678</td>
<td>.499</td>
</tr>
<tr>
<td>Race</td>
<td>.2575</td>
<td>3.532</td>
<td>.001</td>
</tr>
<tr>
<td>BMI</td>
<td>-.2074</td>
<td>-2.091</td>
<td>.038</td>
</tr>
<tr>
<td>PPA</td>
<td>.4601</td>
<td>6.155</td>
<td>.000</td>
</tr>
<tr>
<td>Gender</td>
<td>.0501</td>
<td>.543</td>
<td>.588</td>
</tr>
<tr>
<td>FSS</td>
<td>.0602</td>
<td>.619</td>
<td>.537</td>
</tr>
<tr>
<td>Constant</td>
<td>4.399</td>
<td></td>
<td>.000</td>
</tr>
</tbody>
</table>

$F(6,134)=11.7280, \ p=.000$

Separate Multiple Regressions for Women and Men

In order to obtain a clearer picture of possible gender differences in relationships among the variables, separate regressions were run for women and men. The results are presented in Tables 16 and 17. All results should be interpreted with extreme caution, due to the small sample sizes (60 men, 81 women). In particular, the results of race as a contributing variable may not be meaningfully interpreted because of the small numbers (20 black women, 4 black men). This section highlights the key areas where gender differences seemed to be present.
Table 16: Multiple Regression for Traditional Age Sample - Women Only (N=81)

<table>
<thead>
<tr>
<th>Predictor:</th>
<th>Body Mass Index</th>
<th>Figure Satisfaction Score</th>
<th>Perceived Physical Ability</th>
<th>Race #</th>
<th>Survey of Eating Patterns</th>
</tr>
</thead>
<tbody>
<tr>
<td>Added R²</td>
<td>Added R²</td>
<td>Added R²</td>
<td>Added R²</td>
<td>Added R²</td>
<td>Added R²</td>
</tr>
<tr>
<td>Conceptions About Body &amp; Appearance</td>
<td>.006</td>
<td>0.454</td>
<td>.038</td>
<td>1.773</td>
<td>.186</td>
</tr>
<tr>
<td>Sexual Identity</td>
<td>.060</td>
<td>5.031*</td>
<td>.004</td>
<td>2.680</td>
<td>.071</td>
</tr>
<tr>
<td>Confidence</td>
<td>.000</td>
<td>0.006</td>
<td>.010</td>
<td>0.389</td>
<td>.167</td>
</tr>
<tr>
<td>Establishing &amp; Clarifying Purpose</td>
<td>.001</td>
<td>0.106</td>
<td>.041</td>
<td>1.726</td>
<td>.103</td>
</tr>
<tr>
<td>Developing Mature Interpersonal Relationships</td>
<td>.000</td>
<td>0.001</td>
<td>.002</td>
<td>0.063</td>
<td>.106</td>
</tr>
<tr>
<td>Academic Autonomy</td>
<td>.015</td>
<td>1.191</td>
<td>.002</td>
<td>0.651</td>
<td>.040</td>
</tr>
<tr>
<td>Intimacy</td>
<td>.006</td>
<td>0.484</td>
<td>.002</td>
<td>0.301</td>
<td>.012</td>
</tr>
<tr>
<td>Salubrious Lifestyle</td>
<td>.107</td>
<td>9.504*</td>
<td>.015</td>
<td>5.428*</td>
<td>.133</td>
</tr>
</tbody>
</table>

*p < .05

# Insufficient number of black female subjects to allow meaningful interpretation of this variable
Table 17: Multiple Regression for Traditional Age Sample - Men Only (N=60)

<table>
<thead>
<tr>
<th>Predictor:</th>
<th>Body Mass Index</th>
<th>Figure Satisfaction Score</th>
<th>Perceived Physical Ability</th>
<th>Race #</th>
<th>Survey of Eating Patterns</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Criterion:</strong></td>
<td>Added R²</td>
<td>F</td>
<td>Added R²</td>
<td>F</td>
<td>Added R²</td>
</tr>
<tr>
<td>Conceptions About Body &amp; Appearance</td>
<td>.002</td>
<td>0.114</td>
<td>.133</td>
<td>4.440*</td>
<td>.076</td>
</tr>
<tr>
<td>Confidence</td>
<td>.055</td>
<td>3.408</td>
<td>.079</td>
<td>4.415*</td>
<td>.107</td>
</tr>
<tr>
<td>Establishing &amp; Clarifying Purpose</td>
<td>.014</td>
<td>8.223</td>
<td>.001</td>
<td>0.424</td>
<td>.019</td>
</tr>
<tr>
<td>Developing Mature Interpersonal Relationships</td>
<td>.034</td>
<td>2.063</td>
<td>.023</td>
<td>1.732</td>
<td>.062</td>
</tr>
<tr>
<td>Academic Autonomy</td>
<td>.002</td>
<td>0.129</td>
<td>.018</td>
<td>0.588</td>
<td>.000</td>
</tr>
<tr>
<td>Intimacy</td>
<td>.216</td>
<td>15.984*</td>
<td>.049</td>
<td>10.277*</td>
<td>.009</td>
</tr>
<tr>
<td>Salubrious Lifestyle</td>
<td>.028</td>
<td>1.677</td>
<td>.010</td>
<td>1.145</td>
<td>.239</td>
</tr>
</tbody>
</table>

*p ≤ .05

# Insufficient number of black male subjects to allow meaningful interpretation of this variable
Conceptions About Body and Appearance

Figure Satisfaction, which had not contributed significantly to the variance for the overall sample, contributed 13.3% of the variance in the male sample, $F(2,57)=4.4399$, $p=.016$. It did not contribute significantly for women. Perceived Physical Ability, which had contributed significantly to the variance for the overall sample, contributed more for the women ($R^2=18.6\%$), $F(3,77)=7.6333$, $p=.000$, than for the men ($R^2=7.6\%$), $F(3,56)=4.9851$, $p=.004$.

Sexual Identity

Weight (BMI), which had not contributed significantly to the regression for the overall sample, contributed significantly to the variance for both women ($R^2=6.0\%$), $F(1,79)=5.0315$, $p=.028$) and men ($R^2=15.6\%$), $F(1,58)=10.7562$, $p=.002$. Figure Satisfaction, which had not contributed significantly to the variance for the overall sample, contributed 9.58% of the variance in the male sample, $F(2,57)=9.5816$, $p=.000$. It did not contribute significantly for women.

Confidence

Figure Satisfaction, which did not contribute significantly to the variance for the overall sample, contributed 7.9% of the variance for the male sample, $F(2,57)=4.4150$, $p=.016$. It was not significant for women. Perceived Physical Ability contributed to the variance for the overall sample; when analyzed by gender, it contributed more for women ($R^2=16.7\%$), $F(3,77)=5.5063$, $p=.002$, than for men ($R^2=10.7\%$), $F(3,56)=5.9313$, $p=.001$. 
Establishment and Clarification of Purpose

Perceived Physical Ability, which had contributed significantly to the overall group, did not contribute to the variance for men; however it contributed 10.3% of the variance for women, $F(3,77)=4.3608$, $p=.007$.

Developing Mature Interpersonal Relationships

Perceived Physical Ability, which had contributed significantly to the variance for the overall sample, did not contribute to the variance for the men. However, it contributed 10.6% of the variance for women, $F(3,77)=3.0917$, $p=.032$.

Academic Autonomy

No gender differences were found in academic autonomy.

Intimacy

Weight (BMI), which had not contributed significantly to the variance for the overall sample, contributed 21.6% of the variance for the men, $F(1,58)=15.9837$, $p=.000$. It did not contribute significantly for women. Figure Satisfaction, which had contributed significantly to the variance for the overall sample, did not contribute to the variance for women, but it contributed 4.9% of the variance for the men, $F(2,57)=10.2767$, $p=.000$.

Salubrious Lifestyle

BMI had contributed significantly to the variance for the overall sample. It did not contribute significantly to the variance for men, but it contributed 10.7% of the variance for women, $F(1,79)=9.5041$, $p=.003$. 
Perceived Physical Ability, which had contributed significantly to the variance for the overall sample, contributed more to the variance for men ($R^2=23.9\%$), $F(3,56)=7.1711$, $p=.000$, than for women ($R^2=13.3\%$), $F(3,77)=8.7790$, $p=.000$.

Non-Traditional Age Students: Exploratory Data Analysis

At least 22 students (12.7\%) of the original 173 respondents were older than traditional age (over 25 for undergraduates or over 28 for graduate students). Because ten students did not give their age, that means the total percentage of non-traditional age students who returned completed, valid packets could be as high as 18.5\%. In reviewing the data, the researcher saw several potential differences between the older students and the younger ones. Because this study is exploratory, and because colleges and universities are seeing increasing numbers of older students, the researcher chose to do some exploratory data analysis with these subjects.

The researcher simply added these 32 subjects back to the sample and did the same analyses with the large sample as had been done with the younger sample (a similar procedure was used by Aronson, Fredman, & Gabriel, 1990). This should be interpreted with extreme caution, because of the fairly low numbers of older students and because the SDTLI and EIS have not been proven valid with older students. However, several intriguing results are presented because they may be worth pursuing in further research.

The mean age of this sample was 22.49 (compared to 20.39 in the smaller sample), and included subjects of the following ages (number of
subjects in parentheses): age 26 (3), 27 (2), 30 (1), 31 (2), 33 (2), 36 (2), 37 (1), 39 (1), 39 (1), 40 (1), 41 (2), 43 (1), 45 (1), 47 (1), and 54 (1). Race and gender were very similar to the smaller sample; graduate students made up a larger percentage of the older sample. Table 18 gives some of the demographics of this sample.

Table 19 gives means and standard deviations of all variables; Table 20 gives correlations among predictor variables. Table 21 presents all the correlations of the sample with the older subjects (n=173), alongside the previously presented correlations of the sample of only non-traditional age students (n=141). Table 22 presents the multiple regression for the overall sample.

**Comparisons to Younger Sample**

The discussion will highlight only those relationships on which the “older” sample differed significantly from the “younger” sample.

**Conceptions About Body and Appearance**

**Correlation:** SEP became significant for all subjects (-.2294) and for female subjects (-.2524).

**Regression:** In the final regression, SEP also emerged as an important predictor.

**Sexual Identity**

**Correlation:** SEP became significant for all subjects (-.2577), women (-.2879), and men (-.2197). FSS became significant for women (-.2678); this canceled out some of the positive correlation for men, thus losing significance for the total sample.
**Regression**: SEP added more for the older group ($R^2 = 5.20$) than for the younger group ($R^2 = 1.9$).

**Confidence**

**Correlation**: SEP (-.2965) became significant for women. PPA (-.2559) became significant for men. BMI lost significance for men and for all subjects.

**Regression**: BMI did not contribute significantly to the variance for the older group ($R^2 = .04$), as it had for the younger group ($R^2 = 3.1$). SEP contributed more for the older group ($R^2 = 3.86$) than for the younger group ($R^2 = 1.6$). In the final regression, SEP became important for the older group, while FSS lost importance.

**Establishing and Clarifying Purpose**

No differences were found between the two samples.

**Developing Mature Interpersonal Relationships**

**Correlation**: SEP became significant for women (-.2053) and for all subjects (-.1860). BMI became significant for all subjects (.1252).

**Regression**: SEP contributed more to the older group ($R^2 = 2.74$) than for the younger group ($R^2 = .05$). In the final regression, SEP became an important predictor.

**Academic Autonomy**

**Correlation**: SEP became significant for all subjects (-.2477) and for female subjects (-.2061).
Regression: SEP contributed more to the older group ($R^2 = 6.03$) than for the younger group ($R^2 = 3.4$). No predictor variable had contributed significantly to the variance for the younger group.

**Intimacy**

Correlation: BMI became significant for the all subjects, (-.1489) and for women (-.1950), but lost significance for men. FSS lost significance for all subjects and for men. SEP lost significance for all subjects. PPA (-.2111) became significant for women,

Regressions: BMI, which had not contributed significantly for the younger group ($R^2 = .02$), became a significant predictor for the older group ($R^2 = 2.2$). FSS had been a more important predictor for the younger group. The two factors together contributed a similar amount to each group. In the final regression, PPA emerged as an important predictor with the older group.

**Salubrious Lifestyle**

Correlation: SEP became significant for all (-.1601) and for women (-.1628). BMI (-.2319) and FSS (-.2658) became significant for men. FSS became significant (-.2216) for women.

Regression: BMI added more for the older group ($R^2 = 6.7$) than for the younger ($R^2 = 3.3$). In the final regression, BMI lost importance.
Table 18:
Demographic Information for Sample Including Non-Traditional Age Students

<table>
<thead>
<tr>
<th>Sex</th>
<th>N</th>
<th>Percent of Sample</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
<td>100</td>
<td>57.8</td>
</tr>
<tr>
<td>Male</td>
<td>73</td>
<td>42.2</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Race</th>
<th>N</th>
<th>Percent of Sample</th>
</tr>
</thead>
<tbody>
<tr>
<td>Black</td>
<td>29</td>
<td>17.3</td>
</tr>
<tr>
<td>White</td>
<td>78</td>
<td>80.4</td>
</tr>
<tr>
<td>Other</td>
<td>4</td>
<td>2.3</td>
</tr>
<tr>
<td>Not Given</td>
<td>5</td>
<td>2.9</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Class</th>
<th>N</th>
<th>Percent of Sample</th>
</tr>
</thead>
<tbody>
<tr>
<td>Freshman</td>
<td>36</td>
<td>20.8</td>
</tr>
<tr>
<td>Sophomore</td>
<td>32</td>
<td>18.5</td>
</tr>
<tr>
<td>Junior</td>
<td>42</td>
<td>24.3</td>
</tr>
<tr>
<td>Senior</td>
<td>32</td>
<td>18.5</td>
</tr>
<tr>
<td>Graduate</td>
<td>26</td>
<td>15</td>
</tr>
<tr>
<td>Not Given</td>
<td>5</td>
<td>2.9</td>
</tr>
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</table>
Table 19:
Means and Standard Deviations for Sample Including Non-Traditional Age Students

<table>
<thead>
<tr>
<th>Variable</th>
<th>All Subjects N= 173</th>
<th>Female Subjects N= 100</th>
<th>Male Subjects N= 73</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>Standard Deviation</td>
<td>Mean</td>
</tr>
<tr>
<td>BMI</td>
<td>23.845</td>
<td>5.176</td>
<td>22.583</td>
</tr>
<tr>
<td>FSS</td>
<td>8.540</td>
<td>1.115</td>
<td>8.770</td>
</tr>
<tr>
<td>PPA</td>
<td>40.479</td>
<td>8.706</td>
<td>38.640</td>
</tr>
<tr>
<td>SEP</td>
<td>31.523</td>
<td>9.919</td>
<td>32.616</td>
</tr>
<tr>
<td>CABA</td>
<td>54.127</td>
<td>10.022</td>
<td>53.410</td>
</tr>
<tr>
<td>CON</td>
<td>87.173</td>
<td>15.955</td>
<td>84.730</td>
</tr>
<tr>
<td>PUR</td>
<td>37.624</td>
<td>12.805</td>
<td>37.390</td>
</tr>
<tr>
<td>MIR</td>
<td>17.225</td>
<td>5.021</td>
<td>17.070</td>
</tr>
<tr>
<td>AA</td>
<td>4.723</td>
<td>2.657</td>
<td>5.050</td>
</tr>
<tr>
<td>SL</td>
<td>4.572</td>
<td>2.226</td>
<td>4.390</td>
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Table 20:
Correlations Among Predictor Variables for Sample Including Non-Traditional Age Students

<table>
<thead>
<tr>
<th></th>
<th>FSS</th>
<th>PPA</th>
<th>SEP</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>All Subjects</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BMI</td>
<td>.4884*</td>
<td>.000</td>
<td>.1221</td>
</tr>
<tr>
<td>FSS</td>
<td>-2656*</td>
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<td>.2142*</td>
</tr>
<tr>
<td>PPA</td>
<td></td>
<td></td>
<td>-.2136*</td>
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</table>

<table>
<thead>
<tr>
<th></th>
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<th>PPA</th>
<th>SEP</th>
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</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Females</strong></td>
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<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BMI</td>
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<td>.000</td>
<td>.365*</td>
</tr>
<tr>
<td>FSS</td>
<td>-2050*</td>
<td>.022</td>
<td>.2834*</td>
</tr>
<tr>
<td>PPA</td>
<td></td>
<td></td>
<td>-.2233</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th></th>
<th>FSS</th>
<th>PPA</th>
<th>SEP</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Males</strong></td>
<td></td>
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<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BMI</td>
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<td>.000</td>
<td>.0446</td>
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<tr>
<td>FSS</td>
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<td>.0923</td>
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<td>PPA</td>
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</table>

* *p ≤ .05
Table 21: Correlations (Including Non-Traditional Students)

<table>
<thead>
<tr>
<th></th>
<th>All Subjects N=173</th>
<th>Females N=100</th>
<th>Males N=73</th>
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<tbody>
<tr>
<td></td>
<td>r</td>
<td>p</td>
<td>r</td>
</tr>
<tr>
<td><strong>Conceptions About Body and Appearance (CABA)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BMI</td>
<td>-0.0105</td>
<td>.446</td>
<td>-0.0254</td>
</tr>
<tr>
<td>FSS</td>
<td>-0.0158</td>
<td>.419</td>
<td>-0.1605</td>
</tr>
<tr>
<td>PPA</td>
<td>0.3185*</td>
<td></td>
<td>0.4126*</td>
</tr>
<tr>
<td>SEP</td>
<td>-0.2294*+</td>
<td>.001</td>
<td>-0.2524*+</td>
</tr>
<tr>
<td><strong>Sexual Identity (SI)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BMI</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FSS</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PPA</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SEP</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Confidence (CON)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BMI</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FSS</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PPA</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SEP</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Establishing and Clarifying Purpose (PUR)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BMI</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FSS</td>
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<td></td>
</tr>
<tr>
<td>PPA</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>SEP</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Developing Mature Interpersonal Relationships (MIR)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BMI</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FSS</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PPA</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SEP</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Academic Autonomy (AA)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BMI</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FSS</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>PPA</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SEP</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Intimacy (INT)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BMI</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FSS</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PPA</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SEP</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Salubrious Lifestyle (SL)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BMI</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FSS</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PPA</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SEP</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*p<.05
+ significant for this sample, not for traditional age sample
#significant for traditional age sample, not for this sample
Table 22: Multiple Regressions for Sample Including Non-Traditional Age Subjects (N=173)

<table>
<thead>
<tr>
<th>Predictor</th>
<th>Body Mass Index</th>
<th>Figure Satisfaction Score</th>
<th>Perceived Physical Ability</th>
<th>Gender</th>
<th>Race</th>
<th>Survey of Eating Patterns</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conceptions About Body &amp; Appearance</td>
<td>Added $R^2$</td>
<td>$E$</td>
<td>Added $R^2$</td>
<td>$E$</td>
<td>Added $R^2$</td>
<td>$E$</td>
</tr>
<tr>
<td>Conceptions About Body &amp; Appearance</td>
<td>.000</td>
<td>0.003</td>
<td>.000</td>
<td>0.025</td>
<td>.110</td>
<td>6.933*</td>
</tr>
<tr>
<td>Sexual Identity</td>
<td>.000</td>
<td>0.001</td>
<td>.002</td>
<td>0.215</td>
<td>.104</td>
<td>6.708*</td>
</tr>
<tr>
<td>Confidence</td>
<td>.004</td>
<td>0.651</td>
<td>.005</td>
<td>0.759</td>
<td>.151</td>
<td>10.747*</td>
</tr>
<tr>
<td>Establishing &amp; Clarifying Purpose</td>
<td>.002</td>
<td>0.417</td>
<td>.002</td>
<td>0.310</td>
<td>.089</td>
<td>5.729*</td>
</tr>
<tr>
<td>Developing Mature Interpersonal Relationships</td>
<td>.014</td>
<td>2.420</td>
<td>.001</td>
<td>1.323</td>
<td>.075</td>
<td>5.622*</td>
</tr>
<tr>
<td>Academic Autonomy</td>
<td>.009</td>
<td>1.600</td>
<td>.001</td>
<td>0.869</td>
<td>.012</td>
<td>1.272</td>
</tr>
<tr>
<td>Intimacy</td>
<td>.022</td>
<td>3.858*</td>
<td>.050</td>
<td>6.558*</td>
<td>.009</td>
<td>4.946*</td>
</tr>
<tr>
<td>Salubrious Lifestyle</td>
<td>.067</td>
<td>12.384</td>
<td>.017</td>
<td>7.903</td>
<td>.210</td>
<td>23.540*</td>
</tr>
</tbody>
</table>

* $p < .05$
CHAPTER V
SUMMARY AND DISCUSSION

This chapter briefly summarizes the findings of the study. It then examines the theoretical and practical implications of the study and concludes with suggestions for future research.

Summary

A study of 141 traditional age students at Mississippi State University revealed several significant relationships between weight and psychosocial development, between figure satisfaction and psychosocial development, and between perceived physical ability and psychosocial development. The most consistent findings were that neither women or men were satisfied with their body size, but that body size had different meanings for women and men; that perceived physical ability was significantly related to psychosocial development, but that there were some gender differences in the relationships; and that disordered eating behaviors were not generally related to psychosocial development.

When 22 non-traditional age students and 10 students for whom age information was not available were added to the analyses, several important questions were raised about the relationship between weight
and psychosocial development and about the relationship between disordered eating and psychosocial development for older students.

The study was generally supportive of Chickering’s writings about the importance of physical competence. However, it revealed a more complex picture of body acceptance than is portrayed in most discussions of Chickering’s fourth vector.

The study reinforces the importance of student development practitioners continuing and expanding their educational efforts concerning a wide variety of body image issues. And, the study raises many interesting questions worth pursuing in future research.

This section will discuss the results for traditional age students. It will first discuss gender differences in figure satisfaction and how those differences might impact interpretation. It will then examine each set of research questions.

**Figure Satisfaction: Gender Differences**

A consistent discovery was that women and men view body size differently. Although similar percentages of women (21%) and men (21.7%) indicated that their ideal figure was different from their current figure, the direction of the dissatisfaction differed dramatically by sex. Women almost uniformly chose an ideal figure smaller than their current figure, whereas men were almost as likely to choose an ideal figure that was larger than their current figure as they were to choose one that was smaller than their current figure. These preferences appeared to have very little relationship to actual size. In general, overweight and obese students
of both sexes expressed a desire to be smaller. Underweight and normal women tended to want to be smaller, whereas underweight and normal weight men tended to want to be larger.

This gender difference in figure satisfaction continued in the examination of the criterion variables. In correlations for five of the eight criterion variables (Conceptions About Body and Appearance, Sexual Identity, Confidence, Developing Mature Interpersonal Relationships, and Intimacy), figure satisfaction had an effect for men. On all those variables, men who wished to be larger scored lower than men who were satisfied or wished to be smaller. For women, no criterion variable was significantly related to figure satisfaction; however Conceptions About Body and Appearance and Sexual Identity approached significance. The direction of the relationship (negative) on those two variables was the opposite of the direction for men.

The gender differences in direction of satisfaction and in direction of correlations may have obscured important statistical relationships in the regressions. This becomes most clear later in the chapter when the contributions of Perceived Physical Ability to the criterion variables are compared with the contributions of Figure Satisfaction Score to the criterion variables. For Perceived Physical Ability, on which the direction of all correlations was the same for women and men, contributions are consistently significant, and results of regressions are consistent with correlations. In contrast, despite the consistent significance of Figure Satisfaction Score in correlation statistics, it does not appear to contribute to the variance on many of the criterion variables. This may be because
Figure Satisfaction Score is not an important contributor; on the other hand, it may be that the differences in direction of correlations for women and men are "canceling each other out" in the regression analyses. The separate multiple regression analyses for women and men clarified these issues and the results were consistent with the speculations.

**Research Questions**

1. Is there a relationship between weight and acceptance of body and appearance? If a relationship exists, will it indicate that overweightness is related to lower levels of body acceptance? Will there be gender differences?

   Is there a relationship between figure satisfaction and level of acceptance of body and appearance? If so, will the relationship indicate that students who perceive their bodies as much different than their ideal score lower on acceptance of body and appearance? Will there be gender differences?

   Is there a relationship between perceived physical ability and level of acceptance of body and appearance? If so, will the relationship indicate that students who score higher on perceived physical ability score higher on acceptance of body and appearance? Will there be gender differences?

Weight (as measured by Body Mass Index) was not related to acceptance of body and appearance (as measured by Conceptions About Body and Appearance) for either women or men. The relationship of
Figure satisfaction (as measured by Figure Satisfaction Score) was unclear. Figure Satisfaction Score did not contribute significantly to the variance in Conceptions About Body and Appearance in the regression, but correlation statistics indicate a possible relationship between figure satisfaction and acceptance of body and appearance. Because Figure Satisfaction Score had a significant positive correlation to Conceptions About Body and Appearance for men ($r=.343, p=.007$) and a non-significant negative correlation for women ($r=-.199, p=.076$), FSS's contribution to the variance in Conceptions About Body and Appearance may have been obscured. In the final regression, beta coefficients did indicate that Figure Satisfaction Score was an important predictor variable, following Perceived Physical Ability and race.

Perceived physical ability (Perceived Physical Ability) was related to acceptance of body and appearance, with the regression indicating that Perceived Physical Ability was the most important predictor of Conceptions About Body and Appearance ($r=.322, p=.000$). Examination of the correlations indicate a possible gender difference in the relationship, with Perceived Physical Ability being more significant for women ($r=.436, p=.000$) than men ($r=.129, p=.329$).

Other predictors: Race was also an important predictor ($r=-.203$), with blacks (actually black women, given the sample) tending to score higher on Conceptions About Body and Appearance. In the final regression beta coefficients also indicated that gender contributed to the variance in Conceptions About Body and Appearance.
2. Is there a relationship between weight and management of sexual emotions? If a relationship exists, will it indicate that overweightness is related to lower levels of management of sexual emotions? Will there be gender differences?

Is there a relationship between figure satisfaction and level of management of sexual emotions? If so, will the relationship indicate that students who perceive their bodies as much different than their ideal score lower on management of sexual emotions? Will there be gender differences?

Is there a relationship between perceived physical ability and management of sexual emotions? If so, will the relationship indicate that students who score higher on perceived physical ability score higher on management of sexual emotions? Will there be gender differences?

The relationship between weight and management of sexual emotions (as measured by Sexual Identity) was not clear. Although Body Mass Index did not contribute significantly to the variance in Sexual Identity in the multiple regression, correlations revealed a possible relationship between weight and management of sexual emotions, as well as a possible gender difference. Body Mass Index was correlated with Sexual Identity for both women (r=-.245, p=.028) and men (r=.411, p=.001), but the directions of the relationships were different, resulting in no relationship between Body Mass Index and Sexual Identity for the overall sample. Women of lower weights and men of higher weights tended to
score high on Sexual Identity. BMI's contribution to the regression analyses may have therefore been obscured.

A similar situation exists in attempting to determine the relationship of figure satisfaction to management of sexual emotions. Although in the direct multiple regression Figure Satisfaction Score did not contribute to the variance in Sexual Identity, correlations revealed different relationships for women and men. For women, Figure Satisfaction Score was negatively related \((r=-.206, p=.065)\); for men the relationship was positive \((r=.520, p=.000)\); resulting in a mild significant relationship for the overall sample \((r=.184, p=.029)\). FSS's contributions to the variance in Sexual Identity may have therefore been obscured. In the final regression beta coefficients revealed that Figure Satisfaction Score was an important predictor, following Perceived Physical Ability.

Perceived physical ability was related to management of sexual emotions, with the regression indicating that Perceived Physical Ability was the most important predictor of Sexual Identity \((r=.246, p=.003)\). Examination of the correlations indicate that this may be more important for women \((r=.349, p=.001)\) than for men \((r=.136, p=.305)\).

3. Is there a relationship between weight and sense of confidence? If a relationship exists, will it indicate that overweightness is related to lower levels of confidence? Will there be gender differences?

Is there a relationship between figure satisfaction and sense of confidence? If so, will the relationship indicate that students who
perceive their bodies as much different than their ideal score lower on sense of confidence? Will there be gender differences?

Is there a relationship between perceived physical ability and sense of confidence? If so, will the relationship indicate that students who score higher on perceived physical ability score higher on levels of confidence? Will there be gender differences?

Weight was related to sense of confidence (Confidence), with the regression indicating that Body Mass Index contributed 3.1% of the variance in Confidence ($r = .175, p=.038$). Correlations indicate a possible gender difference in the relationship, with a significant relationship for men ($r=.252, p=.052$), but not for women ($r=-.009, p=.938$).

The relationship between figure satisfaction and sense of confidence was unclear. Figure Satisfaction Score did not contribute significantly to the variance in Confidence, but correlations indicate a possible relationship between figure satisfaction and sense of confidence. Because Figure Satisfaction Score had a significant correlation to Confidence for men ($r=.393, p=.002$), but not for women ($r=-.082, p=.465$), FSS's contribution to the variance in Confidence may have been obscured. In the final regression, beta coefficients did indicate that Figure Satisfaction Score was an important predictor variable, following only Perceived Physical Ability.

Perceived physical ability was related to sense of competence, with the regression analysis indicating that Perceived Physical Ability was the most important predictor of Confidence, accounting for 14% of the variance ($r=.354, p=.000$). Examination of correlations reveal a possible
gender difference, with Perceived Physical Ability being more significant for women ($r=.403, p=.000$) than men ($r=.201, p=.128$).

Other predictors: Other variables contributing to the variance in the multiple regression were gender, contributing 1.5% of the variance; race, contributing 2.8% of the variance; and SEP, contributing 1.6%. Males and blacks tended to score higher on confidence.

4. Is there a relationship between weight and the establishment and clarification of purpose? If a relationship exists, will it indicate that overweightness is related to lower levels of establishment and clarification of purpose? Will there be gender differences?

Is there a relationship between figure satisfaction and the establishment and clarification of purpose? If so, will the relationship indicate that students who perceive their bodies as much different than their ideal score lower on the establishment and clarification of purpose? Will there be gender differences?

Is there a relationship between perceived physical ability and the establishment and clarification of purpose? If so, will the relationship indicate that students who score higher on perceived physical ability score higher on the establishment and clarification of purpose? Will there be gender differences?

Neither weight nor figure satisfaction was related to the establishment and clarification of purpose (Establishing and Clarifying Purpose). Perceived physical ability was related to establishment and clarification of purpose, with the regression indicating that Perceived
Physical Ability was the most important predictor of Establishing and Clarifying Purpose ($r=.249, p=.003$). Examination of the correlations indicate a possible gender difference, with Perceived Physical Ability being more significant for women ($r=.336, p=.002$) than for men ($r=.160, p=.226$).

Other predictors: Race also contributed 2.8% of the variance ($r=.192$). Students with higher Establishing and Clarifying Purpose scores tended to be white.

5. Is there a relationship between weight and the development of mature interpersonal relationships? If a relationship exists, will it indicate that overweightness is related to lower development of mature interpersonal relationships? Will there be gender differences?

Is there a relationship between figure satisfaction and the development of mature interpersonal relationships? If so, will the relationship indicate that students who perceive their bodies as much different than their ideal score lower on the development of mature interpersonal relationships? Will there be gender differences?

Is there a relationship between perceived physical ability and the development of mature interpersonal relationships? If so, will the relationship indicate that students who score higher on perceived physical ability score higher on the development of mature interpersonal relationships? Will there be gender differences?

Weight was not related to the development of mature interpersonal relationships (Developing Mature Interpersonal Relationships) for either women or men. The relationship between figure satisfaction and mature
interpersonal relationships was unclear. Figure Satisfaction Score did not contribute significantly to the variance in the regression for Developing Mature Interpersonal Relationships, but correlations indicate a possible relationship between figure satisfaction and development of interpersonal relationships, as well as a gender difference in the relationship. Because Figure Satisfaction Score had a significant correlation to Developing Mature Interpersonal Relationships for men ($r=.249$, $p=.055$), but not for women ($r=.029$, $p=.798$), FSS's contributions to the variance may have been obscured.

Perceived physical ability was related to development of mature interpersonal relationships, with the regression indicating that Perceived Physical Ability was the most important predictor of Developing Mature Interpersonal Relationships ($r=.246$, $p=.003$), accounting for 7.6% of the variance. Examination of the correlations indicate a possible gender difference, with Perceived Physical Ability being more significant for women ($r=.301$, $p=.006$) than for men ($r=.169$, $p=.202$).

6. Is there a relationship between weight and academic autonomy? If a relationship exists, will it indicate that overweightness is related to lower levels of academic autonomy? Will there be gender differences?

Is there a relationship between figure satisfaction and academic autonomy? If so, will the relationship indicate that students who perceive their bodies as much different than their ideal score lower on academic autonomy? Will there be gender differences?
Is there a relationship between perceived physical ability and academic autonomy? If so, will the relationship indicate that students who score higher on perceived physical ability score higher on academic autonomy? Will there be gender differences?

Neither weight nor figure satisfaction was related to academic autonomy. The relationship of perceived physical ability to academic autonomy was unclear. Perceived Physical Ability did not contribute significantly to the variance of Perceived Physical Ability, but correlations indicate a possible relationship for women. Because Perceived Physical Ability had a significant positive correlation for women ($r=.219, p=.050$) but a non-significant negative correlation for men ($r=-.025, p=.851$), PPA's contribution to the variance may have been obscured.

Other predictors: Correlations also indicated a possible relationship between disordered eating behavior and academic autonomy for men. The relationship between Academic Autonomy and SEP was significant for men ($r=-.278, p=.031$), but not for women ($r=-.125, p=.269$).

7. Is there a relationship between weight and intimacy? If a relationship exists, will it indicate that overweightness is related to lower levels of intimacy? Will there be gender differences?

Is there a relationship between figure satisfaction and intimacy? If so, will the relationship indicate that students who perceive their bodies as much different than their ideal score lower on intimacy? Will there be gender differences?
Is there a relationship between perceived physical ability and intimacy? If so, will the relationship indicate that students who score higher on perceived physical ability score higher on intimacy? Will there be gender differences?

Because the intimacy scale (Intimacy) is still considered an experimental scale, all conclusions should be viewed with caution. Because students who were not in intimate relationships in the past year were assigned a score of zero, this may distort statistical relationships.

The relationship between weight and intimacy is unclear. According to the regression, Body Mass Index was not related to Intimacy. However, correlations indicate that Body Mass Index may be more important for men than women. Because Body Mass Index had a significant positive correlation for men \( (r = .257, p = .048) \) and a non-significant negative correlation for women \( (r = -.171, p = .128) \), BMI's contribution to the variance in Intimacy may have been obscured.

Figure satisfaction was related to intimacy, especially for men. In the regression, Figure Satisfaction Score contributed 9.1% of the variance in Intimacy \( (r = .238, p = .005) \). Correlations showed possible gender differences, with a significant positive relationship for men \( (r = .307, p = .057) \), but not for women \( (r = -.043, p = .704) \).

Perceived physical ability was not related to intimacy.

Other predictors: Gender contributed 5.9% of the variance in intimacy, with women more likely to be involved in an intimate relationship and to have scored higher on the Intimacy scale than men.
8. Is there a relationship between weight and salubrious lifestyle? If a relationship exists, will it indicate that overweightness is related to lower levels of salubrious lifestyle? Will there be gender differences?

Is there a relationship between figure satisfaction and salubrious lifestyle? If so, will the relationship indicate that students who perceive their bodies as much different than their ideal score lower on salubrious lifestyle? Will there be gender differences?

Is there a relationship between perceived physical ability and salubrious lifestyle? If so, will the relationship indicate that students who score higher on perceived physical ability score higher on salubrious lifestyle? Will there be gender differences?

The relationship of weight to salubrious lifestyle (Salubrious Lifestyle) was unclear. Although Body Mass Index did not contribute significantly to the variance Salubrious Lifestyle in the multiple regression, correlations revealed a possible relationship, as well as a possible gender difference, between weight and salubrious lifestyle. A significant relationship was found between Body Mass Index and Salubrious Lifestyle for women ($r = -0.328, p = 0.003$), but not men ($r = -0.174, p = 0.184$). BMI's contribution to the regression analyses may have therefore been obscured. In the final regression, beta coefficients indicated that Body Mass Index was an important contributor, following Perceived Physical Ability and Race.

Figure satisfaction was not related to salubrious lifestyle.

Perceived physical ability was related to salubrious lifestyle, with the regression indicating that Perceived Physical Ability was the most
important predictor of Salubrious Lifestyle, contributing 22.9% of the variance \((r=.501, p=.000)\). No gender differences were found.

Other predictors: Race also contributed 5.9% of the variance in Salubrious Lifestyle. Students with healthier lifestyles were more likely to be white.

Results of Separate Regressions

Because of the speculations raised in the previous section about how some predictor variables might contribute more of the variance for one gender than the other, separate multiple regressions were run for women and men. Because of the small samples, these regressions must be interpreted with caution. However, in general, the separate regressions confirmed the researcher's speculations about gender differences.

Weight contributed to Conceptions About Body and Appearance for men, but not women. Perceived Physical Ability contributed over twice as much of the variance to Conceptions About Body and Appearance for women as men. Figure satisfaction contributed to Sexual Identity for men, but not women. Figure satisfaction contributed to Confidence for men, but not women. Perceived Physical Ability contributed to Establishing and Clarifying Purpose for women, but not men. Perceived Physical Ability contributed more to Developing Mature Interpersonal Relationships for women than for men. Weight and figure satisfaction both contributed to Intimacy for men, but not women. Weight contributed to Salubrious
Interpretation and Theoretical Implications

This section will look at the three predictor variables of weight, figure satisfaction, and perceived physical ability. For each of the predictor variables, it will discuss the results of the study, how those results compare to the researcher's expectations, and suggest possible reasons for the results. It will then briefly discuss the findings about disordered eating, race, and age. It will conclude with a summary of implications for Chickering's theory.

Since this research only reveals correlations, not causation, the direction of relationships is left unresolved. When a relationship exists, would a change in the predictor variable change the resolution of a psychosocial development task, or would a change in resolution of a psychosocial development task change the predictor variable, or is there some other factor which influences both?

Weight

The relationship between weight and psychosocial development was mixed depending upon the psychosocial issues and gender. Weight had no relationship to body acceptance, establishment and clarification of purpose, development of mature interpersonal relationships, or academic autonomy. It was related to sense of confidence and salubrious lifestyle,
and was related to management of sexual emotions; it was also related to intimacy for males only.

**Body Acceptance**

The researcher initially expected overweight women to score lower on Conceptions About Body and Appearance, because they do not meet society's standards of attractiveness. This was not found. Weight class had no effect on body acceptance for either women or men. Possible reasons for this include the high level of body acceptance, the presence of body image distortion, the failure of the study to account for weight history, or the inadequacy of Conceptions About Body and Appearance for measuring body acceptance.

The first possible explanation, of course, is that students recognize that a wide variety of body shapes and sizes exist and they have come to terms with and accepted their own weight. This seems unlikely, however, given the fact that almost 80% of the subjects chose an "ideal" figure different than their "current" figure.

A second possible explanation is the presence of body image distortion--that students believe certain body sizes are unacceptable, and have an inaccurate view of their own body size. This is consistent with many of the studies cited in earlier chapters, and it seems consistent with the Figure Satisfaction Score results in this study.

A third possibility is that this study failed to take into account the weight history of the subjects. A single Body Mass Index score of current weight is a measurement of a subject at one point in time. It may be that
subjects with a history of struggling with weight would have different experiences of psychosocial development. Attie and Brooks-Gunn (1987) noted that women with a history of repeat dieting had experienced many "body-selves." Herman and Polivy (1975) caution that comparing obese to non-obese subjects is sometimes too simplistic, because the non-obese may stay that way through dietary restraint.

Finally, it may be that Conceptions About Body and Appearance is not a sufficient measure of the construct of body acceptance, because of its emphasis on fairly superficial aspects of the body (i.e., clothing). Figure Satisfaction Score was significantly correlated with Body Mass Index; perhaps Conceptions About Body and Appearance needs to incorporate more questions about satisfaction with one's body size and shape.

Confidence

Body Mass Index was significantly related to confidence for men. Men of higher weights tended to score higher on Confidence. This appears to be due to the tendency of males to associate large body size with muscles and strength, rather than with fat. Attie and Brooks-Gunn (1987) note that pubertal weight gain is due to fat in girls, but to muscles in boys. Striegel-Moore, Silberstein, and Rodin (1986) noted that sex differences in satisfaction with weight emerge at adolescence because sexual maturity brings girls further away from the ideal (i.e., thin) woman, but it brings boys closer to the ideal (muscular) man. Stake and Lauer (1987) found that adolescent male's self-confidence was related to self-ratings of shoulders.
and arms, body parts associated with strength and physical ability. Many men in this study appear to make similar associations.

Management of Sexual Emotions

Correlations indicated a possible relationship between weight and management of sexual emotions, but with different directions for males and females. Women of higher weights tended to score lower on Sexual Identity; men of lower weights tended to score lower on Sexual Identity. This was supported by the results of the separate regressions for women and men. Chickering notes that healthy psychosocial development requires varied direct experiences and roles. It may be that men and women who do not fit society's standards of "acceptance" have had less opportunities to experiment with their emotions, especially in romantic relationships. Recall Stake and Lauer's (1987) findings that overweight women were less likely to date than normal weight women. That study excluded underweight subjects; it may be that underweight men have similar dating experiences to overweight women.

Intimacy

A possible relationship between weight and intimacy was present for men only, with men of lower weights tending to score lower on Intimacy. This was supported by the separate regression for men. Studies have indicated that women may resolve intimacy issues more easily or at an earlier age than men (Straub & Rodgers, 1986; Greeley & Tinsley, 1988). The regression statistics in this study, which indicated that gender was a
significant contributor to the variance in Intimacy, support those studies. This study offers body size as one possible factor in men's failure to resolve intimacy issues.

Among women, it may be that being in a meaningful relationship blocks the negative effects of overweightness. This explanation is supported somewhat by Branch-Simpson's (1984) study of black students, where women reported that their evaluation of their physical appearance wavered depending on the ups and downs in their relationships with men.

**Salubrious Lifestyle**

Weight was related to salubrious lifestyle for women, but not men, with women of lower weights scoring higher on Salubrious Lifestyle. The explanation may be due to gender differences in reasons for exercising.

Several of the items on Salubrious Lifestyle are items which are consistent with behavior recommended for weight loss (i.e., well-balanced meals, and regular exercise). Three of the seven items (numbers 57, 67, and 77) deal specifically with exercise. At least two studies (Silberstein, Striegel-Moore, Timko, & Rodin, 1988; Klesges, Mizes, & Klesges, 1987) found that women, more than men, exercise primarily in order to lose weight; if women maintain lower weights through exercise, it makes sense for low weights to be associated with Salubrious Lifestyle. Men, regardless of weight, may be more likely to engage in exercise.
The finding that most women would prefer a smaller body is consistent with the literature cited extensively in Chapters One and Two. The first important discovery in this study about figure satisfaction is the discovery that men are also dissatisfied with their body size. This contradicts most studies ever published in either the professional or popular literature, which indicate that men are relatively satisfied with their bodies.

However, this study supports an emerging recognition that men are also unhappy with their body size. Men were almost equally divided between those who wanted a larger body and those who wanted a smaller body, a pattern noted recently by other researchers (Silberstein, Striegel-Moore, Timko, & Rodin, 1988; Drenowski & Yee, 1991) This pattern may have been obscured in many earlier studies by scoring methods which assign positive scores to subjects wishing to lose weight and negative scores to those wishing to gain weight; men at either extreme cancel each other out, thus producing an inaccurate picture of satisfaction. This emerging recognition forces us to re-evaluate all of our ideas about body image distortion, which has been thought of as an almost exclusively female phenomenon.

The second important discovery about figure satisfaction is that although both women and men were unhappy with their figures, there were clear differences in how that related to psychosocial development. In general, men who believed they were underweight showed lower levels of
psychosocial development. Significant negative relationships and significant contributions to variance were found for Conceptions About Body and Appearance, Sexual Identity, Confidence, Developing Mature Interpersonal Relationships, and Intimacy. For women, figure satisfaction was not related to any criterion variable.

The researcher postulates four possible reasons for this gender difference in relationships to psychosocial development: the "normative nature of discontent" for women, the success of educational efforts aimed at women, age differences in task resolution for women and men, and emerging sociocultural pressures on men.

First, many women now assume that unhappiness with their bodies is the norm. Silberstein, Striegel-Moore, Timko, and Rodin (1988), describe the phenomenon:

> In a culture that promotes the extremely thin female beauty ideal and thus creates a normative discontent with weight [Rodin, et al 1985], the woman who experiences herself as dissatisfied with her weight resembles rather than deviates from her peers. (p. 230)

If unhappiness with one's body is considered normal, it may "filter" the effect of the unhappiness somewhat. Chapter Two presented several studies that indicated that body dissatisfaction may be a component of female's sex role expectations.

Second, in the past few years, young women have been exposed to tremendous amounts of information about eating disorders and body image in popular magazines and campus presentations. Bookstore shelves are full of popular books aimed at helping women resolve body image issues. All this attention may have allowed women to examine their
preconceptions and eliminate the more negative aspects of body image distortion.

Third, it may be that women have resolved their unhappiness with their bodies before coming to college. Recall the previous discussion (Attie & Brooks-Gunn, 1987; Striegel-Moore, Silberstein, Rodin, 1986) about the different meanings of weight gain for males and females at puberty. Similarly, Duncan, Ritter, Dornbusch, Gross, and Carlsmith (1985) found that among 12 to 17 year-olds, early maturing boys were the most satisfied with their bodies, and early maturing girls the most dissatisfied.

Many girls experience a "crisis" with weight in early adolescence. It may be that men's crisis occurs at a later date - when they realize they will fall short of their muscular ideal. If so, it may mean that the order and timing of the vectors specified by Chickering are valid for men, but that women's struggles with body acceptance may begin much earlier.

Finally, the dissatisfaction of young men in recent studies may be reflective of new cultural pressures. Anecdotally, men's magazines appear to be giving more attention to body appearance; recent popular movie stars portray an unrealistic ideal of the muscular male.

**Perceived Physical Ability**

Perceived physical ability, which is very close to Chickering's original concept of physical competence (part of the first vector), consistently emerged as an important predictor of psychosocial development. It contributed the largest amount of the variance on Conceptions About Body and Appearance, Sexual Identity, Confidence,
Establishing and Clarifying Purpose, Developing Mature Interpersonal Relationships, and Salubrious Lifestyle.

**Perceived Physical Ability and Women: A Surprising Finding**

The researcher expected that Perceived Physical Ability would be significantly related to psychosocial development for men, and not for women. This expectation was influenced by Lerner, Orlos, and Knapp's (1976) finding that males' evaluations of their physical competence were based on self-ratings of effectiveness, whereas women's evaluations were based on self-ratings of appearance. This study found an unexpected, but consistent, pattern: Perceived Physical Ability was significantly related to psychosocial development for women and men, but more so for women than men. In correlations and separate regressions for six of the eight criterion variables (Conceptions About Body and Appearance, Sexual Identity, Confidence, Establishing and Clarifying Purpose, Developing Mature Interpersonal Relationships, and Salubrious Lifestyle), higher confidence in one's physical ability was correlated to higher levels of psychosocial development for women. For men, Perceived Physical Ability was correlated to Salubrious Lifestyle, and contributed to the variance in the regressions for Conceptions About Body and Appearance, Sexual Identity, Confidence, Intimacy, and Salubrious Lifestyle.

Possible explanations for the importance of Perceived Physical Ability to women are similar to the possible explanations for the importance of Figure Satisfaction Score to men: the normative nature of discontent with physical ability for men, the lack of opportunities for girls
to "test" their physical competence, timing differences for men and women in physical ability development, and new cultural messages about physical activity for women.

First, it may be that a "normative nature" of discontent with physical ability exists for men which functions to help them in the same way the normative nature of discontent with weight functions for women, filtering out negative effects of dissatisfaction with one's physical ability.

Second, although opportunities for girls to participate in athletics are increasing, college males have probably had more opportunities to "test" their physical competence (in high school athletics, for example), thus allowing them to put their physical ability into perspective. Through experimentation with many activities, men may have found ones which fit their abilities and lifestyles. It may be that only a small percentage of women have "tested" their skills, and that the experiences of that small group move them beyond their more sedentary peers in psychosocial development.

Third, cultural pressures to be "fit" have increased dramatically for women in the last few years. Recall the study by Wiseman, Gray, Mosimann, and Ahrens (1988) that found that in women's magazines exercise articles have surpassed diet articles only in the last decade. This has created new issues for women; whether these issues are healthy or unhealthy requires more research. Has it allowed women to be freed from restrictive sex roles, helped them find healthier ways to view their bodies? Or has it simply given them a new set of guilt to deal with, a new way to channel their obsession with finding the perfect body? Attie and Brooks-
Gunn (1987) express concern about exercise becoming simply a new obsession for women. McBride (1985), an assistant professor of health education, reflects on her experiences with normal weight women students struggling to lose weight, and expresses concern about the current middle and upper-class preoccupation with health and fitness:

Having a thin figure is no longer sufficient; one must be fit, in shape, as well. Counting calories isn’t enough; now we count miles, laps, minutes, races. More and more people are becoming overly preoccupied with fitting an hour or more of some kind of exercise - usually aerobic - into their already busy daily schedules. Our obsession with weight has evolved into an obsession with fat, and fat phobia is rapidly becoming our newest and most popular unrealistic fear. (McBride, 1985, p. 17)

Race

The study raises tentatively important questions about race. All conclusions about race must be judged with caution since the number of black subjects (4 males, 20 females) was fairly low. The study may have simply tapped into some specific subgroup. However, it is important to note that the percentage of black subjects participating in the study was similar to the percentage of black students enrolled in the institution.

Race contributed significantly to the variance in the criterion variables Conceptions About Body and Appearance, Confidence, Establishing and Clarifying Purpose, and Salubrious Lifestyle. Students who scored higher on Conceptions About Body and Appearance and Confidence tended to be black. Students who scored higher on Establishing and Clarifying Purpose and Salubrious Lifestyle tended to be
white. For this study, the two important variables are Conceptions About Body and Appearance and Salubrious Lifestyle.

Hsu (1987) speculated that black culture protects women from eating disorders more common in white women, but neglects to give details. It may be that black culture accepts a wider variety of body size as attractive for women, thus leading to greater acceptance of body and appearance.

The researcher has no speculations about the reasons for racial differences in salubrious lifestyle. With potentially serious consequences, it is worthy of further exploration.

**Non-Traditional Students**

When non-traditional age students were added to the sample, three potentially important trends were noted: the increased importance of disordered eating, the change in the meaning of body size among men, and the relationship of weight and figure satisfaction to intimacy and sexual identity with women. Because Chickering's theory was not designed with older students in mind, and because the validity of the EIS and the SDTLI have not been tested with older students, these findings should be viewed skeptically.

The most consistent finding among the older student sample was the increased importance of disordered eating as it related to psychosocial development, especially for women. SEP became significantly negatively correlated with five variables for all subjects and female subjects (Conceptions About Body and Appearance, Sexual Identity, Developing Mature Interpersonal Relationships, Academic Autonomy, and Salubrious
Lifestyle); and significantly negatively correlated with Confidence for women. It was significantly (negatively) correlated on only two variables for men (Sexual Identity and Academic Autonomy). It also contributed more to the variance in four variables (Sexual Identity, Confidence, Developing Mature Interpersonal Relationships, and Academic Autonomy), and it emerged as a predictor in the final regression for Conceptions About Body and Appearance.

Older students were no more likely to be engaged in disordered eating behaviors than younger students, but it appeared to have dramatically different meanings for older students. It may be that for traditional age students, college is a time for experimenting with a variety of eating behaviors, and therefore "unhealthy" eating behaviors are not limited to unhealthy people; whereas in older subjects disordered eating behaviors are more indicative of a chronic or clinical problem. A second possibility is that as older students "re-visit" previously unresolved or poorly resolved vectors, disordered eating emerges as a coping mechanism. Michelle Greiner writes:

> The social aspects of human functioning are highlighted in the negative experiences many women have with dieting and eating disorders... Unfortunately, in our culture a woman's physical appearance and attractiveness are largely tied to her weight and age. The popular media clearly dictate that the 'ideal' woman is young and thin. (p. 486)

A second shift was in the relationship between Body Mass Index and several criterion variables, especially for men. For the older sample, Body Mass Index lost its significant positive correlation to Confidence and Intimacy, but gained negative significance to Salubrious Lifestyle. It may be
that as men age they gain more realistic views of their bodies or accept smaller bodies. Or it may be that as men age size becomes more associated with fat (hence the negative correlation to Salubrious Lifestyle) than muscle. Or we may be observing a generational difference, with today’s young men experiencing different pressures regarding body size and shape than their older counterparts.

Finally, two changes indicated that body size may be important to older women’s experiences with intimacy. Body Mass Index became significantly negatively correlated to Intimacy, and Figure Satisfaction Score became significantly negatively correlated to Sexual Identity. It may be that women who have not resolved weight concerns at a younger age have lifelong struggles to maintain successful intimate relationships. A history of being overweight may prevent a woman from being involved in intimate relationships. Conversely, some therapists and writers (for example, Roth, 1984, 1991; Orbach, 1978, 1987) believe many women express their frustrations with relationships through eating and weight; or that they use weight as a way to protect themselves from getting into intimate relationships.

Conclusions

In general, this study lends support to Chickering’s description of the importance of positive resolution of physical competence (vector one): “[T]he development of increased physical and manual skills through participation in athletic and artistic activities should enable change in other areas of equal or greater significance (1969, p. 31).”
However the finding of widespread figure dissatisfaction casts doubt on the belief that women and men "accept their bodies" in college. If Figure Satisfaction Score is considered as a measure of body acceptance, neither women or men in this study had accepted their bodies. The researcher believes that discussions of Chickering's fourth vector need to be expanded to include the complex nature of body satisfaction. Body acceptance is related to body size, to perceptions of "ideal" body shape and size and how a person believes her or his own body corresponds to that ideal, and to perceptions of physical ability. It is clear that males and females deal with some issues regarding physical competence and body acceptance differently.

Practical Implications

Attempts to help students deal with weight, body image, physical ability, and eating issues have long been a part of the repertoire of student affairs professionals, whether expressed through weight loss groups, intramural sports activities, presentations about eating disorders, or wellness fairs. This study supports the need for us to continue and expand these efforts. Discussion of the importance and complexity of body image needs to be included in graduate classes about psychosocial development.

Clearly, clarification of conceptions about one's body is a complex issue. Helping students gain more realistic views of their bodies and become more satisfied with their bodies may help them more successfully accomplish psychosocial development tasks. The media challenges
students with images of dissonance ("the ideal is different from me"); we can provide the support of helping students become aware of a more normal range of physical size and appearance. We should help students become more aware of the barrage of messages about bodies and attractiveness from the media, help them sort out myths from the reality, and help them focus on the instrumental aspects of their bodies rather than just the appearance aspects. Body image programs have focused almost exclusively on women's experiences and pressures; this study clearly indicates that we need to include men as well.

Conversely, it may be that improving psychosocial development will improve body image. When helping students deal with body image issues, whether real (i.e., weight, fitness) or imagined (i.e., body distortion present in eating disorders), we need to focus on more than just the physical aspects (inches, pounds, fat grams). Discussion of psychosocial development issues should be integrated. One suggestion would be to use the SDTLI and accompanying worksheets in body image, weight loss, and eating disorder groups, since this is a concrete and affirming method for students to explore important psychosocial issues.

What about physical ability? Clearly, perceptions of physical ability were important to the development of students, especially women, in this study. We do not yet know enough about the nature of this for women. Is it a healthy development, or simply a new label for an old obsession? If it appears that this is a healthy development, we need to continue to work with women to get experiences which will improve their confidence in their physical abilities. In particular, that may mean giving support to
women of higher weights or with low Perceived Physical Ability (who may be unwilling to participate in physical activities because of shame or past failures) so that they will participate in physical activities.

The researcher is concerned, however, that this new emphasis on fitness may be a new way of making women feel less competent. Presentations about body image issues with women need to discuss not only appearance, weight, and eating, but also the issues associated with fitness.

Finally, we need to be keenly attentive to what is going on with the young men whom we serve. Are men becoming as obsessed with their appearance, particularly body size, as women? Are they dealing with this concern in healthy ways, or unhealthy ones?

Until we know more about the nature of the complex relationship between body image and psychosocial development, we need to recognize that focusing on one aspect of weight/eating/body image is not sufficient. Neither “insight” approaches (such as therapy and support groups), nor “instrumental” approaches (such as providing weight rooms and information about fat grams) are sufficient alone. We need to integrate intellectual, emotional, and physical approaches into our work with students.
Suggestions for Research

As with most research, this study raises more questions than it answers. Following are some ideas the researcher believes are worth pursuing.

1. Most important, any research using the Figure Satisfaction Score or similar instruments should not use negative scores. If negative scores had been used in this study, men's unhappiness with their weight would not have been revealed.

2. This research should be replicated with other samples. This sample contributes to our knowledge because it uses a wider age and class range than most previous research in either psychosocial development and weight/body image literature. However, the relatively small sample size, the geographic location, and the 67% non-return rate all leave possibilities for non-representative results.

The next step should be to replicate the study with a larger sample and conduct separate regressions for women and men. Path analysis could also help begin to sort out the complex relationships among the variables.

3. More research needs to be done with men. Contrary to stereotypes, men are not happy with their bodies. How are men dealing with their dissatisfaction - healthily or unhealthily? In particular, we need to know more about the behaviors of men who believe they are underweight. This may require the development of new instruments to measure eating behaviors, since current instruments are primarily designed to measure
the eating behaviors of people who are overweight or who fear being overweight.

4. Race needs to be the focus of further studies. In particular, the finding that black students have higher body acceptance but less healthy lifestyles is worthy of more attention.

5. More research needs to be done about the meaning of figure satisfaction for individuals. This study used an extremely simple measure—perception of real to perception of ideal. Other questions worth asking might be "how important is it to you to be at your ideal weight?" or "how might having your ideal body change your life?" or "why do you want to be at that weight?" This would help identify students who were merely slightly dissatisfied as opposed to those who were obsessed.

6. When measuring the influence of Body Mass Index and Figure Satisfaction Score, it might be helpful to look at an individual's history rather than a single measure. For example, does a subject who has a history of weight problems differ from one for whom this is a new experience?

7. We need to look at age differences in psychosocial development and eating issues. As discussed previously, weight obsession has been portrayed as an almost universally female phenomenon. That may be due to measurement errors, as discussed in regard to negative Figure Satisfaction Score scores. An alternative explanation is that men resolve their weight/body concerns in college, whereas women struggle with them throughout their lives.
A second possibility is that we are seeing a generational difference here; Baltes, Reese, and Lipsitt (1980) note that "normative, history-graded influences" may change how different cohorts develop. It may be that media attention has shifted the nature of body concerns, to fitness for women, and to obsession with body shape and size for men. Rand and Kuldau (1991) and Striegel-Moore, Silberstein, and Rodin (1986) have found that weight dissatisfaction is a lifelong concern for women, but not men. Will that also be true of this cohort? In particular, the significance of disordered eating among the older sample needs attention.

8. Research about body images in the media needs to be updated. New research concerning the curvaceousness of women in advertising (Silverstein, Perdue, Peterson, Vogel, & Fantin, 1986; Silverstein, Peterson, & Perdue, 1986) could be revealing, and supplemented with research about body shape standards for men. Research updating the numbers of diet articles in women's and men's magazines (Garner, et al; 1986; Wiseman, et al; 1992) and the body size of male and female television characters (Silverstein, 1986) could be informative. Particular attention needs to be paid to how the media are portraying "fitness."

9. Exploration of the effect of the presence of physical disabilities on body image and psychosocial development might be revealing. All the instruments used in this study assume that subjects are "able-bodied" in the traditional sense of the word. As we see increasing numbers of students with disabilities on our campuses, it would be helpful to understand how that affects their psychosocial development.
10. Finally, more qualitative studies might help practitioners better understand the individual meanings of weight and body concerns. The popular literature on weight and body concerns (see, for example, the publications by Roth and Orbach in the bibliography) is full of anecdotal reports of people (usually women) whose body images and eating behavior are tied into emotional issues and dysfunctional family histories; systematic qualitative research might help therapists helping individuals struggling with these issues.


APPENDICES
APPENDIX A

References to Education and Identity
In the NASPA Journal and the
Journal of College Student Personnel/Development
January 1981 - March 1992


APPENDIX B:
INSTRUMENT PACKET
PLEASE NOTE

Copyrighted materials in this document have not been filmed at the request of the author. They are available for consultation, however, in the author's university library.

205-223

University Microfilms International
APPENDIX C:
REGISTRATION FORM
FOR $100 PRIZE

Name______________________________________

Local Phone_________________________________

Local Mailing Address___________________________

Do you want to receive a copy of the results of this study?

YES      NO

_Tear off top half and put in PRIZE DRAWING Box._

A name will be drawn at 1:00 p.m., Monday, February 22. The
winner will receive $100 cash. I will call you if you win, and the
name of the winner will be posted on the door (101 Lee Hall). You
can call 325-3557 after 1:00 Monday, February 22 to find out the
name of the winner.

Good Luck!

Thanks for participating in this study.

Melanie McClellan
APPENDIX D:
Script for follow-up phone calls to students who did not enter the drawing.

Hello, may I speak to _______?

This is __________. I am calling for Melanie McClellan. Two weeks ago you were sent some questionnaires as a part of her dissertation study. Not everyone has returned them yet, so I'm calling to follow up. Did you receive the packet?

If NO: Let me check your mailing address (do so). I'll mail you another copy - I'd appreciate you completing it for me.

If YES: You may remember that anyone who returned the instruments could register for a $100 prize drawing. Since you didn't register, I assume you didn't return your packet. It's really important for her to get that information so she can graduate. I know how busy students are so I'm extending the deadline a week to give you an extra chance to turn it in. If you turn yours in by this coming Monday, March 1, you can still have a chance at a $50 prize. Would you be willing to complete the surveys and return them by Monday?

If YES: Thanks so much. You need to bring it to 101 Lee Hall. After you turn it in the secretary will give you a form to register for the $50 prize.

If NO: I understand. I'd appreciate it if you would at least return the blank instruments when you get a chance - they're kind of expensive, and I can mail them to someone else.

Thanks for your time.
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APPENDIX E

BMI Conversion Table

National Institutes on Health Consensus Development Conference (1985)