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ADOLESCENT WOMEN'S SPORTS INVOLVEMENT AND
SEXUAL BEHAVIOR/HEALTH:
A PROCESS-LEVEL INVESTIGATION

by

Stephanie Jacobs Lehman

A Dissertation Submitted to the Faculty of the
DIVISION OF FAMILY STUDIES AND HUMAN DEVELOPMENT
In Partial Fulfillment of the Requirements
For the Degree of
DOCTOR OF PHILOSOPHY
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DEDICATION

This dissertation is dedicated to my family. To my husband, Aaron Lehman, for your love, understanding, and inspiration as well as for your unwavering belief in me and my ability to achieve anything I put my mind to. To my parents, Sam and Lois Jacobs, whose love, encouragement, and guidance have helped me to pursue my dreams and achieve my goals. Also, I dedicate this dissertation to the memory of my grandmothers, Sara Weinstein and Rachel Jacobs from whom I have drawn much strength.

TABLE OF CONTENTS

I.	LIST OF FIGURES.....	11
II.	LIST OF TABLES.....	12
III.	ABSTRACT	13
IV.	CHAPTER ONE: INTRODUCTION.....	15
	The Current Status of Adolescent Women's Sexual Behavior and Sexual/ Reproductive Health in the United States.....	15
	The Link between Adolescent Women's Involvement in Organized Sports and Adolescent Women's Sexual Behavior and Sexual/Reproductive Health...	16
	Purpose of the Current Study.....	17
	Significance to the Field.....	20
V.	CHAPTER TWO: LITERATURE REVIEW.....	22
	Sports Involvement and Adolescent Women's Health-Related Behaviors and Beliefs.....	22
	Sports Involvement as a Risk Factor in the Lives of Adolescent Women	22
	Sports Involvement as a Positive Factor in the Lives of Adolescent Women...	24
	Adolescent women's self-perceptions	25
	Adolescent women's emotional well-being.....	25
	Adolescent women's health-related behaviors.....	26
	Adolescent women's sexual behavior and sexual/reproductive health.....	28
	Adolescent Women's Sports Involvement and Adolescent Women's Sexual Behavior and Sexual/Reproductive Health.....	29
	Shortcomings of the Literature.....	34
	Investigation of processes.....	34
	Measurement of sports involvement.....	35
	Measurement of sexual behavior.....	37
	One-time-of-measurement design limitations.....	40
	Theoretical Framework.....	42
	Cultural Resource Theory.....	42
	The role of functional body orientation.....	44
	The role of self-empowerment/efficacy.....	44
	Potential Mediators in the Association between Sports Involvement and Adolescent Women's Sexual Behavior and Sexual/Reproductive Health.....	45
	Functional Body Orientation.....	45
	Self-Empowerment/Efficacy.....	50
	Sexual/Reproductive Health-Related Information/Motivation via Coach.....	54

TABLE OF CONTENTS - *Continued*

Research Goals and Hypotheses.....	57
Goals and Hypotheses Based on Quantitative Data.....	57
Bivariate associations.....	57
Mediator effects.	59
Goals Based on Qualitative Data.....	60
VI. CHAPTER THREE: METHODOLOGY.....	62
Procedure.....	62
Participants.....	65
Forced-Choice Self-Report Measures.....	66
Sports involvement.....	66
Functional body orientation.....	67
Self-empowerment/efficacy.....	68
Sexual/reproductive health-related information/motivation via coach.....	69
Sexual risk-taking behavior.....	70
Sexual/reproductive health-seeking behavior.....	70
Sexual/reproductive health.....	71
Demographic and control variables.....	72
Qualitative (Open-Ended) Measures.....	72
VII. CHAPTER FOUR: RESULTS.....	74
Overview.....	74
Quantitative-Based Results	75
Descriptive Statistics - Predictor Variable.....	75
Sports involvement.....	75
Extent of sports involvement.....	75
Age of initial sports participation.....	78
Descriptives - Mediator Variables.....	78
Functional body orientation.....	78
Self-empowerment/efficacy.....	78
Sexual/reproductive health-related information/motivation via coach.....	80
Descriptives - Outcome Variables.....	83
Sexual risk-taking behavior.....	83
Sexual/reproductive health-seeking behavior.....	84
Sexual/reproductive health.....	84
Sexual behaviors other than intercourse.....	85
Bivariate Associations.....	85
Sports involvement and sexual risk-taking behavior.....	85
Sports involvement and sexual/reproductive health-seeking behavior.....	86
Sports involvement and sexual/reproductive health.....	90

TABLE OF CONTENTS - *Continued*

Mediator Effects - The Mediating Role of Functional Body Orientation.....	92
The mediating role of functional body orientation in the association between sports involvement and sexual risk-taking behavior.....	92
The mediating role of functional body orientation in the association between sports involvement and sexual/reproductive health-seeking behavior.....	96
Test of the indirect effect from sports involvement to sexual/ reproductive health-seeking behavior, via functional body orientation...	98
The mediating role of functional body orientation in the association between sports involvement and sexual/reproductive health.....	100
Test of the indirect effect from sports involvement to sexual/ reproductive health, via functional body orientation.....	101
Mediator Effects - The Mediating Role of Self-Empowerment/Efficacy.....	103
The mediating role of self-empowerment/efficacy in the association between sports involvement and sexual risk-taking behavior.....	103
Test of the indirect effect from sports involvement to sexual risk- taking behavior, via self-empowerment/efficacy.....	104
The mediating role of self-empowerment/efficacy in the association between sports involvement and sexual/reproductive health-seeking behavior.....	106
Test of the indirect effect from sports involvement to sexual/ reproductive health-seeking behavior, via self-empowerment/ efficacy.....	107
The mediating role of self-empowerment/efficacy in the association between sports involvement and sexual/reproductive health.....	109
Test of the indirect effect from sports involvement to sexual/ reproductive health, via self-empowerment/efficacy.....	110
Mediator Effects - The Mediating Role of Sexual/Reproductive Health- Related Information/Motivation via Coach.....	112
Qualitative-Based Results.....	113
Influences of Sports Involvement on the Lives of the Adolescent Women.....	117
Health benefits/healthy lifestyle.....	120
Self-empowerment.....	121
Friendships/close relationships.....	123
Discipline/responsibility.....	124
Stress reduction.....	125
Teamwork skills.....	125
Involvement.....	126
Time loss.....	128
The Influence of Sports Involvement on Adolescent Women's Views of their Bodies.....	128

TABLE OF CONTENTS - *Continued*

Adolescent Women's Experience of Coach Talks Regarding Sexual/ Reproductive Health-Related Issues.....	132
Content of sexual/reproductive health-related coach talk.....	133
Context of sexual/reproductive health-related coach talk.....	136
Goals of sexual/reproductive health-related coach talk.....	138
Characteristics of coaches involved in sexual/reproductive health-related talks with their adolescent female athletes.....	140
Adolescent women's reactions to sexual/reproductive health-related coach talk.....	142
VII. CHAPTER FIVE: DISCUSSION.....	145
Overview.....	145
Sports Involvement and Sexual Risk-Taking Behavior.....	148
Sports Involvement and Sexual/Reproductive Health-Seeking Behavior.....	151
Sports Involvement and Sexual/Reproductive Health.....	152
Potential Mediators in the Association between Adolescent Women's Sports Involvement and Adolescent Women's Sexual Behavior and Sexual/ Reproductive Health.....	154
The mediating role of self-empowerment/efficacy.....	154
The mediating role of functional body orientation.....	158
The mediating role of sexual/reproductive health-related information/ motivation via coach.....	162
Gender of coaches involved in sexual/reproductive health-related coach talk.....	164
Adolescent Women's Experience of Sexual/Reproductive Health-Related Coach Talk.....	164
Qualitative-Based Outcomes of Adolescent Women's Sports Involvement....	170
Overview.....	170
Outcomes of sports involvement -- implications for adolescent women's sexual behavior/health.....	172
Limitations and Future Directions.....	176
Contributions and Implications.....	183
Concluding Remarks.....	189
VI. APPENDIX A: Oral Recruitment Script.....	191
VII. APPENDIX B: Participant Information Form.....	193
VIII. APPENDIX C: Consent Form.....	195
IX. APPENDIX D: Questionnaire Cover.....	198

TABLE OF CONTENTS - *Continued*

X.	APPENDIX E: Sports Involvement Scale.....	200
XI.	APPENDIX F: Functional Body Orientation Scale.....	202
XII.	APPENDIX G: Self-Empowerment/Efficacy Scales.....	204
XIII.	APPENDIX H: Sexual/Reproductive Health-Related Information/Motivation via Coach Scale.....	209
XIV.	APPENDIX I: Sexual Risk-Taking Behavior, Sexual/Reproductive Health, and Sexual Health-Seeking Behavior Scales; Sexual Orientation Questions; and Non-Intercourse Sexual Behavior Questions.....	211
XV.	APPENDIX J: Demographic Questions.....	215
XVI.	APPENDIX K: Open-Ended Questions.....	217
XVII.	APPENDIX L: Human Subjects Approval Form.....	222
XVIII.	REFERENCES.....	224

LIST OF FIGURES

FIGURE 1,	A Model of the Mediating Role of Functional Body Orientation in the Association between Sports Involvement and Adolescent Women's Sexual Behavior and Sexual/Reproductive Health.....	46
FIGURE 2,	A Model of the Mediating Role of Self-Empowerment/Efficacy in the Association between Sports Involvement and Adolescent Women's Sexual Behavior and Sexual/Reproductive Health.....	51
FIGURE 3,	A Model of the Mediating Role of Sexual/Reproductive Health-Related Information/Motivation via Coach in the Association between Sports Involvement and Adolescent Women's Sexual Behavior and Sexual/Reproductive Health.....	56
FIGURE 4,	A Model of the Mediating Role of Functional Body Orientation in the Association between Sports Involvement and Adolescent Women's Sexual Risk-Taking Behavior.....	95
FIGURE 5,	A Model of the Mediating Role of Functional Body Orientation in the Association between Sports Involvement and Adolescent Women's Sexual/Reproductive Health-Seeking Behavior.....	97
FIGURE 6,	A Model of the Mediating Role of Functional Body Orientation in the Association between Sports Involvement and Adolescent Women's Sexual/Reproductive Health.....	102
FIGURE 7,	A Model of the Mediating Role of Self-Empowerment/Efficacy in the Association between Sports Involvement and Adolescent Women's Sexual Risk-Taking Behavior.....	105
FIGURE 8,	A Model of the Mediating Role of Self-Empowerment/Efficacy in the Association between Sports Involvement and Adolescent Women's Sexual/Reproductive Health-Seeking Behavior.....	108
FIGURE 9,	A Model of the Mediating Role of Self-Empowerment/Efficacy in the Association between Sports Involvement and Adolescent Women's Sexual/Reproductive Health.....	111

LIST OF TABLES

TABLE 1,	Means and Standard Deviations of the Composite Sports Involvement Measure (the Predictor Variable) and the Four Dimensions of Sports Involvement.....	76
TABLE 2,	Means and Standard Deviations of the Mediator and Outcome Variables	79
TABLE 3,	Regression Analysis for Sports Involvement Predicting Adolescent Women's Sexual Risk-Taking Behavior, Controlling for Socioeconomic Status and Ethnicity.....	87
TABLE 4,	Regression Analysis for Sports Involvement Predicting Adolescent Women's Sexual/Reproductive Health-Seeking Behavior, Controlling for Socioeconomic Status and Ethnicity.....	89
TABLE 5,	Regression Analysis for Sports Involvement Predicting Adolescent Women's Sexual/Reproductive Health, Controlling for Socioeconomic Status and Ethnicity.....	91
TABLE 6,	Codes - Influence of Sports Involvement on the Lives of the Adolescent Women.....	118
TABLE 7,	Codes - Influence of Sports Involvement on Adolescent Women's Views of their Bodies.....	130
TABLE 8,	Codes - Content of Sexual/Reproductive Health-Related Coach Talk...	135
TABLE 9,	Codes - Context of Sexual/Reproductive Health-Related Coach Talk...	137
TABLE 10,	Codes - Goals of Sexual/Reproductive Health-Related Coach Talk.....	139
TABLE 11,	Codes - Characteristics of Coaches Involved in Sexual/Reproductive Health-Related Coach Talk.....	141
TABLE 12,	Codes - Adolescent Women's Reactions To Sexual/Reproductive Health-Related Coach Talk.....	143

ABSTRACT

This multi-method study explored the link between sports involvement during the high school years and sexual behavior/health among 176 adolescent women. The current study employed quantitative methodology to replicate the documented connections between sports involvement and adolescent women's sexual behavior and sexual/reproductive health, but used more sensitive and appropriate measures. Additionally, in part directed by cultural resource theory, the present study helped to fill a gap in the literature by exploring three potential explanatory mechanisms (i.e., mediators) in the above connections. Those mechanisms included: (a) functional body orientation; (b) self-empowerment/efficacy; and (c) sexual/reproductive health-related information/motivation via coach.

Results from the quantitative data suggested that adolescent women's involvement in organized team sports was favorably associated with each of the following: (a) sexual risk-taking behavior, (b) sexual/reproductive health-seeking behavior, and (c) sexual/reproductive health. In addition, both adolescent women's functional body orientation and adolescent women's self-empowerment/efficacy emerged as mediators in the associations between adolescent women's sports involvement and adolescent women's sexual behavior/health. Thus, the current study suggests the potential for sports involvement to favorably influence adolescent women's sexual behavior/health and pinpoints key mechanisms that help to clarify the nature of that influence.

The current study used qualitative methodology to explore the ways in which the adolescent women felt that their sports involvement influenced their lives and feelings about their bodies. In general, the sports involvement-derived outcomes that emerged from the adolescent women's written comments were positive, suggesting that the adolescent women felt that their sports involvement during their high school years was overwhelmingly beneficial. Potential implications of those outcomes for the sexual/reproductive health of adolescent women are discussed.

Qualitative methodology also was used in the current study to explore adolescent women's experience of sexual/reproductive health-related coach talk. Based on the adolescent women's reports of their experiences of such coach talk, it appears that coaches might be one logical and effective avenue by which key sexual/reproductive health messages can be transmitted to adolescent female athletes. Implications for the development of sports and community programs focused on the prevention of teenage pregnancy and STDs are discussed.

CHAPTER 1: INTRODUCTION

The Current Status of Adolescent Women's Sexual Behavior and Sexual/Reproductive Health in the United States

Much concern has been voiced by policy-makers, researchers, and health professionals/educators about the high rates and early onset of sexual activity among adolescents, as well as about the prevalence of some of the undesirable consequences of teenage sexual activity (e.g., unwanted pregnancy, sexually transmitted diseases). National surveys indicate that, in the United States, the average age of females' first sexual intercourse is between 16 and 17, and by the age of 18, 65-75% of young women have engaged in sexual intercourse (The Allen Guttmacher Institute, 1999: Youth Risk Behavior Surveillance, 1999). Perhaps more importantly, in the United States, sexually active teenagers experience high rates of unwanted pregnancy and sexually transmitted diseases. For example, one in eight teenagers contract a sexually transmitted disease each year (three million per year) and approximately one-fifth of all people with AIDS are in their 20's - most of whom were infected as teenagers (Center for Disease Control, 1993).

Although recent reports suggest that teenage pregnancy rates in the United States are on the decline, the United States continues to have the highest rates of teenage pregnancy among industrialized nations; each year, approximately one million teenage women become pregnant (85% of which are unintended pregnancies; The Allen Guttmacher Institute, 1999). Notably, Arizona has the third highest teenage pregnancy

rate in the United States (The National Campaign to Prevent Teen Pregnancy, 1999).

The social, economic, and health consequences of teenage pregnancy and sexually transmitted diseases are of great concern in the United States and research efforts that focus on the identification of potential factors that may prevent pregnancy and sexually transmitted diseases among adolescents are certainly warranted.

The Link between Adolescent Women's Involvement in Organized Sports and Adolescent Women's Sexual Behavior and Sexual/Reproductive Health

Given the high rates of adolescent sexual activity and the related health consequences, it is crucial to identify contexts that may reduce sexual risk-taking behavior and enhance sexual/reproductive health. Sports, suggested to "provide many girls with a reasonably safe and secure environment in which to grow and test their abilities and limits," may be one such context (Melnick, Sabo, Miller, Farrell, & Barnes, 1999, p. 27). Recently, researchers have begun to explore the proposition that sports involvement is linked to reduced sexual risk-taking behavior and enhanced sexual/reproductive health among adolescent women. Indeed, a number of research efforts indicate that, compared to adolescent women who do not engage in sports, adolescent women who are involved in one or more sports engage in sexual intercourse less frequently, have fewer sexual intercourse partners, experience sexual intercourse later, and report lower rates of pregnancy (e.g., Miller, Sabo, Farrell, Barnes, & Melnick, 1998; Rome, Rybicki, & Durant, 1998; Sabo, Miller, Farrell, Melnick, & Barnes, 1999). These findings are maintained even when socioeconomic status, age, and ethnicity are held constant.

Purpose of the Current Study

The connection between involvement in sports and sexual risk-taking behavior and sexual/reproductive health among adolescent women is promising in terms of the development of programmatic efforts to decrease rates of teenage pregnancy and sexually transmitted diseases. This connection is especially promising given the changing cultural climate in the United States with respect to females' involvement in sports. Specifically, females' participation in sports is gaining increasing acceptance in American culture and since the passage of Title IX, females have been granted a larger share of athletic opportunities and resources (National Federation of State High Schools Association, 1997).

Although the association between adolescent women's sports involvement and adolescent women's sexual risk-taking behavior and sexual/reproductive health has been documented, extant research efforts have not explored the processes or mechanisms (i.e., mediators) that help to explain this association; that is, we still do not know why the association exists. As suggested by Melnick et al. (1999), the connection is likely quite complex, consisting of an array of psychosocial and sociocultural processes that can influence adolescent women's sexual risk-taking behavior and sexual/reproductive health.

The tenets of Miller et al.'s (1998) cultural resource theory (described in detail in the following chapter) suggest likely mediators in the association between adolescent women's sports involvement and adolescent women's sexual behavior and sexual/reproductive health. Specifically, cultural resource theory proposes that the

aforementioned association is mediational in nature and suggests the importance of investigating cultural and exchange processes (e.g., dismissal of stereotypical gender roles/scripts) in that association (rather than simply assessing the association at the bivariate level). To fill a critical gap in the literature, and guided in part by cultural resource theory (see Miller et al., 1998), the current project employed quantitative methodology to explore three processes or mechanisms (i.e., mediators) that help to explain the documented connections between adolescent women's involvement in organized sports and adolescent women's sexual behavior and sexual/reproductive health. Those explanatory processes/mechanisms included the following: (a) functional body orientation; (b) self-empowerment/efficacy; and (c) sexual/reproductive health-related information/motivation via coach.

In addition to exploring mediational processes, the current investigation improved upon existing studies of the impact of adolescents' involvement in sports on adolescent sexual behavior by improving on the measurement of two key constructs -- sports involvement and sexual risk-taking behavior. First, the present study improved upon the measurement of sports involvement used in existing studies. Current measures of sports involvement typically are quite simplistic/uni-dimensional (i.e., participation/no participation; number of sports in which one participates). A broader, multi-dimensional measure of sports involvement may be more appropriate and meaningful. For example, it may be critical to assess not only the number of sports in which an individual participates or whether an individual is involved in sports (objective indicators), but also the degree to which an individual is psychologically invested in sports (a subjective measure).

In the present study, the following dimensions of adolescent women's sports involvement were assessed: (a) number of sports in which the individual participated during the high school years; (b) number of years (seasons) in which the individual was involved in sports during the high school years; (c) number of hours per week devoted to sports during the high school years; and (d) degree of psychological investment in sports during the high school years (i.e., how much psychological energy the individual put into sports and how important/salient sports were to the individual). Because the specific dimensions of sports involvement were significantly correlated with each other (a process that is discussed in detail in Chapter 3), those dimensions were combined to form a reliable composite sports involvement measure.

Second, the current investigation attempted to improve upon existing studies of sports involvement and young women's sexual risk-taking behavior by expanding existing measures of sexual risk-taking behavior. In previous studies, measurement of sexual behavior often is limited; that is, although questions often tap whether an individual engages in sexual intercourse, number of sexual intercourse partners, and age at first sexual intercourse experience, questions regarding use of safety precautions during sexual intercourse (e.g., contraceptive use) and engagement in sexual/reproductive health-seeking behaviors (e.g., discussing reproductive or sexual health precautions/issues with a doctor or health professional, discussing the use of condoms or other contraception with one's sexual partner) have not been included (see Savage & Holcomb, 1999 for an exception with respect to measurement of contraceptive use). In the current study, in addition to questions about sexual intercourse typically used in studies of sports

involvement and sexual behavior, questions about behaviors that decrease sexual health risks and enhance sexual/reproductive health (i.e., contraceptive use and engagement in sexual/reproductive health-seeking behaviors) were incorporated.

To supplement the quantitative-based data and to generate a contextualized portrayal of adolescent women's sports involvement during the high school years, the current study employed qualitative methodology (i.e., participants were afforded the opportunity to answer open-ended questions in the questionnaire). Specifically, such methodology was utilized to explore the ways in which the adolescent women felt that their sports involvement during their high school years influenced their lives and feelings about their bodies, as well as adolescent women's experiences of sexual/reproductive health-related coach talk.

Significance to the Field

As described above, the current research extended previous studies of adolescent women's involvement in organized sports and adolescent women's sexual risk-taking behavior and sexual/reproductive health by improving upon current measures of sports involvement and sexual behavior. Additionally, the present study filled a critical gap in the literature by exploring processes (i.e., mediators) that help to explain the link between adolescent women's involvement in organized sports and adolescent women's sexual behavior and sexual/reproductive health. Identification of such processes (sexual/reproductive health-related information/motivation via coach in particular) may help in the development of adolescent females' sports programs (i.e., organized team sports) as well as community programs focused on the prevention of teenage pregnancy

and sexually transmitted diseases. Addressing sexual/reproductive health concerns through sports programs may be one avenue that is acceptable for policy-makers, program managers, and communities.

CHAPTER 2: LITERATURE REVIEW

Sports Involvement and Adolescent Women's Health-Related Behaviors and Beliefs

Sports Involvement as a Risk Factor in the Lives of Adolescent Women

Previous research on adolescent women's involvement in sports has focused primarily on adolescent women's participation in elite sports (e.g., gymnastics, ballet, ice-skating) that promote an atmosphere of individual competition and focus on physique. Participation in such elite sports has been investigated as a risk factor for adolescent women's adjustment and has been shown to be associated with increased risk for eating disorders and distorted body image (e.g., Brooks-Gunn, Burrow, & Warren, 1988; Harris & Greco, 1990; Stice, 1994).

For example, in a study of attitudes towards eating and eating behaviors among different groups of elite female adolescent athletes (ballet dancers, figure skaters, and swimmers who were training for regional or national competition) and adolescents females not involved in sports, Brooks-Gunn et al. (1988) found that dancers and skaters had more negative eating attitudes than did swimmers or non-athletes. In addition, compulsive dieting (restrained eating) and binge-purge eating were behaviors that were more common among dancers and skaters (sports which emphasize a thin body shape and aesthetic appeal) than among swimmers or non-athletes.

In a study of late adolescent female gymnasts' weight-related attitudes and feelings, Harris and Greco (1990) found that gymnasts were extremely concerned about their weight, although on objective measures, they were actually quite low in weight. In

fact, many of the gymnasts were eager to lose weight and considered themselves to be too fat. Additionally, the gymnasts reported that they weighed themselves frequently, thought about their weight regularly, and talked about their weight often. Harris and Greco (1990) explain that the gymnasts' preoccupation with weight might be considered excessive as well as obsessive (see Garner, Olmstead, & Polivy, 1983; as cited in Harris & Greco, 1990). The gymnasts in Harris and Greco's study also appeared to be at risk in terms of pathological eating behaviors. Specifically, the gymnasts showed tendencies to score higher than most adolescent girls on the Dieting and Bulimia scales of the Eating Attitude Test (see Garner, Olmstead, Bohr, & Garfinkel, 1982; as cited in Harris & Greco, 1990).

Thus, as suggested in the existing literature, some female athletes may be at risk for developing disordered eating attitudes and behaviors as well as distorted body image. However, research suggests that this phenomenon may be restricted to female athletes engaged in sports in which aesthetic appeal is important, like ballet, gymnastics, and ice-skating. In fact, in a study of social and cultural factors related to eating problems (as measured by a brief version of the Eating Attitudes Test) among Norwegian adolescent girls, Wichstrom, Skogen, and Oia (1994) found that adolescent girls involved in aesthetic or appearance-oriented sports dieted compulsively more often than did adolescent girls involved in sports not focused on aesthetics/appearance. The proposition that dieting pressures and eating behavior concerns are particularly strong for female adolescent athletes involved in sports which require a thin, attractive appearance as part of the overall standard by which performance is judged (e.g., ballet, gymnastics, ice-

skating) is discussed in detail later in this chapter (see Functional Body Orientation section).

Sports Involvement as a Positive Factor in the Lives of Adolescent Women

Recently, research has shifted to adolescent women's involvement in non-elite, organized team sports (e.g., soccer, softball) and the potential for such sports to serve a positive, protective role in the lives of adolescent women (e.g., Baumert, Henderson, & Thompson, 1998; Butcher, 1989; Jaffee & Manzer, 1992; Jaffee & Ricker, 1993; Savage & Holcolmb, 1999; Steiner, McQuivey, Pavelski, Pitts, & Kraemer, 2000). For example, existing studies suggest that adolescent women's involvement in organized sports is favorably linked to adolescent women's physical and emotional health/well-being (i.e., self-perceptions, emotional well-being, health-related behaviors, and sexual behavior/health). However, it is important to note that most of those studies are limited. For example, because of the one-time-of-measurement design of those studies, conclusions regarding temporality and direction of effects cannot be made (see for example, Baumert et al., 1998; Jaffee & Manzer, 1992; Miller et al., 1998; Rome et al., 1998; Steiner et al., 2000; see Aaron, Dearwater, Anderson, Olson, Kriska, & LaPorte, 1995, for an exception). Additionally, third-variable explanations cannot be ruled out in those studies (and therefore, causal conclusions cannot be made); that is, co-varying factors (e.g., health-consciousness) may be able to account for both involvement in sports and physical (and perhaps emotional) health/well-being among adolescent female sports participants. The limitations of existing adolescent sports and sexuality research are addressed in further detail in the limitations section of this chapter.

Adolescent women's self-perceptions. With respect to adolescent women's self-perceptions, existing studies indicate that adolescent women's participation in non-elite, organized team sports is positively linked to adolescent women's self-esteem and self-confidence (e.g., Butcher, 1989; Jaffee & Manzer, 1992; Jaffee & Ricker, 1993; McAuley, 1994). For example, in three recent studies, Jaffee and her colleagues investigated the association between sports involvement and self-perceptions (self-esteem and self-confidence) among adolescent women from diverse economic and racial backgrounds (Jaffee & Manzer, 1992; Jaffee & Ricker, 1993; Jaffee & Wu, 1996). All three studies found a strong positive association between adolescent women's sports involvement and adolescent women's self-esteem and self-confidence. Adolescent women who participated in sports at higher levels (indicated by number of school sports teams on which adolescent women played) felt relatively more positive and confident about themselves and their abilities. Interestingly, Jaffee and her colleagues suggest (but did not empirically test) the proposition that the adolescent women who participated in their study derived their positive self-esteem and self-confidence from sports involvement via the following processes or mechanisms: (a) challenge, (b) achievement, (c) risk-taking experiences, and (c) skill development.

Adolescent women's emotional well-being. A favorable link between adolescent women's emotional well-being and adolescent women's sports involvement has also been documented. For example, in a recent study of Georgia high school students in grades 9 through 12, Baumert et al. (1998) compared sports participants and non-participants on a measure of emotional well-being -- feelings of hopelessness. Using chi-

square analysis, Baumert et al. (1986) found that sports participants were significantly less likely than non-participants to report feelings of hopelessness.

Recently, Steiner et al. (2000) conducted a study of the impact of sports participation on adolescent mental health patterns. Steiner et al. (2000) administered the Juvenile Wellness and Health Survey (designed to assess emotional well-being, general physical health, eating and dietary health, and general risk-taking behaviors) to 1,769 high school students. Results indicated that, for adolescent girls, sports participation was positively associated with emotional well-being.

Adolescent women's health-related behaviors. The protective role of sports in the lives of adolescent women also has been explored in terms of adolescent women's health-risk behaviors (e.g., Aaron et al., 1995; Baumert et al., 1998). For example, in the aforementioned study of high school students in Georgia, Baumert et al. (1998) compared health-risk behaviors of adolescent sports participants and non-participants. Results indicated that, compared to adolescent women who did not participate in sports, adolescent women who were involved in sports were less likely to smoke cigarettes or use marijuana (although no differences were found between groups with respect to alcohol). Baumert et al. (1998) also found that adolescent women who participated in sports were more likely to use seat belts when driving or riding in a car compared to adolescent women who did not participate in sports. In addition, adolescent women who participated in sports exhibited more healthy dietary habits than did adolescent women who did not participate in sports; that is, female sports participants were more likely than

female non-participants to eat breakfast on a daily basis, not to add salt to their food, and to consume dairy products, fruits, and vegetables.

In Steiner et al.'s (2000) previously-described study of the impact of sports participation on adolescent health patterns, the authors investigated the association between sports participation and eating/dietary habits and engagement in risky behavior among adolescents. Steiner et al. (2000) found that, compared to adolescent girls who did not participate in sports, adolescent girls who were involved in sports reported lower risk behavior scores and lower eating and dietary problem scores (the latter of which was contrary to the authors' expectations).

In a three-year prospective study, Aaron et al. (1995) investigated the association between participation in sports activities and the initiation of health-risk behaviors among 1,245 adolescents aged 12 to 16 years old. Aaron et al. (1995) found that adolescent girls who participated in sports activities were less than half as likely to initiate cigarette smoking compared to adolescent girls who did not participate in sports activities. Consistent with Baumert et al.'s (1998) findings described above, no differences were found between groups with respect to alcohol consumption.

Because Aaron et al.'s (1995) study was longitudinal and prospective in nature, the temporal ordering of variables could be determined; that is, because the initiation of smoking could be monitored over time, the authors were able to determine when smoking behavior was initiated (and therefore, determine whether adolescent girls' sports involvement preceded girls' initiation of smoking). Based on Aaron et al.'s (1995) findings, one can conclude with some confidence (excluding third variable explanations;

e.g., a general tendency toward health-consciousness might account both for participation in sports as well as non-initiation of smoking), that sports participation acts as a deterrent against the initiation of smoking among adolescent girls.

Although sports involvement appears to be a protective factor in terms of many health-related behaviors (e.g., smoking, dietary habits, seat belt use), two of the studies reviewed above found no difference between adolescent sports participants and adolescent non-sports participants in their level of alcohol consumption. In fact, a recent study indicates that involvement in sports may be a risk condition for engagement in alcohol use among adolescent boys and girls. In their longitudinal study, Eccles and Barber (1999) explored potential benefits and risks associated with involvement in team sports and found that involvement in one or more team sports at grade 10 was a risk condition for engagement in alcohol consumption (although not for marijuana or hard drug use). Specifically, among adolescents, being involved in team sports was significantly related to an increase in alcohol consumption over the high school years (grades 10 through 12), after controlling for mother's education, student gender, and intellectual aptitude. Thus, based on the existing studies, among adolescents, sports involvement appears to be either a risk condition for alcohol use (see Eccles & Barber, 1999) or at least not a deterrent against alcohol use (see Aaron et al., 1995; Baumert et al., 1998).

Adolescent women's sexual behavior and sexual/reproductive health. Recently, researchers have begun to explore the proposition that sports involvement is linked to reduced sexual risk-taking behavior and enhanced sexual/reproductive health among

adolescent women. Indeed, a number of research efforts indicate that, compared to adolescent women who do not engage in sports, adolescent women who are or have been involved in one or more sports engage in sexual intercourse less frequently, have fewer sexual intercourse partners, experience first sexual intercourse later, and report lower rates of pregnancy (e.g., Miller et al., 1998; Rome et al., 1998; Sabo et al., 1999; Zill, Nord, & Loomis, 1995). These findings are maintained even when socioeconomic status, age, and ethnicity are held constant and are reviewed in more detail below.

Adolescent Women's Sports Involvement and Adolescent Women's Sexual Behavior and Sexual/Reproductive Health

As indicated above, the positive role of organized sports in the lives of adolescent women extends to adolescent women's sexual behavior and sexual/reproductive health -- the focus of the current study. As mentioned above, research indicates that adolescent women's involvement in one or more organized sports is related to age at first sexual intercourse experience, number of sexual intercourse partners, frequency of sexual intercourse, and rates of pregnancy (e.g., Miller et al., 1998; Rome et al., 1998; Sabo et al., 1999; Zill et al., 1995). Specifically, research indicates that, compared to adolescent women who do not engage in sports, adolescent women who are or have been involved in sports have fewer sexual intercourse partners, have a lower frequency of sexual intercourse, are older age at first sexual intercourse experience, and report lower rates of pregnancy (e.g., Miller et al., 1998; Rome et al., 1998; Sabo et al., 1999).

In a recent study, Miller et al. (1998) explored sports involvement and sexual behavior among 699 Western New York adolescent females and males. Specifically,

Miller et al. (1998) investigated the association between adolescents sports participation and adolescent sexual activity, including: (a) overall number of sexual intercourse partners, (b) frequency of sexual intercourse over one's lifetime, (c) frequency of sexual intercourse during the past year, and (d) age at first sexual intercourse experience.

Findings from Miller et al.'s (1998) study indicate that sports involvement has a unique and gender-specific effect on adolescent sexual behavior. Miller et al. (1998) found that even after accounting for the effects of race, age, family income, family cohesion, and involvement in other extracurricular activities, sports participation for adolescent women was significantly and robustly associated with lower frequency of sexual intercourse, fewer sexual partners, and higher age at first sexual intercourse experience. Interestingly, for male adolescents, the effects were very slight and in the opposite direction (all associations were non-significant, with the exception of one trend-level association – the association between sports participation and overall number of sexual partners).

In a study of adolescent women's sports involvement and rates of sexual involvement and pregnancy, Sabo, Farrell, Melnick, and Barnes (1996) analyzed data from the same sample of adolescents from western New York, an area with one of the highest rates of adolescent pregnancy in the United States. Two key findings emerged based upon analysis of variance and crosstabular analyses. First, females who participated in sports reported significantly lower rates of sexual intercourse during the past year. Second, whereas 9.8% of the females who participated in sports indicated that they had ever been pregnant, 17.7% of their non-athlete counterparts reported that they had ever been pregnant.

In a highly publicized study regarding sports participation and pregnancy rates and sexual behavior among adolescent females – The 1998 Women's Sports Foundation Report: Sport and Teen Pregnancy, data from the 1995 Youth Risk Behavior Survey of the Center for Disease Control and Prevention (comprised of a nationally representative sample of 11,000 students in grades 9 through 12) were presented. The key findings from this study include the following: (a) female athletes were less than half as likely to get pregnant as female non-athletes (5% and 11% respectively); (b) female athletes were significantly more likely than non-athletes to report never having had sexual intercourse (54% versus 41%); and (c) compared to female non-athletes, female athletes reported a later age of first sexual intercourse experience (notably, female non-athletes were two times as likely as female athletes to experience their first sexual intercourse experience between the ages of 10 and 13).

In a more recent study, Sabo et al. (1999) investigated the association between high school sports participation and adolescent sexual behavior and pregnancy in a longitudinal study of adolescents aged 13 to 16 years old. Using path analysis (in a separate model for boys and girls), Sabo et al. (1999) assessed the direct and indirect effects of participation in sports on frequency of sexual intercourse and involvement with a pregnancy. In both models, race, age, family income, and family cohesion were controlled (in part because of the process of selection into athletics). For adolescent women, high school sports participation was directly related to reduced frequency of sexual behavior and indirectly to pregnancy risk, via sexual behavior; that is, female athletes engaged in sexual intercourse less frequently, which in turn, lowered pregnancy

risk. Sabo et al. (1999) also found that, compared to adolescent males who did not participate in sports, adolescent males who did participate in sports did not exhibit lower rates of sexual behavior and involvement with pregnancy. Hence, Sabo et al.'s (1999) study provides further evidence that adolescent sports involvement has a gender-specific effect on adolescent sexual behavior.

Sabo et al.'s (1999) findings are consistent with other recent studies of sports participation and adolescent sexual behavior and pregnancy risk. For example, in a study which utilized data from the National Educational Longitudinal Study (NELS), Zill et al. (1995) assessed the effects of participation in extracurricular after-school activities on risky adolescent behavior, including having a baby while still a teenager. These self-report, longitudinal data were collected from students in the 10th (1990) and 12th (1992) grades. Participation in extracurricular activities (i.e., interscholastic sports, school band, orchestra, chorus, school plays) was determined in the students' sophomore year (1990). With respect to interscholastic sports (i.e., varsity, junior varsity, and freshman level sports), female athletes were 33% less likely to become teen mothers by their senior year than were female non-athletes. Interestingly, findings for male athletes were in the opposite direction. Specifically, male athletes were 38% more likely to report being fathers than male non-athletes by 10th grade.

In a notable study of factors associated with pregnancy among sexually active adolescent girls in Ohio, Rome et al. (1998) investigated whether pregnancy rates were associated with sports participation. An analysis of the 1993 Ohio Youth Risk Behavior Survey data from 2,461 high school students revealed that among sexually active girls,

those who did participate in sports had lower pregnancy rates than did their counterparts who did not participate in sports (these results were maintained after adjusting for race and age; Rome et al., 1998). Because Rome et al.'s (1998) sample was restricted to adolescent girls who were sexually active, abstinence among female sports participants cannot account for the finding of lower pregnancy rates among adolescent female sports participants. Instead, two possible explanations for Rome et al.'s findings include the following: (a) the adolescent girls who participated in sports may have engaged in sexual intercourse less frequently than did their non-sport counterparts; and/or (b) the adolescent girls who participated in sports may have been more safe during their sexual encounters (e.g., they may have engaged in protected sex) compared to girls who did not participate in sports).

Savage and Holcolmb (1999) extended previous studies of adolescent females' sports involvement and sexuality by exploring not only adolescent women's sexual behavior, but also adolescent women's sexual health. Specifically, using data from the Centers for Disease Control and Prevention (CDC) 1993 Youth Risk Behavior Surveillance (YRBS), Savage and Holcomb (1999) compared female adolescents who participated in sports and those who did not participate in sports, with regard to eight items related to sexual behavior (i.e., engagement in sexual intercourse, age of first sexual intercourse experience, number of lifetime sexual partners, current sexual activity, condom use, use of birth control pills, sexually transmitted disease contraction, and incidence of alcohol or drug use prior to last sexual activity). Chi square analysis indicated that, compared to adolescent female sports non-participants, adolescent female

sports participants engaged in intercourse less frequently, experienced sexual intercourse later, had fewer sexual intercourse partners, were more likely to use condoms during sexual intercourse, and contracted fewer sexually transmitted diseases. Thus, based on Savage and Holcolmb's (1999) results, it appears that for adolescent women, engagement in sports may be protective not only in terms of sexual behavior, but also in terms of sexual health (i.e., lower rates of sexually transmitted disease contraction).

In summary, based on the above literature, it appears that, compared to adolescent women who are not (or who have not been) involved in sports, adolescent women who participate (or who have participated) in sports report lower pregnancy rates, engage in sexual intercourse less frequently, have fewer sexual intercourse partners, experience first sexual intercourse later, and report a higher likelihood of using contraception during sexual intercourse (e.g., Miller et al., 1998; Rome et al., 1998; Sabo et al., 1999; Zill et al., 1995). Despite the limitations of the above studies, they provided an empirical foundation upon which clearer understanding of the association between adolescent women's sports participation and adolescent women's sexual behavior and sexual/reproductive health could be explored.

Shortcomings of the Literature

Investigation of processes. Several empirical studies have documented a favorable association between adolescent women's involvement in organized sports and adolescent women's sexual behavior and sexual/reproductive health (e.g., Miller et al., 1998; Rome et al., 1998; Sabo et al., 1999; Zill et al., 1995). However, those studies are limited both methodologically and conceptually. First, although existing studies have

explored the bivariate association between adolescent women's involvement in organized sports and adolescent women's sexual behavior and sexual/reproductive health, possible processes or mechanisms (mediators) in that association have not been investigated; that is, it is unclear as to why this association exists. Indeed, it has been suggested that the link between adolescent women's involvement in organized sports and adolescent women's sexual behavior and sexual/reproductive health is a highly complex and multifactorial phenomenon, with a variety of psychosocial and sociocultural processes at work (Melnick et al., 1999; Sabo et al., 1999). In the current study, three such processes were explored -- (a) enhanced functional body orientation, (b) self-empowerment/efficacy, and (c) sexual reproductive health-related knowledge/motivation via coach. These processes are discussed and described in the context of cultural resource theory (see Miller et al., 1998) later in this chapter.

Measurement of sports involvement. A second limitation of the sports involvement and sexuality literature concerns existing measures of sports involvement. Current measures of sports involvement typically are quite simplistic/uni-dimensional (i.e., participation/no participation; number of sports in which one participates; see for example, Miller et al., 1998; Rome et al., 1998; Sabo et al., 1999; Savage & Holcolmb, 1999). For example, in their studies of adolescent women's sports involvement and adolescent women's sexual risk-taking behavior and reproductive health, Sabo et al. (1999) and Miller et al. (1998) relied on a simple, one-item measure of sports involvement. Specifically, for both studies, respondents were asked if they participated in sports at school. This measure of sports involvement is quite limited and as described

by Sabo et al., “a more sensitive, continuous measure would have been preferred” (1999, p. 215).

In a separate study of adolescent women’s sports involvement and adolescent women’s reproductive health, Rome et al. (1998) utilized a slightly more complex measure of sports involvement (compared to that described above). In their study, Rome et al. (1998) used a continuous measure of sports involvement (rather than a more simplistic dichotomous measure) in which respondents were asked to indicate the number of sports teams in which they participated. Although Rome et al.’s (1998) measure of sports involvement taps the number of sports teams an individual is involved in, it is limited in that it fails to assess any meaning that individuals attach to their involvement in sports (e.g., psychological investment).

Compared to existing simplistic, uni-dimensional measures of sports involvement (which are based on objective measures: e.g., participation/no participation; number of sports in which one participates), more broad, multi-dimensional measures of sports involvement which include both subjective and objective indicators may be more appropriate and meaningful. For example, it may be critical to assess not only the number of sports in which an individual participates or whether an individual participates in sports (objective indicators), but also the amount of psychological energy an individual puts into her/his sports involvement or the importance/significance an individual attaches to her/his sports involvement (subjective indicators).

Indeed, symbolic interaction theory (LaRossa & Reitzes, 1993), which stresses the importance of exploring the meanings an individual attaches to an experience in order to

understand the impact of that experience on the individual, would suggest that adolescent women's subjective view of their sports involvement (e.g., psychological investment in sports involvement) is a more meaningful and critical indicator of sports involvement compared to more objective measures (e.g., number of sports in which an individual participates).

The measure of sports involvement used in the current study [partially based on Ryckman & Hamel's (1992) measure of sports involvement] is multi-dimensional, continuous, and comprised of both subjective and objective indicators. Specifically, to measure adolescent women's sports involvement, each respondent was asked to: (a) list each of the different organized sports (school and club sports) in which she participated during her high school years (grades 9 through 12); (b) indicate on a four-point Likert scale the degree to which she felt invested in each sport (i.e., how much psychological energy she put into each sport and how important/salient each sport was to her); (c) indicate the average number of hours per week in which she participated in each sport (including games/matches, practice, and other sport-related activities); and (d) indicate the number of years (seasons) she participated in each sport.

Measurement of sexual behavior. A third limitation of studies concerning adolescent women's sports involvement and adolescent women's sexual behavior and sexual/reproductive health is that measurement of sexual behavior often is limited. Most empirical research in this field is based on a limited risk perspective of adolescent sexuality -- a perspective which focuses on sexual intercourse only and the negative consequences of engaging in sexual intercourse (e.g., Miller et al., 1998; Rome et al.,

1998; Sabo et al., 1999). For example, in studies of adolescent women's sports involvement and adolescent women's sexuality, questions regarding sexual behavior often tap whether an individual engages in sexual intercourse, number of sexual intercourse partners, and age at first sexual intercourse experience; however, those studies do not include questions about whether an individual is safe when she does engage in sexual intercourse or whether an individual engages in sexual/reproductive health-seeking behaviors (e.g., Miller et al., 1998; Rome et al., 1998; Sabo et al., 1999). By adopting a risk perspective of adolescent sexuality, those researchers have inherently assumed that the best "interventions" for decreasing rates of adolescent pregnancy and sexually transmitted diseases are to decrease rates of sexual intercourse and to promote abstinence.

Hence, most research in the field of adolescent women's sports involvement and adolescent women's sexuality has failed to recognize sexuality as a healthy, normal part of adolescent development (i.e., the health-perspective of adolescent sexuality; Brooks-Gunn & Paikoff, 1993; Haffner, 1998; Tolman, 1999). Acknowledgment of sexuality as a healthy, normal part of adolescent development/identity has been argued to be crucial by several researchers and scholars (e.g., Brooks-Gunn & Paikoff, 1993; Haffner, 1998; Tolman, 1999). Indeed, Haffner (1998), a leading researcher in the field of adolescent sexuality, explains that recognition of adolescents' developing sexuality requires recognition that, during adolescence, sexual self-concept (an individual's evaluation of his/her sexual feelings and actions) emerges; awareness of sexual attractions and interest heighten; feelings of sexual arousal and desire emerge; and sexual experimentation

becomes common. It is important to note that, according to the health perspective of adolescent sexuality, for those teenagers who do engage in sexual intercourse, healthy sexuality includes the practice of safe sex (which refers to the use of practices to avoid pregnancy and/or sexually transmitted diseases, such as use of contraception and engagement in sexual behaviors other than sexual intercourse; Brooks-Gunn & Paikoff, 1993).

Thus, from a health-perspective of adolescent sexuality, it is crucial to explore adolescents' engagement in healthy sexual behaviors (e.g., use of contraception during engagement in sexual intercourse, engagement in low-risk sexual behaviors such as petting), rather than to focus only on intercourse and health risks associated with engagement in intercourse. In addition, a health-perspective of adolescent sexuality would suggest the investigation of behaviors that enhance sexual/reproductive health (i.e., engagement in sexual/reproductive health-seeking behaviors).

The current study was based on a balanced health/risk perspective of adolescent sexuality. Therefore, in addition to questions about sexual intercourse typically used in studies of adolescent women's sports involvement and adolescent women's sexual behavior and sexual/reproductive health (e.g., number of sexual intercourse partners, age at first sexual intercourse experience), the current study included questions about behaviors that decrease sexual health risks and enhance sexual/reproductive health (i.e., frequency of contraceptive use and engagement in sexual/reproductive health-seeking behaviors).

One-time-of-measurement design limitations. Although the above-reviewed empirical studies of adolescent women's sports involvement and adolescent women's physical and emotional health/well-being provide meaningful and compelling findings, the methodological design of those studies presents limitations in terms of the internal validity of those studies. For example, the results of the aforementioned studies should be interpreted with caution because of their one-time-of-measurement design (see for example, Baumert et al., 1998; Jaffee & Manzer, 1992; Miller et al., 1998; Rome et al., 1998; Steiner et al., 2000; see Aaron et al., 1995 for an exception). Specifically, the temporal (and causal) ordering of variables can be questioned because of the lack of temporal separation between measurement of constructs. For example, in Jaffee & Manzer's (1992) previously-described study, because adolescent women's self-esteem and self-confidence were not assessed prior to adolescent women's sports involvement, it is not possible to determine whether adolescent women's sports involvement resulted in high levels of self-esteem and self-confidence or whether adolescent women with high levels of self-esteem and self-confidence self-selected into sports involvement.

The above studies also cannot rule out the possibility of third variable explanations, and therefore, casual conclusions cannot be made. Specifically, co-varying factors (e.g., health-consciousness) may be able to account for both involvement in sports and physical (and perhaps emotional) health/well-being among adolescent female sports participants. For example, in Baumert et al.'s (1998) aforementioned study of adolescent women's sports involvement and health-risk behaviors, although results suggest that sports involvement is linked to low levels of smoking and marijuana use among

adolescent women, one cannot attribute cause to the reported associations. Specifically, it may have been adolescent women's tendency towards health-consciousness that resulted not only in adolescent women's sports involvement, but also in adolescent women's low levels of smoking and marijuana use.

Although the current study did not improve upon the limitations associated with one-time-of-measurement design described above, future research should be aimed at replicating the findings using longitudinal designs and applying longitudinal analyses, such as growth curve modeling (Willette & Sawyer, 1996). The current study did, however, control for one third-variable that existing studies of adolescent women's sports involvement and adolescent women's sexual behavior and sexual/reproductive health have failed to control – adolescent women's sexual orientation.

Some authors have argued that girls and women with lesbian identities have historically gravitated to sports in high numbers (e.g., Cahn, 1994; Nelson, 1991); however, no data on lesbian participation in sports exist. If the proportion of lesbians in organized sports is higher than the proportion of lesbians among sport non-participants, this might account for some of the lower rates of sexual intercourse and pregnancy among adolescent female sports participants. Therefore, in the current study, sexual orientation was controlled (i.e., any questionnaire in which the participant self-identified as bi-sexual or lesbian was excluded from the current study), eliminating sexual orientation as a possible explanation for any association between sports involvement and sexual risk-taking behavior and sexual/reproductive health.

Theoretical Framework

Cultural Resource Theory

Cultural resource theory, recently developed by Miller et al. (1998) provided a theoretical foundation on which to explore the association between adolescents' sports involvement and adolescents' sexual behavior and sexual/reproductive health at the mediational level. Previous research in this field has been limited to the bivariate level, partially due to the lack of an appropriate theoretical basis. Cultural resource theory not only suggests the mediational nature of the above association, it also helps to identify likely mediators in that association.

According to cultural resource theory, adolescent sports involvement is linked to adolescent sexuality via cultural and exchange processes. This theoretical perspective (which focuses exclusively on heterosexual sexuality) recognizes the interaction of gender-specific cultural scripts and bargaining resources in the negotiation of sexual-related outcomes for adolescents. According to Miller et al. (1998), for boys, sports involvement translates into interpersonal bargaining power, including sexual bargaining power. Additionally, for boys, sports involvement is suggested to confirm or even amplify the traditional male cultural script which calls for a sexually aggressive ethic of masculinity. Thus, according to cultural resource theory, for boys, sports involvement is expected to increase levels of sexual activity.

Cultural resource theory suggests that sports involvement also translates into bargaining power for girls. However, for girls, sports involvement is suggested to disconfirm or de-emphasize the traditional female cultural script – a script which

promotes passivity (in the sexual arena and otherwise). According to this theoretical perspective, for girls, sports involvement should result in adherence to a less traditional female cultural script, not only in terms of sexual relations, but also in terms of dating and self-views. This less traditional script calls for high levels of control and self-reliance and low levels of dependence on heterosexual appeal for feelings of self-worth.

According to Miller et al. (1998) and their cultural resource theory, female sports participants are conditioned to view themselves (including their bodies) in a more proactive way and therefore, should be less passive, less subservient, and less emotionally dependent on boys for attention and self-worth. Girls entering the sports arena may even feel empowered by challenging male privilege and chauvinistic beliefs concerning athletic ability (Miller et al., 1998). Consequently, the pursuit of heterosexual appeal and engagement in sexual activity may become less important for female athletes, and thus, are a matter of deliberate choice rather than scripted, passive expectations (Miller et al., 1998). Hence, based on cultural resource theory, by dismissing the culturally-proscribed feminine cultural script (which calls for passivity and reliance on heterosexual appeal for feelings of self-worth), adolescent girls who are involved in sports are expected to engage in behaviors that decrease sexual health risk and enhance sexual/reproductive health (e.g., abstinence, practice of safe sex, engagement in sexual/reproductive health-seeking behaviors).

As indicated above, according to cultural resource theory, adolescent women's sports involvement is not directly related to adolescent women's sexual behavior or sexual/reproductive health. Instead, adolescent women's sports involvement and

adolescent women's sexual behavior or sexual/reproductive health is suggested to be linked via a variety of cultural- and exchange-related processes. Two such mediating processes that emerge from cultural resource theory (which were examined in the current study and are described in detail below) include the following: (a) enhanced functional body orientation, and (b) enhanced self-empowerment/efficacy.

The role of functional body orientation. As described above and as suggested by cultural resource theory, adolescent women who are involved in sports are likely to dismiss the traditional feminine cultural script, and therefore, decrease their dependence on bodily appeal and attention from boys for self-worth. In turn, adolescent women who are involved in sports may be less focused on what their bodies look like (they may be less focused on achieving culturally-proscribed heterosexual appeal) and more focused on what their bodies can do in an athletic sense (i.e., body functionality). Therefore, adolescent women who are involved in sports may be more likely to take care of their bodies (both sexually and reproductively) due to their concern with the functionality of their bodies for the sake of their sports performance.

The role of self-empowerment/efficacy. In addition, as suggested by cultural resource theory, adolescent women who play sports may gain a sense of empowerment or efficacy from their sports experiences – experiences which likely encourage adolescent women to see themselves as competent and in control of their lives; and provide adolescent women with the opportunity to practice setting and achieving goals, and feeling comfortable being assertive and proactive. This empowerment may extend to other areas of their lives, including their sexual lives. In particular, a sense of

empowerment in the sexual arena among adolescent women (which is suggested to be gained from adolescent women's sports involvement) should translate into assertive sexuality-related behaviors that decrease sexual health risks and/or enhance sexual/reproductive health (e.g., saying "no" to unwanted sexual activity, negotiating the use of contraception, engaging in sexual/reproductive health-seeking behaviors).

Potential Mediators in the Association between Sports Involvement and Adolescent Women's Sexual Behavior and Sexual/Reproductive Health

Functional Body Orientation

As suggested above, one mediating factor which might help to explain the link between adolescent women's involvement in organized sports and adolescent women's sexual behavior and sexual/reproductive health is adolescent women's perceptions about their bodies (see Figure 1). Indeed, existing research and scholarship suggest that girls who participate in sports, compared to those who do not participate in sports, are likely to focus more on what their bodies can do athletically and perhaps less on what their bodies look like (Basow & Rubin, 1998, Pipher, 1994; Zimmerman & Reavill, 1998). In other words, it appears that girls who participate in sports view their bodies as functional, rather than as simply decorative (notably, one purpose of focusing on the decorativeness of one's body is to gain heterosexual appeal). A functional orientation towards the body is likely to result in girls' efforts to maintain the health of their bodies in order to maintain/improve their athletic performance. In turn, girls with a functional body orientation may be likely to avoid health-compromising behaviors and instead, engage in

Figure 1. A Model of the Mediating Role of Functional Body Orientation in the Association between Sports Involvement and Adolescent Women's Sexual Behavior and Sexual/Reproductive Health.

health-enhancing/maintenance behaviors (e.g., use of contraception during sexual intercourse, engagement in low-risk sexual behaviors, abstinence, engagement in health-seeking behaviors).

As suggested above, sports may provide adolescent girls with a buffer against negative feelings toward their body shape -- encouraging girls to appreciate their bodies primarily for what they can do athletically (for their functionality), rather than for what they look like (Basow & Rubin, 1998). Indeed, research suggests that girls who engage in organized sports have more positive self-concepts concerning their physical self-image and more positive body image, compared to girls who do not engage in sports (Jaffee & Lutter, 1985; Miller & Levy, 1996). Sports that focus on performance only rather than those that focus on both performance and appearance (e.g., gymnastics, ice-skating, dance -- sports which have been shown to be associated with high rates of eating disorders and distorted body image; e.g., Brooks-Gunn et al., 1984; Stice, 1994), may promote a model of a strong, competent girl who values herself for her abilities (Zimmerman & Reavill, 1998).

Interestingly, in a study of factors influencing body image among adolescent girls, Jaffee and Lutter (1995) found that number of school sports involved in, but not level of participation in physical exercise (number of days per week engaged in non-sport related exercise) was related to positive body image, such that body image became increasingly positive with an increase in number of team sports involved in. In fact, girls with low or negative body image (compared to those who had positive body image) were most likely to engage in physical exercise seven days a week. Thus, it appears that girls'

involvement in sports may play a unique and positive role in determining girls' perceptions about their bodies.

In Jaffee and Lutter's study, it is possible that the adolescent girls who were involved in sports had a positive body image because they viewed their bodies in a functional way; girls who are engaged in sports are required to use their bodies for athletic performance and therefore, must consider their bodies in terms of their functionality. However, adolescent girls who exercised, but who were not involved in sports, may not have considered their bodies in terms of functionality. Instead, it is likely that those girls who exercised only engaged in physical activity for the purpose of increasing the decorative appeal of their bodies. In other words, those girls who exercised but did not play sports may have done so with the ultimate goal of improving their appearance and achieving a slim body shape – one that is culturally proscribed and not necessarily attainable (see Plaisted, 1995). Interestingly, Jaffee and Lutter (1995) also found that girls who had a negative body image, compared to those who had a positive body image, not only were more likely to exercise seven days a week, but were also more likely to report that having a nice figure and wanting to be attractive to boys were important factors in influencing how they felt about their bodies – factors concerned with decorative appeal of the body.

Qualitative methodology (i.e., interviewing) also has been utilized to explore the impact of sports involvement on young women's views about their bodies. In their study of sports participation and the development of young women's personal empowerment, Blinde, Taub, and Han (1993) interviewed 24 intercollegiate athletes. Blinde et al.'s

results indicated that young women's sports involvement was related to young women's development of bodily competence (the degree to which participants reported having a strong and competent body) – a concept that is similar to the idea of body functionality. Based on their results, Blinde et al. (1993) concluded that young women's participation in sports increased their health-consciousness and enhanced their understanding of how to care for their bodies. This apparently sport-induced health-consciousness was illustrated by one track and field athlete who stated, "If I wasn't involved in sport, I wouldn't care as much about my health." The awareness and appreciation of body-related health concerns among the female sports participants in Blinde et al.'s study is indicative of an orientation towards the body that is more focused on taking care of one's body for the sake of what the body can do, rather than for what the body can look like. Hence, Blinde et al. (1993) provide empirical, if subjective evidence that young women's sports involvement is linked to and indeed positively influences young women's views of their bodies (i.e., functional body orientation).

In summary, it is likely that an adolescent woman who is involved in sports will adopt a functional orientation towards her body. In turn, it is likely that an adolescent woman who has a functional body orientation (an appreciation of her body for what her body can do) will engage in behaviors that protect or enhance her health, including her sexual/reproductive health (e.g., abstain from sexual intercourse, use contraception during sexual intercourse, engage in sexual health-seeking behaviors). Hence, a functional body orientation may act as a mediator in the association between adolescent women's sports involvement and adolescent women's sexual behavior and

sexual/reproductive health; that is, sports involvement may be linked to sexual behavior and sexual/reproductive health via functional body orientation.

Self-Empowerment/Efficacy

Self-empowerment/efficacy is another factor that might help to explain the link between adolescent women's involvement in organized sports and adolescent women's sexual behavior and sexual/reproductive health (see Figure 2). Participation in organized sports has been suggested to be positively related to adolescent women's sense of empowerment/efficacy (Blinde et al., 1993; Cahn, 1994; Sabo et al., 1999).

Empowerment has been defined as, "the process by which women gain more power over their lives...it enables them to resist pressure to adhere to gender-stereotyped notions of what they should and should not do. It also enables them to be more socially assertive... In essence, becoming empowered enables them to become more proactive in terms of what they do with their lives; they become active agents" (Gilroy, 1997, p. 103). Thus, according to the above definition, empowerment involves the dismissal of stereotypical gender roles in favor of a more androgynous, empowered orientation -- an orientation which emphasizes control and efficacy over one's life.

Empirical studies have documented the association between adolescent girls' involvement in sports and adolescent girls' gender role orientation -- one aspect of empowerment/efficacy (e.g., Butcher, 1989; Miller & Levy, 1996). For example, Butcher (1989) found that, compared to adolescent girls who did not participate in sports, adolescent girls who engaged in sports had a more masculine sex role orientation (characterized by high levels of competence and control/efficacy). It is important to note,

Figure 2. A Model of the Mediating Role of Self-Empowerment/Efficacy in the Association between Sports Involvement and Adolescent Women's Sexual Behavior and Sexual/Reproductive Health.

however, that the direction of effect in Butcher et al.'s (1989) study can be questioned; that is, it is unclear as to whether adolescent girls' sports involvement resulted in girls' masculine sex role orientations or whether adolescent girls with masculine sex role orientations self-selected into sports involvement.

In a separate study (described above), Blinde et al. (1993) explored the development of personally empowering skills (e.g., control, competence, and self-determination) among female college athletes. Interview responses revealed that sports participation was related to young women's development of (a) "a competent self" -- an empowering view of self which encourages individuals to see themselves as competent and capable as well as possessing the ability to control events in their lives; and (b) "a proactive approach to life" -- the ability to set goals, establish strategies for achieving those goals, and feel comfortable being assertive. One participant expressed this notion of being in control and having a sense of self-efficacy in her remark, "what it [sport] gives me is self-assurance of my own capabilities, my own self-strength and self-power" (Blinde et al., 1993, p. 53). Thus, based on the young women's subjective reports, it appears that young women's competence and ability to be proactive can indeed be enhanced by their involvement in sports.

As indicated above, through the process of personal empowerment/efficacy, those adolescent women who participate in sports may be in a better position to control their lives, including their sexual experiences (e.g., by enhancing their ability to negotiate the use of contraceptives or to say "no" to unwanted sexual advances; by increasing their comfort in seeking sexual health-related information). Specifically, self-empowerment/

efficacy (i.e., dismissal of traditional gender stereotypes which call for sexual subordination to boys and establishment of feelings of control/self-reliance -- qualities related to sports involvement) may be crucial in determining girls' sexual behavior and sexual/reproductive health. Indeed, research suggests that young people who begin intercourse early tend to believe in traditional gender role stereotypes (Haffner, 1998; Tolman, 1999), and adolescent girls who lack a sense of sexual entitlement and who hold traditional notions of what it means to be female are at particular risk for teenage pregnancy (Fine, 1988).

In their book, "Raising Our Athletic Daughters: How Sports Can Build Self-Esteem and Save Girls' Lives," Zimmerman and Reavill (1998) present their findings from interviews with several adolescent females engaged in organized team sports. The notion of empowerment and its relation to sports involvement was illustrated by one girl who said, "you feel when you start playing that you have this sort of control...you feel, well, hey, if I'm playing good, if I'm practicing, then I can control the rest of my life. I'm the one that's going to have a say in what's going to happen in my life."

Based on the above discussion, it appears that adolescent women's self-empowerment/efficacy may act as a mediator in the association between adolescent women's sports involvement and adolescent women's sexual behavior and sexual/reproductive health; that is, self-empowerment/efficacy may help to explain why the association exists. Specifically, it is likely that young women who are involved in sports will develop relatively high levels of self-empowerment/efficacy (i.e., dismissal of traditional gender stereotypes and establishment of feelings of self-reliance/control). In

turn, self-empowerment/efficacy may be crucial in determining young women's sexual behavior and sexual/reproductive health. That is, girls who have high levels of self-
 efficacy/empowerment may have more control in terms of their sexuality – control that likely manifests in the engagement in behaviors that decrease sexual health risks and enhance sexual/reproductive health (e.g., use of contraception during sexual intercourse, engagement in sexual health-seeking behaviors).

Sexual/Reproductive Health-Related Information/Motivation Via Coach

Although coach-to-adolescent transmission of sexual health-related information/motivation has not been investigated empirically, it has been suggested that coaches (who spend a great deal of time with their team members) may serve as vehicles through which key sexual and reproductive health messages can be transmitted to girls -- messages which might help girls to make healthy sexual choices and avoid pregnancy and sexually transmitted diseases (e.g., Brady, 1998; Melnick et al., 1999). It has been suggested that some coaches serve as informal sex educators, counseling students about issues such as dating and consequences of unprotected sex; and that many coaches are at least somewhat knowledgeable about issues surrounding sexual behavior and teenage pregnancy and sexually transmitted diseases because they have been educated in physical education and/or health science (Melnick et al., 1999). In addition to sexuality-related information, coaches also might provide motivation to their athletes to avoid pregnancy and sexually transmitted diseases. For example, a coach might explain to an athlete that pregnancy would not only impede the team's short-term goals, but would also impede the athlete's long-term goals (e.g., obtaining a college athletic scholarship).

Indeed, existing empirical research indicates that some adolescent females who play on sports teams look to their coaches for advice on both general and personal issues (including sexual issues) and are more likely to do so if their coaches are female (Officer & Rosenfield, 1985). Today, women comprise about 35% of the coaches of high school girls' teams and 48% of the coaches of intercollegiate women's teams (Acosta & Carpenter, 1996; as cited in Melnick, et al., 1999). Thus, many female athletes have access to an adult female (or male) who may be willing to listen to their personal problems or health concerns (including sexual/reproductive health concerns) and offer advice when appropriate. Sexual/reproductive health-related information/motivation via coach may be a third potential mediator in the association between adolescent women's sports involvement and adolescent women's sexual risk-taking behavior and sexual/reproductive health (see Figure 3). However, because the role of sexual/reproductive health-related information/motivation via coach was merely speculative, investigation of such information/motivation was exploratory in the present research.

Figure 3. A Model of the Mediating Role of Sexual/Reproductive Health-Related Information/ Motivation via Coach in the Association between Sports Involvement and Adolescent Women's Sexual Behavior and Sexual/Reproductive Health.

Research Goals and Hypotheses

In light of existing research and the overall purpose of this research project, the quantitative-based goals (G) and hypotheses (H) and qualitative-based goals (G) of the current study included the following:

Goals and Hypotheses Based on Quantitative Data

Bivariate Associations

G1. To determine the strength of the association between adolescent women's sports involvement during the high school years and adolescent women's sexual risk-taking behavior.

H1: There will be a statistically significant negative association between adolescent women's involvement in sports and adolescent women's sexual risk-taking behavior, such that adolescent women who were relatively more involved in sports will be relatively less likely to have engaged in sexual risk-taking behaviors (suggesting that, if they have engaged in sexual intercourse, they will have been older at time of first sexual intercourse, will have had sexual intercourse with fewer partners, will be more likely to have used birth control during sexual intercourse, and will be less likely to have been under the influence of drugs or alcohol during sexual intercourse).

G2. To determine the strength of the association between adolescent women's sports involvement during the high school years and adolescent women's sexual/reproductive health-seeking behavior.

H2: There will be a statistically significant association between adolescent women's involvement in sports and adolescent women's sexual health-seeking behavior, such that adolescent women who were relatively more involved in sports will be more likely to have engaged in sexual health-seeking behaviors (suggesting that, if adolescent women are sexually active, they will be more likely to have discussed using contraceptives, sexual history, and HIV status with their sexual partner(s); to have discussed reproductive or sexual health-related precautions/issues with a doctor or health professional; and to have had a gynecological exam).

G3. To determine the strength of the association between adolescent women's sports involvement during the high school years and adolescent women's sexual/reproductive health.

H3: There will be a statistically significant association between adolescent women's involvement in sports and adolescent women's sexual/reproductive health, such that adolescent women who were relatively more involved in sports will be more likely to exhibit sexual/reproductive health (suggesting that, they will be less likely to have been pregnant or to have contracted a sexually transmitted disease).

Mediator effects

G4. To determine whether each of the aforementioned associations between adolescent women's sports involvement during the high school years and adolescent women's sexual risk-taking behavior, sexual health-seeking behaviors, and sexual/reproductive health (see G1-G3) is mediated by adolescent women's functional body orientation.

H4: Each of the aforementioned associations between adolescent women's sports involvement and adolescent women's sexual risk-taking behavior, sexual health-seeking behaviors, and sexual/reproductive health (see G1-G3) will be mediated by adolescent women's functional body orientation; that is, each of the hypothesized bivariate associations will be reduced to a level of non-significance when the mediator variable (functional body orientation) is introduced into the equation.

G5. To determine whether each of the aforementioned associations between adolescent women's sports involvement during the high school years and adolescent women's sexual risk-taking behavior, sexual health-seeking behaviors, and sexual/reproductive health (see G1-G3) is mediated by adolescent women's self-efficacy/empowerment.

H5: Each of the aforementioned associations between adolescent women's sports involvement and adolescent women's sexual risk-taking behavior, sexual health-seeking behaviors, and sexual/reproductive health (see G1-G3) will be mediated by adolescent women's self-efficacy/empowerment; that is, each of the hypothesized bivariate associations will be reduced to a level of non-significance when the mediator variable (self-efficacy/empowerment) is introduced into the equation.

G6. To determine whether each of the aforementioned associations between adolescent women's sports involvement during the high school years and adolescent women's sexual risk-taking behavior, sexual health-seeking behaviors, and sexual/reproductive health (see G1-G3) is mediated by adolescent women's sexual health-related information/motivation via coach.

H6: Because the role of sexual/reproductive-health-related information/motivation via coach was merely speculative (it has not been empirically explored), investigation of such information/motivation was exploratory in the present research.

Goals Based on Qualitative Data

The purpose of the collection of open-ended (qualitative) data was to describe and contextualize the experiences of the participants (as described below) and thereby, clarify the results from the quantitative data (Miles & Huberman, 1994; Seidman, 1991). Therefore, with respect to the qualitative data, goals (and not hypotheses) are appropriate. The qualitative-based goals of the present study included the following:

G7: To describe the ways in which the adolescent women feel that their sports involvement during their high school years influenced their lives as well as personal gains and losses that resulted from their sports involvement.

G8: To describe adolescent women's reports of the ways in which their involvement in sports during their high school years affected their views/feelings about their bodies.

G9: To describe adolescent women`s experience of sexual/reproductive health-related talks their coaches had with them during their high school years.

CHAPTER 3: METHODOLOGY

Procedure

The principal investigator distributed questionnaire packets in lower division classes at the University of Arizona during Fall, 2000 (permission from instructors of those classes was obtained). In front of those classes, the principal investigator introduced the nature of the research project (see Appendix A for oral recruitment script). Specifically, she informed the students that the project was a questionnaire-based study about young women's sports involvement during the high school years, as well as young women's body orientation, discussions with coaches about sexual/reproductive health-related issues, and sexual risk-taking behavior, sexual/reproductive health, and sexual/reproductive health-seeking behaviors. Students were informed that their participation was strictly voluntary, that they could choose to discontinue their participation at any time, that they could choose not to answer any questions, and that all responses would be confidential (only code numbers, and not names, were attached to questionnaires). The principal investigator also explained that students must be female and between the ages of 18 and 19 years old to participate. Students also were told that, in order to participate in the study, it was not a pre-requisite to have been involved in sports or to have engaged in sexual activity. Additionally, students were informed that stamped, pre-addressed envelopes were included in the questionnaire packets for participants to return their completed questionnaires to our research office at the University of Arizona.

For those 18- and 19-year-old female students who were interested in participating, the principal investigator distributed questionnaire packets (either by passing out questionnaire packets during class or by leaving questionnaire packets with the professor for students to pick up after class). A total of 395 questionnaire packets were distributed in five lower division classes (i.e., Introductory Communications, Family Relationships Across the Life-span, Human Development and Relations, Introduction to Linguistics, and Philosophical Perspectives on the Individual). The principal investigator left her telephone number and email address at the end of each recruitment session so that students who were interested in the project or who had questions could contact her.

To ensure proper mailing of the compensation payment (\$5 for all participants and an additional \$50 gift certificate to the University of Arizona Bookstore for the winner of a drawing), a one-page, participant information form (see Appendix B) was enclosed in the questionnaire packet. This form asked the participant to provide her name and current address. A consent form (see Appendix C) also was included in the questionnaire packet. The consent form explained the purpose of the study, described the potential risks and benefits associated with participating in the current study, and mentioned that participation was strictly voluntary, that participants could choose not to answer any questions, and that participants could choose to discontinue their participation at any time. The consent form also explained that all information would remain confidential, that a code number (and not names) would be attached to the questionnaire covers (see Appendix D) to protect participants' privacy, and that the

principal investigator and her advisor were the only individuals who would have access to the collected data.

A separate postage-paid, pre-addressed envelope was included in the questionnaire packet for return of both the information form and the consent form. A copy of the signed consent form (along with the compensation check) was sent to participants. The fifty dollar gift certificate was sent via mail to the “winning participant” following the drawing (which occurred on November 1 - one day after the deadline to enter the drawing). To protect participants’ privacy, the winner of the gift certificate was not announced publicly. Instead, she was informed via mail upon receipt a notification letter which was accompanied by the gift certificate. The letter and gift certificate indicated that the participant (identified by name) was the winner of the Young Women’s Reflections on Sports Involvement, Self-Perceptions, and Sexuality Project drawing.

Two hundred and one completed questionnaires were returned to the principal investigator, yielding a response rate of 50.9%. Twenty-five of those surveys were excluded from the current study either because the adolescent woman was not in the specified age range ($n = 20$) or because the adolescent woman self-identified as being lesbian or bi-sexual ($n = 5$; as will be described below, the questionnaires in which the adolescent women self-identified as being lesbian or bi-sexual were excluded from the present study as a means to control for adolescent women’s sexual orientation). Thus, the final sample consisted of 176 adolescent women.

Participants

At the time of data collection, the participants ranged in age from 18 through 19 years old ($M = 18.52$, $SD = .50$). With regard to ethnicity, 81.3% ($n = 143$) of the adolescent women were Caucasian/European American, 10.2% ($n = 18$) were Hispanic, 5.1% ($n = 9$) were Asian American, 1.7% ($n = 3$) were Native-American, 1.1% ($n = 2$) were African American, and 0.6% ($n = 1$) reported "other." These percentages are comparable to those of the undergraduate population at the University of Arizona (Decision and Planning Support, 1999), lending support for the representative nature of the sample. At the time of data collection, 29.0% ($n = 51$) of the adolescent women reported that they were "single and not dating," 27.8% ($n = 49$) reported that they were "single and dating casually," 39.8% ($n = 70$) reported that they were "single and dating seriously (dating the same person for more than three months)," 2.8% ($n = 5$) reported that they were "cohabiting," and 0.6% ($n = 1$) reported being "married."

With respect to maternal education level, adolescent women reported that approximately one-fifth ($n = 33$, 18.7%) of their mothers earned a high school degree or less; about one-third ($n = 51$, 29.0%) of their mothers completed some years of college, about one-fourth ($n = 42$, 23.9%) of their mothers earned a four-year college degree; and almost one-third ($n = 50$, 28.4%) of their mothers had completed some education beyond college or had earned a graduate or professional degree. With respect to paternal education level, adolescent women reported that about one-tenth ($n = 20$, 11.3%) of their fathers earned a high school degree or less; approximately one-fourth ($n = 43$, 24.5%) of their fathers completed some years of college, almost one-third ($n = 53$, 30.1%) of their

fathers earned a four-year college degree; and more than one-third ($n = 60$, 34.6%) of their fathers had completed some education beyond college or had earned a graduate or professional degree. About 14% ($n = 24$) of adolescent women reported that they had been eligible for government-subsidized free or reduced lunch at school.

Forced-Choice Self-Report Measures

Sports involvement. The measure of sports involvement (see Appendix E) asked participants to list each of the different organized sports teams on which they participated during their high school years (to tap the number of sports in which they participated) and to rate their degree of psychological investment (on a 4-point Likert scale) in each of the listed sports (based on Ryckman & Hamel, 1992). Participants also were asked to indicate the number of hours per week and number of years (seasons) in which they participated in each sport.

To determine whether the four dimensions of sports involvement -- number of sports in which one was involved, number of hours per week involved in sports, number of years (seasons) involved in sports, and degree of psychological investment in sports -- could be combined to create one composite measure of sports involvement, Pearson correlational analyses were conducted. The magnitudes of the intercorrelations among the four dimensions of sports involvement (which ranged from $r = .57$ to $r = .77$, $p < .001$), suggested that the specific indicators could be combined to form a reliable composite measure of sports involvement. The composite measure of sports involvement was created first by converting manifest scores for each of the four dimensions of sports involvement to standardized Z scores. The four Z scores were then averaged to yield a

composite sports involvement score for each adolescent woman. The composite sports involvement measure was significantly related to each of the four sports involvement dimensions (correlation coefficients ranged from $r = .75$ to $r = .82$, $p < .001$).

Items were be combined to create the composite sports involvement measure so that individuals who scored high on the sports involvement scale had participated in a relatively greater number of sports, had been relatively more invested in sports, had participated in sports for relatively more hours per week, and had participated in relatively more sports seasons (years). For descriptive purposes, participants also were asked to indicate the age at which they began participating in organized sports.

Functional body orientation. Functional body orientation was measured via a scale developed for the current study. Some of the items were based on response choices from the Body-Self Relations Questionnaire (Brown, Cash, & Mikulka, 1990); the Body-Image Questionnaire (Jaffee & Lutter, 1995); and the Self-Image Questionnaire for Young Adolescents (Petersen, 1982); the other items were devised for the current study. Participants indicated, on a 6-point scale, how well each of five statements described them. Example items included, "It is important to me to feel capable/competent about my body" and "How good I feel about my body depends a lot on how well I do in physical activities (e.g., sports)." (See Appendix F.)

For all analyses, responses to the functional body orientation questions were added and averaged. Items were combined so that adolescent women who scored relatively high on the functional body orientation scale were those who were relatively more likely to view their bodies as having a functional purpose (e.g., to do well in

physical activities such as sports). Internal reliability for the functional body orientation scale was good (Cronbach's alpha was .80, $p < .001$).

Self-empowerment/efficacy. Participants were asked to complete four scales: (a) the masculinity dimension of the Bem Sex Role Inventory (Bem, 1974) - which asks participants to rate the degree to which each of 20 masculine personality characteristics (e.g., "dominant," "assertive") describes them; (b) the femininity dimension of the Bem Sex Role Inventory (Bem, 1974) - which asks participants to rate the degree to which each of 20 feminine personality characteristics (e.g., "yielding," "soft spoken"; all items were reverse coded) describes them; (c) the Self-Efficacy Scale (Sherer, Maddux, Mercandante, Prentice-Dunn, Jacobs, & Rogers, 1982) - which asks participants to rate the degree to which they agree with 23 statements about one's belief in the ability to perform behaviors (e.g., "I feel insecure about my ability to do things" – reverse coded); and (d) the Self-Reliance Scale (Greenberger, Josselson, Knerr, & Knerr, 1974) - which asks participants to rate the degree to which they agree with 10 statements about the absence of dependence on others, a sense of control in one's life, and initiative (e.g., "Luck decides most things for me" – reverse coded). (See Appendix G.) Internal reliabilities for the self-empowerment/efficacy scales were good (Cronbach alphas were .81, .73, .87, and .62, respectively).

To determine whether the four aforementioned scales could be combined to create one composite self-empowerment/efficacy score for each adolescent woman, Pearson correlational analyses were conducted. The magnitudes of the intercorrelations among the four self-empowerment/efficacy scales (correlation coefficients ranged from

$r = .50$ to $r = .87$, $p < .001$) suggested the four scales could be combined to form a reliable composite measure of self-empowerment/efficacy. The composite measure of sports involvement was created first by converting manifest scores for each of the four dimensions of self-empowerment/efficacy to standardized Z scores. The four Z scores were then averaged to yield a composite self-empowerment/efficacy score for each adolescent woman. The composite self-empowerment/efficacy measure was significantly related to each of the four self-empowerment/efficacy dimensions (correlation coefficients ranged from $r = .67$ to $r = .91$, $p < .001$).

Items were combined to form the self-empowerment/efficacy composite measure so that individuals who scored relatively high on the self-empowerment/efficacy scale had relatively higher masculine sex role orientations, had relatively lower feminine sex role orientations, were relatively more self-efficacious, and were relatively more self-reliant.

Sexual/reproductive health-related information/motivation via coach. The measure of sexual/reproductive health-related information/motivation via coach was based on Officer and Rosenfeld's (1985) measure of adolescent-coach self-disclosure. The measure used for the current study asked participants (i.e., those who were involved in organized sports during the high school years) to indicate the frequency with which their coaches talked to them about a variety of topics. Example items included, "ways to avoid pregnancy/STDs" and "sleep habits." (See Appendix H.) For all analyses, responses to the sexual/reproductive health-related information/motivation via coach items (item numbers 3, 6, 8, and 10) were added and averaged. Items were combined so

that a relatively high score reflected a relatively high level of frequency of coach-to-athlete talk across the sexual/reproductive health-related information/motivation via coach items.

Sexual risk-taking behavior. The 8-item measure of sexual risk-taking behavior was based on the Youth Risk Behavior Surveillance (Brener, Collins, Kann, Warren, & Williams, 1995) and the Sexual Behavior/Risk Scale (Rosenthal, Moore, & Flynn, 1991). Only those adolescent women who had ever engaged in sexual intercourse with a male were instructed to respond to the questions concerning sexual risk-taking behavior. Example items included, "How many people have you had intercourse with?" and "Did you drink alcohol or use drugs before you had sexual intercourse the last time?" Items were combined so that adolescent women who (a) were younger at age of first sexual intercourse, (b) had a higher number of sexual intercourse partners, (c) had not consistently used contraception during sexual intercourse, and (d) had been under the influence of drugs or alcohol during sexual intercourse, scored higher on the sexual risk-taking behavior scale. Responses to the sexual risk-taking behavior items were standardized and averaged for all analyses. (See Appendix I, question numbers 8 - 14 and 18.) The intercorrelations among the eight items used in the current study ranged from .47 to .79, $p < .01$.

Sexual/reproductive health-seeking behavior. The 5-item measure of sexual/reproductive health-seeking behavior was based on The Youth Risk Behavior Surveillance (Brener et al., 1995) and the Sexual Behavior/Risk Scale (Rosenthal et al., 1991). Only those adolescent women who had ever engaged in sexual intercourse with a

male were instructed to respond to all five of the sexual/reproductive health-seeking behavior questions. Example items included, “Have you ever discussed reproductive or sexual health-related precautions/issues with a doctor or health professional?” and “Have you discussed the sexual history of your most recent sexual partner with him/her?” Items were combined so that individuals who scored high on the sexual/reproductive health-seeking behavior scale had engaged in relatively more sexual/reproductive health-seeking behaviors [i.e., had discussed using contraceptives, sexual history, and HIV status with sexual partner(s); had discussed reproductive or sexual health-related precautions/issues with a doctor or health professional; and had been to a doctor for a gynecological exam]. Responses to the sexual health-seeking behavior items were standardized and averaged for all analyses. (See Appendix I, question numbers 21 – 25.) The intercorrelations among the five items used in this scale ranged from .41 to .72, $p < .01$.

Sexual/reproductive health. The 2-item measure of sexual/reproductive health was based on The Youth Risk Behavior Surveillance (Brener et al., 1995) and the Sexual Behavior/Risk Scale (Rosenthal et al., 1991). All of the study’s participants were instructed to respond to the questions concerning sexual/reproductive health. Items included “How many times, if ever, have you been pregnant?” and “Have you ever been treated by a doctor for an STD?” Items were combined so that individuals who had never been pregnant or who had never contracted an STD scored relatively higher on the sexual/reproductive health scale and were considered relatively healthy in terms of sexual/reproductive health. Responses to the sexual/reproductive health items were

standardized and averaged for all analyses. (See Appendix I, question numbers 7 and 15.) The correlation coefficient for the two items used in this scale was .51.

Demographic and control variables. Demographic questions (see Appendix J) were used to describe the sample and particular demographic questions (i.e., socioeconomic status and ethnicity) also were used as control variables in statistical analyses. Questions about sexual behavior (those not used in the above scales/measures: see Appendix I, questions number 1-6) were used to describe the sexual experiences of the sample. Questions about sexual orientation (see Appendix I, question numbers 26 and 27) were used to control sexual orientation. Specifically, any survey in which the participant self-identified as bi-sexual or lesbian was excluded from the current study, eliminating sexual orientation as a possible explanation for any association between sports involvement and adolescent women's sexual behavior and sexual/reproductive health.

Qualitative (Open-Ended) Measures

To generate a rich, contextualized portrayal of adolescent women's experience of sports involvement during their high school year, participants were afforded the opportunity to answer open-ended questions in the questionnaire (see Appendix K). The open-ended questionnaire questions were intended to uncover: (a) the adolescent women's perceptions of the ways in which sports involvement during their high school years influenced their lives as well as personal gains and losses that derived from their involvement in sports; (b) the adolescent women's perceptions of the ways in which their sports involvement during their high school years affected their views/feelings about their

bodies; and (c) the adolescent women's experience of sexual/reproductive health-related talks their coaches had with them during their high school years.

The contextualized, personal perspective obtained via open-ended questionnaire questions would not have been revealed via the study's forced-choice questionnaire questions. By collecting written open-ended responses in a study that relied largely on data from researcher-driven, forced-choice scales, we adopted a social science position in which qualitative and quantitative approaches are viewed as a valuable "interactive continuum" rather than as incompatible methodologies (Newman & Benz, 1998). Use of qualitative methodology departs from a design that relies on quantitative methods by creating an opportunity for participants to put into words and name their experiences (Brown & Gilligan, 1992; Seidman, 1991).

CHAPTER 4: RESULTS

Overview

In the current chapter, the quantitative- and qualitative-based results are presented in six sections. The quantitative-based results are presented in the first three sections. The first section presents results from descriptive analyses for all variables. The second section presents results from the analyses that tested the hypothesized bivariate associations between: (a) adolescent women's sports involvement and sexual risk-taking behavior; (b) adolescent women's sports involvement and sexual/reproductive health-seeking behavior; and (c) adolescent women's sports involvement and sexual/reproductive health. The third section describes analyses (mediational and indirect effect analyses) that explored three potential mediators in the above bivariate associations -- (a) functional body orientation; (b) self-empowerment/efficacy, and (c) sexual/reproductive health-related information/motivation via coach.

The qualitative-based results are presented in sections four through six. The fourth section presents results from the analyses that explored the ways in which the adolescent women felt that their sports involvement during their high school years influenced their lives as well as personal gains and losses that resulted from their sports involvement. Section five presents results from the analyses that explored the adolescent women's reports of the ways in which their sports involvement during their high school years affected their views/feelings about their bodies. The last section presents results from analyses conducted to explore adolescent women's experience of sexual/

reproductive health-related talks their coaches had with them during their high school years.

Quantitative-Based Results

Descriptive Statistics – Predictor Variable

Sports involvement. Table 1 illustrates the means and standard deviations for the composite predictor variable -- sports involvement during the high school years, and the four specific dimensions of sports involvement -- number of sports in which one was involved during the high school years, average number of years (seasons) involved in sports during the high school years, average number of hours per week involved in sports during the high school years, and average degree of psychological investment in sports during the high school years. In Table 1, the numbers presented inside parentheses are results from descriptive analyses based on responses only from those adolescent women who participated in sports during their high school years.

Extent of sports involvement. Descriptive analyses revealed that the majority of the adolescent women in the current study participated in sports during their high school years (grades 9 through 12). Specifically, of the 176 adolescent women who participated in the present study, 123 (69.9%) participated in at least one sport during their high school years. Of those adolescent women who participated in sports during their high school years, approximately one-third ($\underline{n} = 42$, 34.1%) participated in one sport, about one-third ($\underline{n} = 39$, 31.7%) participated in two sports, about one-fourth ($\underline{n} = 32$, 26.0%) participated in three sports, and almost one-tenth ($\underline{n} = 10$, 8.1%) participated in four or more sports.

Table 1

Means and Standard Deviations of the Composite Sports Involvement Measure (the Predictor Variable) and the Four Dimensions of Sports Involvement

Variable	<u>M</u>	<u>SD</u>	Possible Range	<u>N</u>
Sports Involvement ^a	.00 (.25)	.89 (.87)	-1.26 – 1.34 (-.42 – 1.34)	176 (123)
Number of Sports	1.47 (2.11)	1.30 (1.03)	0 – 6 (1 – 6)	176 (123)
Number of Years	1.97 (2.85)	1.54 (.97)	0 – 4 (1 – 4)	173 (120)
Number of Hours/Week	9.15 (13.12)	6.44 (5.21)	0 – 29 (2.5 – 29)	176 (123)
Degree of Investment	2.19 (3.14)	1.58 (.76)	0 – 4 (1 – 4)	176 (123)

^a Composite measure based on averaged Z-scores across all four sports involvement dimensions.

Note: Numbers in parentheses represent results of analyses based on responses only from sports participants.

With respect to the average number of years in which the adolescent women participated in sports, results revealed that, of those adolescent women who participated in sports during their high school years, the majority ($n = 106$; 88.6%) played on sports teams for at least two seasons (years) during their high school years. Specifically, about 45% ($n = 56$) of the adolescent women who participated in sports, did so for an average of two to three years, and 38% ($n = 47$) of adolescent women who participated in sports, did so for an average of three to four years.

As shown in Table 1, results revealed that, among the adolescent women who participated in sports during their high school years, the average number of hours per week devoted to sports was 13 (range: 2.5 - 29.0). Of those adolescent women who participated in sports during their high school years, approximately 50% ($n = 64$) participated in sports for an average of ten to fifteen hours per week; about 25% ($n = 32$) participated in sports, on average, more than fifteen hours per week; and approximately 20% ($n = 27$) participated in sports, on average, less than ten hours per week.

With respect to average degree of psychological investment in sports, of those adolescent women who participated in sports during their high school years, about 45% ($n = 55$) reported that they were invested “quite a bit” in sports; about 30% ($n = 37$) reported that they were “extremely” invested in sports; approximately 20% ($n = 25$) reported being “moderately” invested in sports, and only 5% ($n = 6$) reported that their average level of investment in sports was “a little.”

Age of initial sports participation. For descriptive purposes, the adolescent women who participated in sports during their high school years were asked to indicate the age at which they first participated in sports (and to consider only those sports in which they participated during their high school years). Descriptive analyses revealed that, among those adolescent women who participated in sports during their high school years, the average age at which the adolescent women first participated in sports was 11 years old ($SD = 3.51$, range: 3 - 17 years old).

Descriptives – Mediator Variables

Table 2 illustrates the means and standard deviations for (a) the three presumed mediator variables – functional body orientation, self-empowerment/efficacy, and sexual/reproductive health-related information/motivation via coach; and (b) the three outcome variables -- sexual risk-taking behavior, sexual/reproductive health-seeking behavior, and sexual/reproductive health.

Functional body orientation. As shown in Table 2, descriptive analyses revealed a moderate amount of variability among the adolescent women on the measure of functional body orientation ($SD = .96$). On a scale from 1 = “strongly disagree” to 6 = “strongly agree,” the average functional body orientation score (across five items) was 4.12; that is, on average, the adolescent women in the current sample “slightly agreed” with the view that their bodies have a functional purpose (e.g., to do well in sports, physical activities such as sports; to achieve physical goals).

Self-empowerment/efficacy. Self-empowerment/efficacy was measured in terms of (a) masculine sex role orientation, (b) feminine sex role orientation, (c) self-reliance,

Table 2

Means and Standard Deviations of the Mediator and Outcome Variables

Variable	<u>M</u>	<u>SD</u>	Possible Range	<u>N</u>
Mediator Variables				
Functional Body Orientation	4.12	.96	1 – 6	176
Self-Empowerment/Efficacy ^a	.00	.61	-1.75 – 1.57	176
Masculinity	2.48	.60	0 – 4	176
Femininity	2.66	.52	0 – 4	176
Self-Reliance	3.43	.54	1 – 4	176
Self-Efficacy	3.19	.52	1 – 4	176
Sexual/Reproductive Health-Related Information/Motivation via Coach ^b	.14	.36	0 – 3	123
Outcome Variables				
Sexual Risk-Taking Behavior ^c	.00	.87	-.58 – 1.19	109
Sexual/Reproductive Health-Seeking Behavior ^c	.00	.73	-.28 – 1.29	108
Sexual/Reproductive Health	.00	.61	-1.74 – 1.57	176

^a Composite measure based on averaged Z-scores across all four self-empowerment/efficacy dimensions.

^b Measure based on reports only from sports participants.

^c Measures based on reports only from sexual intercourse-experienced adolescent women.

and (d) self-efficacy. As illustrated in Table 2, the average masculine sex role orientation score among the adolescent women was 2.48 ($SD = .60$); that is, on a scale from 0 = “does not describe me” to 4 = “is extremely characteristic of me,” the study participants reported that the average degree to which they characterized themselves as being masculine (across twenty masculine personality characteristics) was between “moderate” and “quite a bit.” In terms of feminine sex role orientation, using the same response scale as described above, the average score was 2.66 ($SD = .52$; see Table 2); that is, the study participants reported that the average degree to which they characterized themselves as being feminine (across twenty feminine personality characteristics) was between “moderate” and “quite a bit.” With respect to the measures of self-reliance and self-efficacy, the average scores were moderate-to-high. Specifically, as shown in Table 2, on a scale from 1 = strongly disagree to 4 = strongly agree, the average self-reliance score was 3.43 ($SD = .54$), and the average self-efficacy score was 3.19 ($SD = .52$).

Sexual/reproductive health-related information/motivation via coach. The majority of the adolescent women who participated in sports during their high school years ($n = 97$, 78.9%) reported that their coaches “never” talked to them about any of the sexual/reproductive health-related information/motivation items (i.e., “which sexual behaviors are safe,” “birth control information,” “ways to avoid pregnancy or sexually transmitted diseases,” “negative consequences of sexual activity”). Of those adolescent women who reported that their coaches talked to them at all about any of the sexual/reproductive health-related information/motivation items ($n = 26$, 21.1%), approximately 70% ($n = 18$) reported that, on average, their coaches talked to them about those items

“once in a while;” and about 30% ($n = 8$) reported that, on average, their coaches talked to them about those items either “fairly often” or “very often.”

With respect to the sexual/reproductive health-related information/motivation topic -- “which sexual behaviors are safe,” of the 123 adolescent women who participated in sports during their high school years, 107 (87.0%) reported that their coaches “never” talked to them about this topic, 12 (9.8%) reported that their coaches talked to them about this topic “once in a while,” and 4 (3.2%) reported that their coaches talked to them about this topic either “fairly often” or “very often.” Of those adolescent women who reported that their coaches talked to them at all about “which sexual behaviors are safe,” 75% ($n = 12$) reported that the coach who talked to them the most about that topic was female and 25% ($n = 4$) reported that the coach who talked to them the most about that topic was male.

Of those adolescent women who participated in sports during their high school years ($n = 123$), only 7 (5.7%) reported that their coaches talked to them at all about the sexual/reproductive health-related information/motivation topic, “birth control information.” Specifically, 5 adolescent women (4.1%) reported that their coaches talked to them about this topic “once in a while,” 2 adolescent women (1.6%) reported that their coaches talked to them about this topic “fairly often,” and no adolescent women reported that their coaches talked to them about this topic “very often.” More than 70% ($n = 5$) of those adolescent women who reported that their coaches talked to them about “birth control information” reported that the coach who talked to them the

most about that topic was female and only about 30% ($n = 2$) reported that the coach who talked to them the most about that topic was male.

Only 8.1% ($n = 10$) of those adolescent women who participated in sports during their high school years reported that their coaches talked to them at all about “ways to avoid pregnancy and sexually transmitted diseases.” Specifically, of those adolescent women who reported that their coaches talked to them at all about “ways to avoid pregnancy and STDs” ($n = 10$), 80% ($n = 8$) reported that their coaches talked to them about this topic “once in a while” and only 20% ($n = 2$) reported that their coaches talked to them about this topic either “fairly often” or “very often.” The overwhelming majority (90%, $n = 9$) of adolescent women who reported that their coaches talked to them at all about “ways to avoid pregnancy and sexually transmitted diseases” reported that the coach who talked to them the most about that topic was female.

With respect to the sexual/reproductive health-related information/motivation topic -- “negative consequences of sexual activity,” of those adolescent women who participated in sports during their high school years, 13.8% ($n = 17$) reported that their coaches talked to them at all about this topic. Of those adolescent who reported that their coaches talked to them at all about “negative consequences of sexual activity,” 70.6% ($n = 12$) reported that their coaches talked to them about this topic “once in a while,” 23.5% ($n = 4$) reported that their coaches talked to them about this topic “fairly often,” and only 5.9% ($n = 1$) reported that their coaches talked to them about this topic “very often.” More than three-fourths ($n = 13$) of adolescent women who reported that their coaches talked to them about “negative consequences of sexual activity” reported that the coach

who talked to them the most about that topic was female and about one-fourth ($n = 4$) reported that the coach who talked to them the most about that topic was male.

Descriptives - Outcome Variables

Sexual risk-taking behavior. Only adolescent women who had ever engaged in sexual intercourse with a male responded to the questions concerning sexual risk-taking behavior ($n = 109$). Of those adolescent women who had engaged in sexual intercourse with a male, the average age of first sexual intercourse experience was approximately 16 1/2 years old (range: 13 - 19 years old); the average number of male sexual intercourse partners was between two and three partners (range = 1 - 10 partners); and the average number of male sexual intercourse partners during the three months prior to questionnaire completion was one (range: 0 - 3 partners).

Additionally, of those adolescent women who had engaged in sexual intercourse, 75% ($n = 82$) reported having used some type of birth control the first time they engaged in sexual intercourse, and over 90% ($n = 104$) reported having used some type of birth control the last time they engaged in sexual intercourse. Twenty-five percent ($n = 27$) of the adolescent women who had experienced sexual intercourse reported having used alcohol and/or drugs just prior to the first time they experienced sexual intercourse with a male and similarly, 24% ($n = 26$) of sexual intercourse-experienced adolescent women reported having used alcohol and/or drugs just prior to their most recent sexual intercourse experience. With respect to frequency of condom use, about one-half ($n = 52$) of those adolescent women who had experienced sexual intercourse reported that their partner(s) had used condoms “every time” when they engaged in sexual intercourse

with him/them, about 30% ($n = 33$) reported that their partner(s) had used condoms “most of the time,” 15% ($n = 16$) reported that their partner(s) had used condoms “some of the time” or “half of the time,” and 6% ($n = 9$) reported that their partner(s) had “never” used condoms.

Sexual/reproductive health-seeking behavior. Only those adolescent women who had ever engaged in sexual intercourse with a male responded to all five of the questions that comprised the sexual/reproductive health-seeking behavior scale. Of those adolescent women who had ever engaged in sexual intercourse with a male ($n = 109$), approximately 75% ($n = 85$) reported having had discussed using condoms or other contraception with their most recent sexual partner, about 70% ($n = 77$) reported having had discussed the sexual history of their most recent sexual partner with him, and about 40% ($n = 45$) reported having had discussed the HIV status of their most recent sexual partner with him. More than 85% ($n = 95$) of the sexual intercourse-experienced adolescent women reported having discussed reproductive or sexual health precautions/issues with a doctor or health professional and almost 90% ($n = 97$) of the sexual intercourse-experienced adolescent women reported having had a gynecological exam.

Sexual/reproductive health. All of the study’s participants responded to the questions concerning sexual/reproductive health. Descriptive analyses revealed that, about 10% ($n = 21$) of the adolescent women in the current study reported having been treated by a doctor for a sexually transmitted disease, and approximately 3% ($n = 6$) of the adolescent women in the current study reported having been pregnant at least one time.

Sexual behaviors other than intercourse. For descriptive purposes, the adolescent women were asked to respond to questions regarding their non-intercourse sexual behavior. Descriptive analyses revealed that the overwhelming majority of the adolescent women had engaged in sexual behaviors other than intercourse. Specifically, of the 176 adolescent women who participated in the current study, 172 (97.7%) reported that they had ever kissed someone on the mouth; 167 (94.9%) reported that they had ever open-mouth kissed someone; 158 (89.8%) reported that they had ever fooled around (sexually) above the waist with someone; and 153 (86.9%) reported that they had ever fooled around (sexually) below the waist with someone.

Bivariate Associations

Sports involvement and sexual risk-taking behavior. To test the strength of the association between adolescent women's sports involvement and adolescent women's sexual risk-taking behavior (G1) and to address Hypothesis 1 (H1), which predicted a significant negative association between adolescent women's sports involvement and adolescent women's sexual risk-taking behavior, a regression analysis was conducted. This analysis was conducted only for those women who reported that they had ever engaged in sexual intercourse with a male at the time of questionnaire completion. Because any significant association between adolescent women's sports involvement and adolescent women's sexual risk-taking behavior could be accounted for (at least partially) by one of two third variables – socioeconomic status and ethnicity, those variables were controlled for statistically in the regression analysis.

In the regression analysis, the dependent variable, adolescent women's sexual risk-taking behavior, as well as the two control variables -- socioeconomic status and ethnicity, were regressed on the predictor variable, adolescent women's sports involvement. As shown in Table 3 -- which presents the unstandardized (B) and standardized (β) regression coefficients -- adolescent women's sports involvement was a significant predictor of adolescent women's sexual risk-taking behavior [$t = -.34$, $R^2 = .12$, $F(3,105) = 9.70$, $p < .001$].

The direction of the sign of the regression coefficient was in the predicted direction, indicating a significant negative association between adolescent women's sports involvement and adolescent women's sexual risk-taking behavior, such that adolescent women who were relatively more involved in sports during their high school years were relatively less likely to have engaged in sexual risk-taking behaviors. That result suggests that, among adolescent women who had engaged in sexual intercourse with a male, those who were relatively more involved in sports were older at the time of first sexual intercourse experience, had engaged in sexual intercourse with fewer partners, were more likely to have used birth control at all and more regularly when engaging in sexual intercourse, and were less likely to have been under the influence of drugs or alcohol while engaging in sexual intercourse.

Sports involvement and sexual/reproductive health-seeking behavior. To determine the strength of the association between adolescent women's sports involvement and adolescent women's sexual/reproductive health-seeking behavior (G2) and to address Hypothesis 2 (H2), which predicted a significant positive association

Table 3

Regression Analysis for Sports Involvement Predicting Adolescent Women's Sexual Risk-Taking Behavior, Controlling for Socioeconomic Status and Ethnicity

Variable	<u>B</u>	<u>SE B</u>	β
Sports Involvement	-.13	.04	-.34***
Socioeconomic Status	-.01	.02	-.05
Ethnicity	-.01	.03	-.02

Summary Statistics

Multiple $\underline{R}$ = -.34

$\underline{R}^2$ = .12

Adjusted $\underline{R}^2$ = .09

$F(3,105) = 9.70^{***}$

p<.001

between adolescent women's sports involvement and adolescent women's sexual/reproductive health-seeking behavior, a regression analysis was conducted. That analysis was conducted only for those women who reported that they had ever engaged in sexual intercourse with a male. Because any significant association between adolescent women's sports involvement and adolescent women's sexual/reproductive health-seeking behavior could be accounted for (at least partially) by one of two third variables -- socioeconomic status and ethnicity, those variables were controlled for statistically in the regression analysis.

In the regression analysis, the dependent variable, adolescent women's sexual/reproductive health-seeking behavior, and the two control variables -- socioeconomic status and ethnicity, were regressed on the predictor variable, adolescent women's sports involvement. As illustrated in Table 4, adolescent women's sports involvement was a significant predictor of adolescent women's sexual health-seeking behavior [$r = .24$, $R^2 = .06$, $F(3,104) = 6.60$, $p < .01$]. The direction of the sign of the regression coefficient was in the predicted direction, indicating a significant positive association between adolescent women's sports involvement and adolescent women's sexual/reproductive health-seeking behavior, such that adolescent women who were relatively more involved in sports during their high school years were more likely to have engaged in sexual/reproductive health-seeking behaviors. That result suggests that, among those adolescent women who had engaged in sexual intercourse, those who had been relatively more involved in sports were more likely to have discussed contraception use, sexual history, and HIV status with their male sexual intercourse partners; to have discussed sexual or

Table 4

Regression Analysis for Sports Involvement Predicting Adolescent Women's Sexual/
Reproductive Health-Seeking Behavior, Controlling for Socioeconomic Status and
Ethnicity

Variable	<u>B</u>	<u>SE B</u>	β
Sports Involvement	.11	.05	.24**
Socioeconomic Status	.02	.03	.05
Ethnicity	.03	.05	.05

Summary Statistics

Multiple R = .24

$\underline{R}^2 = .06$

Adjusted $\underline{R}^2 = .05$

$\underline{F}(3,104) = 6.60^{**}$

** p < .01

reproductive health-related precautions/issues with a doctor or health professional; and to have had a gynecological exam.

Sports involvement and sexual/reproductive health. To determine whether the strength of the association between adolescent women's sports involvement and adolescent women's sexual/reproductive health (G3) and to address Hypothesis 3 (H3), which predicted a significant positive association between adolescent women's sports involvement and adolescent women's sexual/reproductive health, a regression analysis was conducted. Because all of the study's participants responded to the sexual/reproductive health questions, the analysis described below was conducted using data from the entire sample. Because any significant association between adolescent women sports involvement and adolescent women's sexual/reproductive health could be accounted for (at least partially) by one of two third variables -- socioeconomic status and ethnicity, those variables were controlled for statistically in the regression analysis.

In the regression analysis, the dependent variable, adolescent women's sexual/reproductive health, as well as the two control variables -- socioeconomic status and ethnicity, were regressed on the predictor variable, adolescent women's sports involvement. As illustrated in Table 5, adolescent women's sports involvement significantly predicted adolescent women's sexual/reproductive health [$r = .21$, $R^2 = .04$, $F(3,173) = 5.22$, $p < .01$]. As predicted, the direction of the sign of the regression coefficient was positive, indicating a significant positive association between adolescent women's sports involvement and adolescent women's sexual/reproductive health, suggesting that the adolescent women who were relatively more involved in sports during

Table 5

Regression Analysis for Sports Involvement Predicting Adolescent Women's Sexual/
Reproductive Health, Controlling for Socioeconomic Status and Ethnicity

Variable	<u>B</u>	<u>SE B</u>	β
Sports Involvement	.10	.04	.21**
Socioeconomic Status	.01	.02	.04
Ethnicity	.03	.02	.07

Summary Statistics

Multiple $\underline{R}$ = .22

$\underline{R}^2$ = .04

Adjusted $\underline{R}^2$ = .04

$F(3,173) = 5.22^{**}$

** $p < .01$

their high school years were more likely to have exhibited sexual/reproductive health (i.e., adolescent women who had been involved in sports during their high school years were less likely to have been pregnant or to have been treated by a doctor for a sexually transmitted disease).

Mediator Effects -- The Mediating Role of Functional Body Orientation

The mediating role of functional body orientation in the association between sports involvement and sexual risk-taking behavior. Part of the fourth goal (G4) of the present study was to assess the potential mediator role of adolescent women's functional body orientation in the association between adolescent women's sports involvement and adolescent women's sexual risk-taking behavior. The corresponding hypothesis (H4) predicted a significant mediating effect for adolescent women's functional body orientation, such that adolescent women's sports involvement would be linked to adolescent women's sexual risk-taking behavior, via adolescent women's functional body orientation. In other words, a relatively higher level of adolescent women's sports involvement was expected to be associated with a relatively higher level of adolescent women's functional body orientation, which in turn would be predictive of relatively lower levels of adolescent women's sexual risk-taking behavior.

Baron and Kenny (1986) have outlined four conditions that must be met in order to determine a mediated association. First, there must be a significant association between the independent variable and the dependent variable. Second, the independent variable must be significantly related to the mediator variable. Third, the mediator variable must be significantly related to the dependent variable. Last, the bivariate

association between the independent variable and the dependent variable must be reduced to a non-significant level when the mediator variable is introduced into the equation.

The suggested method for testing mediation effects involves four separate regression analyses (Baron & Kenny, 1986). In the first equation, the dependent variable is regressed on the independent variable; the second equation regresses the mediator variable on the independent variable; in the third equation, the dependent variable is regressed on the mediator variable; last, the dependent variable is regressed on both the independent variable and the mediator variable.

Following Baron and Kenny's (1986) model, to determine a mediated association between adolescent women's sports involvement to adolescent women's sexual risk-taking behavior via adolescent women's functional body orientation, the following must hold: (1) adolescent women's sports involvement (the independent variable) must be significantly related to adolescent women's sexual risk-taking behavior (the dependent variable); (2) adolescent women's sports involvement must be significantly related to adolescent women's functional body orientation (the presumed mediator variable); (3) adolescent women's functional body orientation must be significantly related to adolescent women's sexual risk-taking behavior; and (4) the association between adolescent women's sports involvement and sexual risk-taking behavior must be reduced to non-significance when adolescent women's functional body orientation is introduced into the equation.

It is important to note that, for all mediational analyses, two possible third variables -- socioeconomic status and ethnicity -- were controlled statistically and they accounted for very little variance. Results from a series of regression analyses (described above) indicated that adolescent women's functional body orientation did not mediate the association between adolescent women's sports involvement and adolescent women's sexual risk-taking behavior. The path estimates for the model are displayed in Figure 4.

Specifically, regression analyses indicated that (1) adolescent women's sports involvement was significantly related to adolescent women's sexual risk-taking behavior [$r = -.34$, $R^2 = .12$, $F(3,105) = 9.70$, $p < .001$]; (2) adolescent women's sports involvement was significantly related to adolescent women's functional body orientation [$r = .58$, $R^2 = .34$, $F(3,106) = 13.39$, $p < .001$]; and (3) adolescent women's functional body orientation was significantly related to adolescent women's sexual risk-taking behavior [$r = -.24$, $R^2 = .06$, $F(3,105) = 4.21$, $p < .05$]. However, the significant association between adolescent women's sports involvement and adolescent women's sexual risk-taking behavior was not reduced to a level of non-significance when adolescent women's functional body orientation (the proposed mediator variable) was entered into the equation ($r = -.28$, $p = .0449$; i.e., the fourth condition of mediation was not met). As will be described in the next chapter, post-hoc analyses (i.e., indirect effect analyses) revealed that adolescent women's functional body orientation was a "trend-level" mediator in the association between adolescent women's sports involvement and adolescent women's sexual risk-taking behavior.

Figure 4. A Model of the Mediating Role of Functional Body Orientation in the Association between Sports Involvement and Adolescent Women's Sexual Risk-Taking Behavior.

Note: Values on paths are path coefficients (standardized regression coefficients).

^a = Path coefficient before the introduction of the mediator variable into the model.

^b = Path coefficient after the introduction of the mediator variable into the model.

*** $p < .001$

* $p < .05$

+ $p = .0449$

The mediating role of functional body orientation in the association between sports involvement and sexual/reproductive health-seeking behavior. Part of goal four (G4) of the current study was to assess the potential mediator role of adolescent women's functional body orientation in the association between adolescent women's sports involvement and adolescent women's sexual/reproductive health-seeking behavior. The corresponding hypothesis (H4) predicted a significant mediating effect for adolescent women's functional body orientation, such that adolescent women's sports involvement would be linked to adolescent women's sexual/reproductive health-seeking behavior, via adolescent women's functional body orientation. In other words, a relatively higher level of adolescent women's sports involvement was expected to be associated with a relatively higher level of adolescent women's functional body orientation, which in turn would be predictive of adolescent women's sexual/reproductive health-seeking behavior.

To test the mediating effect of adolescent women's functional body orientation in the association between adolescent women's sports involvement and adolescent women's sexual/reproductive health-seeking behavior, a series regression analyses (parallel to those described in the previous section) was performed. Results indicated that adolescent women's functional body orientation did mediate the association between adolescent women's sports involvement and adolescent women's sexual/reproductive health-seeking behavior. The path estimates for the model are displayed in Figure 5.

The regression analyses indicated that (1) adolescent women's sports involvement was significantly related to adolescent women's sexual/reproductive health-seeking behavior [$r = .24$, $R^2 = .06$, $F(3,104) = 6.60$, $p < .01$]; (2) adolescent women's sports

Figure 5. A Model of the Mediating Role of Functional Body Orientation in the Association between Sports Involvement and Adolescent Women's Sexual/Reproductive Health-Seeking Behavior.

Note: Values on paths are path coefficients (standardized regression coefficients).

^a = Path coefficient before the introduction of the mediator variable into the model.

^b = Path coefficient after the introduction of the mediator variable into the model.

*** $p < .001$

** $p < .01$

• $p < .05$

involvement was significantly related to adolescent women's functional body orientation [$r = .58$, $R^2 = .34$, $F(3,106) = 21.39$, $p < .001$]; (3) adolescent women's functional body orientation was significantly related to adolescent women's sexual/reproductive health-seeking behavior [$r = .22$, $R^2 = .05$, $F(3,104) = 3.77$, $p < .05$]; and (4) the previously significant association between adolescent women's sports involvement and adolescent women's sexual/reproductive health-seeking behavior ($r = .24$, $p < .01$) was reduced to a level of non-significance ($r = .10$, ns) when adolescent women's functional body orientation (the proposed mediator variable) was entered into the equation.

Test of the indirect effect from sports involvement to sexual/reproductive health-seeking behavior, via functional body orientation. Although the results for the analyses of adolescent women's functional body orientation as a mediator in the association between adolescent women's sports involvement and adolescent women's sexual/reproductive health-seeking behavior supported a mediational model, it has been argued that such analyses require post-hoc probing (Holmbeck, 2000). As described by Holmbeck (2000), basing the conclusion of mediation merely on whether the predictor-outcome effect drops from significance to non-significance (as is outlined in Baron and Kenny's test of mediation) is flawed because a drop from significance to non-significance may occur for example when a regression coefficient drops from .22 to .19, but may not occur when a regression coefficient drops much more dramatically, for example, from .65 to .35. A test of the significance of the drop is clearly needed. Post-hoc probing of a mediated effect (i.e., a test of the indirect effect) provides this test.

The significance of the indirect effect itself from adolescent women's sports involvement to adolescent women's sexual/reproductive health-seeking behavior, via adolescent women's functional body orientation was tested by applying the appropriate formula developed by Sobel (as cited in Baron & Kenny, 1986). That formula provides an approximate significance test for the indirect effect of the independent variable on the dependent variable, via the mediator. In other words, Sobel's formula provides a method for calculating the standard error of the indirect effect (the path from adolescent women's sports involvement to adolescent women's sexual/reproductive health-seeking behavior, via adolescent women's functional body orientation). The standard error then serves as the denominator in the following t ratio:

$$\frac{bc}{\sqrt{c^2S_b^2 + b^2S_c^2 + S_b^2S_c^2}}$$

where the numerator represents the indirect effect between the independent variable and the dependent variable, and where b = the path estimate for the path from the independent variable to the mediator; S_b = the standard error for b ; c = the path estimate for the path from the mediator to the dependent variable; and S_c = the standard error for c . The numerator, therefore, represents the estimated indirect effect between the independent variable and the dependent variable and the denominator represents the standard error of that path. If the magnitude of the t ratio is at least 1.96 (critical value) it indicates a statistically significant ($p < .05$) indirect relationship between the independent variable and the dependent variable.

Applying Sobel's formula to the present data yielded a statistically significant t ratio of 3.86. Based on this result, it was determined that the drop in the magnitude of the path coefficient for the association between adolescent women's sports involvement and adolescent women's sexual/reproductive health-seeking behavior, after adolescent women's functional body orientation (i.e., the mediator variable) was introduced into the model, was statistically significant (providing confirmation for the mediational model).

The mediating role of functional body orientation in the association between sports involvement and sexual/reproductive health. Part of goal four (G4) of the current study was to assess the potential mediator role of adolescent women's functional body orientation in the association between adolescent women's sports involvement and adolescent women's sexual/reproductive health. The corresponding hypothesis (H4) predicted a significant mediating effect for adolescent women's functional body orientation, such that adolescent women's sports involvement would be linked to adolescent women's sexual/reproductive health, via adolescent women's functional body orientation. In other words, a relatively higher level of adolescent women's sports involvement was expected to be associated with a relatively higher level of adolescent women's functional body orientation, which in turn would be predictive of adolescent women's sexual/reproductive health.

To test the mediating effect of functional body orientation in the association between adolescent women's sports involvement and adolescent women's sexual/reproductive health, a series regression analyses (parallel to those described above) was

performed. Results indicated that adolescent women's functional body orientation did mediate the association between adolescent women's sports involvement and adolescent women's sexual/reproductive health. The path estimates for the model are displayed in Figure 6.

The regression analyses indicated that (1) adolescent women's sports involvement was significantly related to adolescent women's sexual/reproductive health [$r = .21$, $R^2 = .04$, $F(3,173) = 5.22$, $p < .01$]; (2) adolescent women's sports involvement was significantly related to adolescent women's functional body orientation [$r = .65$, $R^2 = .44$, $F(3,173) = 21.46$, $p < .001$]; (3) adolescent women's functional body orientation was significantly related to adolescent women's sexual/reproductive health [$r = .18$, $R^2 = .03$, $F(3,173) = 4.34$, $p < .05$]; and (4) the previously significant association between adolescent women's sports involvement and adolescent women's sexual/reproductive health ($r = .21$, $p < .01$) was reduced to a level of non-significance ($r = .13$, ns) when adolescent women's functional body orientation (the proposed mediator variable) was entered into the equation.

Test of the indirect effect from sports involvement to sexual/reproductive health, via functional body orientation. The significance of the indirect effect itself from adolescent women's sports involvement to adolescent women's sexual/reproductive health, via adolescent women's functional body orientation was tested by applying the appropriate formula developed by Sobel (as cited in Baron & Kenny, 1986; see the previous section for a description of the indirect effect analysis as well as an explication as to why this analysis is necessary and of importance).

Figure 6. A Model of the Mediating Role of Functional Body Orientation in the Association between Sports Involvement and Adolescent Women's Sexual/Reproductive Health.

Note: Values on paths are path coefficients (standardized regression coefficients).

^a = Path coefficient before the introduction of the mediator variable into the model.

^b = Path coefficient after the introduction of the mediator variable into the model.

*** $p < .001$

** $p < .01$

• $p < .05$

Applying Sobel's formula to the present data yielded a statistically significant t ratio of 4.14. Based on this result, it was determined that the drop in the magnitude of the path coefficient for the association between adolescent women's sports involvement and adolescent women's sexual/reproductive health, after adolescent women's functional body orientation (i.e., the mediator variable) was introduced into the model, was statistically significant (providing confirmation for the mediational model).

Mediator Effects -- The Mediating Role of Self-Empowerment/Efficacy

The mediating role of self-empowerment/efficacy in the association between sports involvement and sexual risk-taking behavior. Part of goal five (G5) of the current study was to assess the potential mediator role of adolescent women's self-empowerment/efficacy in the association between sports involvement and adolescent women's sexual risk-taking behavior. The corresponding hypothesis (H5) predicted a significant mediating effect for adolescent women's self-empowerment/efficacy, such that adolescent women's sports involvement would be linked to adolescent women's sexual risk-taking behavior, via adolescent women's self-empowerment/efficacy. In other words, a relatively higher level of adolescent women's sports involvement was expected to be associated with a relatively higher level of adolescent women's self-empowerment/efficacy, which in turn would be predictive of lower levels of adolescent women's sexual risk-taking behavior.

To test the mediating effect of self-empowerment/efficacy in the association between adolescent women's sports involvement and adolescent women's sexual risk-taking behavior, a series regression analyses (parallel to those described above) was

performed. Results indicated that adolescent women's self-empowerment/efficacy did mediate the association between adolescent women's sports involvement and adolescent women's sexual risk-taking behavior. The path estimates for the model are displayed in Figure 7.

Regression analyses indicated that (1) adolescent women's sports involvement was significantly related to adolescent women's sexual risk-taking behavior [$r = -.34$, $R^2 = .12$, $F(3,105) = 9.70$, $p < .001$]; (2) adolescent women's sports involvement was significantly related to adolescent women's self-empowerment/efficacy [$r = .59$, $R^2 = .36$, $F(3,106) = 20.14$, $p < .001$]; (3) adolescent women's self-empowerment/efficacy was significantly related to adolescent women's sexual risk-taking behavior [$r = -.34$, $R^2 = .12$, $F(3,105) = 14.71$, $p < .001$]; and (4) the previously significant association between adolescent women's sports involvement and adolescent women's sexual risk-taking behavior ($r = -.34$, $p < .001$) was reduced to a level of non-significance ($r = -.20$, ns) when adolescent women's self-empowerment/efficacy (the proposed mediator variable) was entered into the equation.

Test of the indirect effect from sports involvement to sexual risk-taking behavior, via self-empowerment/efficacy. The significance of the indirect effect itself from adolescent women's sports involvement to adolescent women's sexual risk-taking behavior, via adolescent women's self-empowerment/efficacy was tested by applying the appropriate formula developed by Sobel (as cited in Baron & Kenny, 1986; see the previous section for a description of the indirect effect analysis as well as an explication as to why this analysis is necessary and of importance).

Figure 7. A Model of the Mediating Role of Self-Empowerment/Efficacy in the Association between Sports Involvement and Adolescent Women's Sexual Risk-Taking Behavior.

Note: Values on paths are path coefficients (standardized regression coefficients).

^a = Path coefficient before the introduction of the mediator variable into the model.

^b = Path coefficient after the introduction of the mediator variable into the model.

*** $p < .001$

Applying Sobel's formula to the present data yielded a statistically significant t ratio of 5.57. Based on this result, it was determined that the drop in the magnitude of the path coefficient for the association between adolescent women's sports involvement and adolescent women's sexual risk-taking behavior, after adolescent women's self-empowerment/efficacy (i.e., the mediator variable) was introduced into the model, was statistically significant (providing confirmation for the mediational model).

The mediating role of self-empowerment/efficacy in the association between sports involvement and sexual/reproductive health-seeking behavior. Part of goal five (G5) of the current study was to assess the potential mediator role of adolescent women's self-empowerment/efficacy in the association between adolescent women's sports involvement and adolescent women's sexual/reproductive health-seeking behavior. The corresponding hypothesis (H5) predicted a significant mediating effect for adolescent women's self-empowerment/efficacy, such that adolescent women's sports involvement would be linked to adolescent women's sexual/reproductive health-seeking behavior, via adolescent women's self-empowerment/efficacy. In other words, a relatively higher level of adolescent women's sports involvement was expected to be associated with a relatively higher level of adolescent women's self-empowerment/efficacy, which in turn would be predictive of adolescent women's sexual/reproductive health-seeking behavior.

To test the mediating effect of adolescent women's self-empowerment/efficacy in the association between adolescent women's sports involvement and adolescent women's sexual/reproductive health-seeking behavior, a series of regression analyses (parallel to those described above) was performed. Results indicated that adolescent women's self-

empowerment/efficacy did mediate the association between adolescent women's sports involvement and adolescent women's sexual/reproductive health-seeking behavior. The path estimates for the model are displayed in Figure 8.

Regression analyses indicated that (1) adolescent women's sports involvement was significantly related to adolescent women's sexual/reproductive health-seeking behavior [$r = .24$, $R^2 = .06$, $F(3,104) = 6.60$, $p < .01$]; (2) adolescent women's sports involvement was significantly related to adolescent women's self-empowerment/efficacy [$r = .59$, $R^2 = .36$, $F(3,106) = 20.14$, $p < .001$]; (3) adolescent women's self-empowerment/efficacy was significantly related to adolescent women's sexual/reproductive health-seeking behavior [$r = .20$, $R^2 = .04$, $F(3,104) = 3.59$, $p < .05$]; and (4) the previously significant association between adolescent women's sports involvement and adolescent women's sexual/reproductive health-seeking behavior ($r = .24$, $p < .01$) was reduced to a level of non-significance ($r = .12$, ns) when adolescent women's self-empowerment/efficacy (the proposed mediator variable) was entered into the equation.

Test of the indirect effect from sports involvement to sexual/reproductive health-seeking behavior, via self-empowerment/efficacy. The significance of the indirect effect itself from adolescent women's sports involvement to adolescent women's sexual/reproductive health-seeking behavior, via adolescent women's self-empowerment/efficacy was tested by applying the appropriate formula developed by Sobel (as cited in Baron & Kenny, 1986; see the previous section for a description of the indirect effect analysis as well as an explication as to why this analysis is necessary and of importance).

Figure 8. A Model of the Mediating Role of Self-Empowerment/Efficacy in the Association between Sports Involvement and Adolescent Women's Sexual/Reproductive Health-Seeking Behavior.

Note: Values on paths are path coefficients (standardized regression coefficients).

^a = Path coefficient before the introduction of the mediator variable into the model.

^b = Path coefficient after the introduction of the mediator variable into the model.

*** $p < .001$

** $p < .01$

• $p < .05$

Applying Sobel's formula to the present data yielded a statistically significant t ratio of 2.40. Based on this result, it was determined that the drop in the magnitude of the path coefficient for the association between adolescent women's sports involvement and adolescent women's sexual/reproductive health-seeking behavior, after adolescent women's self-empowerment/efficacy (i.e., the mediator variable) was introduced into the model, was statistically significant (providing confirmation for the mediational model).

The mediating role of self-empowerment/efficacy in the association between sports involvement and sexual/reproductive health. Part of goal five (G5) of the current study was to assess the potential mediator role of adolescent women's self-empowerment/efficacy in the association between adolescent women's sports involvement and adolescent women's sexual/reproductive health. The corresponding hypothesis (H5) predicted a significant mediating effect for adolescent women's self-empowerment/efficacy, such that adolescent women's sports involvement would be linked to adolescent sexual/reproductive health, via adolescent women's self-empowerment/efficacy. In other words, a relatively higher level of adolescent women's sports involvement was expected to be associated with a relatively higher level of adolescent women's self-empowerment/efficacy, which in turn would be predictive of adolescent women's sexual/reproductive health.

To test the mediating effect of adolescent women's self-empowerment/efficacy in the association between adolescent women's sports involvement and adolescent women's sexual/reproductive health, a series regression analyses (parallel to those described above) was performed. Results indicated that adolescent women's self-empowerment/

efficacy did mediate the association between adolescent women's sports involvement and adolescent women's sexual/reproductive health. The path estimates for the model are displayed in Figure 9.

Regression analyses indicated that (1) adolescent women's sports involvement was significantly related to adolescent women's sexual/reproductive health [$r = .21$, $R^2 = .04$, $F(3,173) = 5.22$, $p < .01$]; (2) adolescent women's sports involvement was significantly related to adolescent women's self-empowerment/efficacy [$r = .56$, $R^2 = .32$, $F(3,176) = 20.14$, $p < .001$]; (3) adolescent women's self-empowerment/efficacy was significantly related to adolescent women's sexual/reproductive health [$r = .17$, $R^2 = .03$, $F(3,173) = 3.11$, $p < .05$]; and (4) the previously significant association between adolescent women's sports involvement and adolescent women's sexual/reproductive health ($r = .21$, $p < .01$) was reduced to a level of non-significance ($r = .12$, ns) when adolescent women's self-empowerment/efficacy (the proposed mediator variable) was entered into the equation.

Test of the indirect effect from sports involvement to sexual/reproductive health, via self-empowerment/efficacy. The significance of the indirect effect itself from adolescent women's sports involvement to adolescent women's sexual/reproductive health, via adolescent women's self-empowerment/efficacy was tested by applying the appropriate formula developed by Sobel (as cited in Baron & Kenny, 1986; see the previous section for a description of the indirect effect analysis as well as an explication as to why this analysis is necessary and of importance).

Figure 9. A Model of the Mediating Role of Self-Empowerment/Efficacy in the Association between Sports Involvement and Adolescent Women's Sexual/Reproductive Health.

Note: Values on paths are path coefficients (standardized regression coefficients).

^a = Path coefficient before the introduction of the mediator variable into the model.

^b = Path coefficient after the introduction of the mediator variable into the model.

*** $p < .001$

** $p < .01$

• $p < .05$

Applying Sobel's formula to the present data yielded a statistically significant t ratio of 2.02. Based on this result, it was determined that the drop in the magnitude of the path coefficient for the association between adolescent women's sports involvement and adolescent women's sexual/reproductive health, after adolescent women's self-empowerment/efficacy (i.e., the mediator) was introduced into the model, was statistically significant (providing confirmation for the mediational model).

Mediator Effects -- The Mediating Role of Sexual/Reproductive Health-Related Information/Motivation via Coach

The sixth goal (G6; which was exploratory in nature) of the present study was to assess the potential mediator role of sexual/reproductive health-related information/motivation via coach in the associations between: (a) adolescent women's sports involvement and adolescent women's sexual risk-taking behavior; (b) adolescent women's sports involvement and adolescent women's sexual/reproductive health-seeking behavior; and (c) adolescent women's sports involvement and adolescent women's sexual/reproductive health.

To test the mediating effect of sexual/reproductive health-related information/motivation via coach in each of the above associations, a series of regression analyses (parallel to those described above) was performed. Results indicated that sexual/reproductive health-related information/motivation via coach did not act as a mediator in any of those associations. Regression analyses indicated that adolescent women's sports involvement (the independent variable) was not significantly related to sexual/reproductive health-related information/motivation via coach (the presumed mediator

variable). Because the second condition for mediation was not met (i.e., the independent variable was not related to the mediator variable; Baron & Kenny, 1986), no further analyses were conducted for Goal 6. As will be discussed below, the fact that so few coaches talked to the adolescent women about sexual/reproductive health-related issues likely contributed to the failure to find a mediating effect of sexual/reproductive health-related information/motivation via coach.

Qualitative-Based Results

There were three qualitative-based goals of the current study: Goal 7 -- to describe the ways in which the adolescent women felt that their sports involvement during their high school years had influenced their lives as well as personal gains and losses that resulted from their sports involvement; Goal 8 -- to describe adolescent women's reports of the ways in which their sports involvement during their high school years affected their views/feelings about their bodies; and Goal 9 -- to describe adolescent women's experience of talks their coaches had with them about sexual/reproductive health-related issues during their high school years. To address those goals, the open-ended questionnaire data were analyzed via a form of inductive content analysis -- coding/categorizing.

This qualitative data analytic strategy (i.e., coding/categorizing) is a form of content analysis which involves arranging the data into categories, sorted by broader themes and codes (Miles & Huberman, 1994). Codes, the driving tool of this technique, are tags or labels attached to data chunks of varying sizes (e.g., words, phrases, sentences, whole paragraphs). Codes (pre-determined or emergent from the

data) are attached to the categories and are used to assign meaning to the data. When coding is complete, the analyst has generated a rich, structured set of descriptions and themes. Notably, coding can also help to pinpoint key exemplar quotations used to re-contextualize the codes and illustrate the experiences of individual participants via narrative summaries within and across cases (Hill, Thompson, & Williams, 1997; Morgan, 1993).

In traditional content analysis, and with the emergence of database computer software programs to assist in rapid coding, researchers often rely on de-contextualized, mechanical searches of their data, and use single words (or common phrases) as their coding unit of analysis. In contrast, the present study followed a more qualitative approach to content analysis (Morgan, 1993). Specifically, the principal investigator (a) relied on careful readings of the transcripts; and (b) defined the coding unit of analysis thematically, where long complex sentences may be broken down into shorter or thematic units, or be taken as a whole and in the context of a paragraph.

Written responses to the open-ended questionnaire questions were transcribed verbatim by the principal investigator. To protect confidentiality of participants, code numbers were assigned to each transcription. The principal investigator began data analysis by first reading through all of the transcribed written responses several times. Throughout data analysis, comments that reflected emergent themes were noted in the margins of each transcription sheet. Coding of the qualitative data began with provisional start lists of codes developed prior to data collection. Start lists provide an

initial structure that can derive from a conceptual framework, research questions, or extant empirical data (Miles & Huberman, 1994). The provisional start lists of codes underwent revision during the coding process (Lincoln & Guba, 1985). Revisions consisted of four types: (a) “filling in” – adding codes within pre-defined categories; (b) “extension” – returning to previously-coded transcriptions and refining codes for greater clarity; (c) “bridging” – seeing new or previously misunderstood relationship among units within a coding category; and (d) “surfacing” – identifying new categories. See Tables 6-12 for codes and code descriptions.

There was a primary coder (the principal investigator) and a secondary coder for all qualitative analyses. The primary coder conducted initial careful readings of the data and (a) identified significant statements or units; (b) applied the provisional start list of codes; (c) revised the coding system until it sufficiently and thoroughly captured the range of responses; (d) applied the revised coding scheme to all data; and (e) maintained careful notation/memos.

The secondary coder was essential to documenting reliability. Two forms of reliability were assessed: (a) stability – the degree to which the coding system was invariant over time and (b) reproducibility – the degree to which coding produced the same results when the same set of data was coded independently by more than one coder (Lincoln & Guba, 1985; Weber, 1990). Stability of coding was assessed after the primary coder felt that she had revised the coding system start lists sufficiently and thoroughly enough to capture the range of responses. The primary coder then re-coded twenty percent of the data. The stability of coding was 100%, indicating that the coding scheme

did not require any changes after the coding system start lists had been thoroughly revised by the primary coder. To assess reproducibility of coding, the secondary coder coded twenty percent of the data, using the full list of codes. Reproducibility was calculated by dividing the number of agreements between coders by the total number of ratings. The rate of reproducibility was .93, representing substantial agreement between coders across all coding domains.

To establish credibility or validity, a peer debriefing was used in the current study (Lincoln & Guba, 1985). Peer debriefing is the “process of expressing oneself to a disinterested peer in a manner paralleling an analytic session and for the purpose of exploring aspects of the inquiry that might otherwise remain only implicitly within the inquirer’s mind” (Lincoln & Guba, 1985, p. 308). The purposes of peer debriefing include the following: (a) to keep the inquirer “honest” – the inquirer’s biases are probed, meanings are explored, and the basis for interpretations is clarified; (b) to provide an initial opportunity to test working hypotheses that may be emerging in the inquirer’s mind; and (c) to provide an opportunity to develop and initially test the next steps in the emerging methodological design. In the current study, the inquirer (the principal investigator) repeatedly discussed the results with a doctoral student in Family Studies and Human Development. Those discussions centered on the meanings and interpretations of the data, biases the inquirer brought to the data analysis, and the emerging hypotheses and methodological design. The process of peer debriefing resulted in substantial agreement between the inquirer and the disinterested peer.

Influences of Sports Involvement on the Lives of the Adolescent Women

To address Goal 7 (G7) -- to describe the ways in which the adolescent women felt that their sports involvement during their high school years had influenced their lives as well as personal gains and losses they felt had resulted from their involvement in sports, a content analysis was conducted on adolescent women's responses to the following three open-ended questionnaire questions: (a) "If you participated in sports during your high school years (9th through 12th grades), please describe three ways your sports involvement has influenced your life;" (b) "If you participated in sports during your high school years, please discuss what you personally gained or lost from your sports involvement;" and (c) "If a 14-year-old girl who was about to enter high school as a freshman came to you for advice about whether or not to join/try out for a sports team, what would you tell her and why?"

Content analysis of the adolescent women's written comments suggested the following sports involvement-related outcomes or themes: (a) health benefits/promotion of a healthy lifestyle; (b) enhanced feelings of personal empowerment; (c) development of friendships/close relationships; (d) promotion of responsibility/discipline; (e) stress reduction; (f) development of teamwork skills; (g) increased level of involvement (as a connection to school/community as a way to keep busy); and (h) loss of time (see Table 6 for codes and code descriptions). Both detailed descriptions of the emergent sports involvement-related outcomes/themes and illustrative written responses/comments are presented below. Each of the reported outcomes/themes for Goal 7 was reflected in a majority of the female adolescent sports participants' written responses/comments (see

Table 6

Codes - Influence of Sports Involvement on the Lives of the Adolescent Women

Descriptive Level	Code
Promoted Health/Healthy Lifestyle (71.5%)	INFL-HLTH
Promoted healthy diet	INFL-HLTH-DIET
Promoted physical fitness	INFL-HLTH-FITNES
Promoted health-consciousness	INFL-HLTH-CONSC
Promoted healthy decision-making	INFL-HLTH-DECIS
Promoted Personal Empowerment (82.9%)	INFL-EMP
Promoted feelings of confidence and competency	INFL-EMP-CONFID
Promoted feelings of control and independence	INFL-EMP-CONTRL
Promoted feelings of pride, self-belief, and self-respect	INFL-EMP-PRIDE
Promoted assertiveness, power, and perseverance	INFL-EMP-ASSERT
Promoted leadership skills	INFL-EMP-LEADER
Promoted feelings of enhanced status	INFL-EMP-STATUS
Fostered Friendships/Close Relationships (77.2%)	INFL-FRNDS
Fostered close friendship connections, sense of belonging	INFL-FRNDS-CONN
Source of supportive relationships	INFL-FRNDS-SUPP
Created opportunities to meet/befriend diverse people	INFL-FRNDS-DIVRS
Promoted Discipline/Responsibility (66.7%)	INFL-DISC
Fostered time management skills	INFL-DISC-TIME
Fostered dedication, commitment, work ethic	INFL-DISC-DEDIC

Table 6 - *Continued*Codes - Influence of Sports Involvement on the Lives of the Adolescent Women

Descriptive Level	Code
Source of Stress Reduction (53.7%)	INFL-STRES
Helped to relax and clear mind	INFL-STRES-RELAX
Helped to release stress, anxiety, and frustration	INFL-STRES-RELSE
Fostered Teamwork Skills (58.5%)	INFL-TEAM
Fostered communication skills	INFL-TEAM-COMM
Fostered ability to work well with others	INFL-TEAM-WORK
Promoted feelings of cooperation, sportsmanship	INFL-TEAM-COOP
Increased Level of Involvement (50.4%)	INFL-INVLV
Promoted sense of school/community belonging	INFL-INVLV-BELNG
Helped keep busy/involved (out of trouble)	INFL-INVLV-BUSY
Reduction in Available Time (51.2%)	INFL-TIME
Not enough time for family	INFL-TIME-FAM
Not enough time for friends	INFL-TIME-FRND
Not enough time for school work	INFL-TIME-SCHOOL
Not enough time for other activities	INFL-TIME-ACTIV

Table 6). Those sports involvement-related outcomes that were mentioned by only a few of the adolescent women are not presented below.

Health benefits/healthy lifestyle. One recurring theme that emerged from the written comments of the adolescent women concerned the health benefits of sports participation. As one adolescent wrote, *“There are numerous benefits of being on a sports team - including physical and emotional health benefits. My sports involvement kept me physically fit and it forced me to take good care of myself.”* In response to the question about the influence of sports involvement on their lives, several of the adolescent women mentioned factors related to the establishment of a healthy lifestyle and increased health-consciousness. For example one adolescent woman wrote, *“It [sports involvement] has given me a sense of appreciation and awareness of my health and I started eating better and sleeping more and exercising more regularly.”*

Several of the adolescent women who commented about the health-related benefits of their sports involvement added that such involvement was beneficial not only in the short-term, but in the long-term as well. As one adolescent woman wrote, *“Sports sets one up for a lifetime of fitness and health-consciousness. Swimming and waterpolo taught me how to take care of my body for life and what I need to do to maintain a healthy lifestyle.”* Health-related decision-making was another health-related outcome of sports involvement that was mentioned by many of the adolescent women. For example, in her response to the question about advice she would give to a 14-year-old girl who was deciding whether to get involved in sports, one adolescent woman wrote, *“I would tell her to go for it... It [sports involvement] inspires you to do better in other aspects of your*

life, to take care of yourself and to make healthy decisions.” Sport-derived health-consciousness and healthy decision-making also were illustrated in another adolescent woman’s written response to the open-ended question regarding the things she gained as a result of her sports involvement during her high school years: *“I try to eat healthy and I’m careful not to allow myself to become lazy or to put myself in dangerous situations that could be harmful to my body.”*

Self-empowerment. Another frequently reported outcome of sports involvement that emerged from the adolescent women’s responses to the open-ended questionnaire questions related to the development and enhancement of feelings of personal empowerment via involvement in sports. Content analysis indicated that many of the adolescent women who had participated in sports during their high school years felt that they had acquired feelings of control, power, confidence, and assertiveness as a result of their sports involvement. For example, an adolescent woman who played softball during her high school years expressed such sport-derived empowerment in her comment, *“Softball taught me how to be strong and powerful as a person.”* Another adolescent woman described how her involvement in sports gave her a sense of confidence and more specifically, how it gave her a ‘voice:’ *“With sports involvement, I became a more confident, open, outgoing person. I used to be the shy person who’d hide. Now, I like being heard and seen.”* Feelings of sports involvement-derived competency and independence (both of which are empowering qualities) were expressed by several of the adolescent women in their written responses. For example, in her response to the open-ended question about things she gained from her involvement in sports during her high

school years, one adolescent woman wrote, “*Independence - I felt like I had my own interests and strengths that I didn't need anyone else to fulfill.*”

Several of the adolescent women who participated in sports during their high school years indicated that the sense of empowerment they had gained through their sports involvement extended beyond their sports experiences, to their lives outside of sports. For example, one adolescent woman who played soccer throughout her high school years wrote, “*Through sports, I became more confident in myself and I became more in control of things in my life. I gained the ability to cope with incredibly tough situations on and off the field. I feel like I can handle whatever comes my way.*” The notion of the extension of sport-derived empowerment to aspects of life outside of sports was also expressed in the following written comments of an adolescent woman who played softball during her high school years: “*Because of my involvement in sports, I am more confident and strong-willed. I am not afraid to try new things or say what I think. I feel comfortable to stand up for myself, whatever the situation.*”

A strong sense of self-respect, self-belief, and pride (also characteristics of empowerment) also were reflected in the written comments of several of the adolescent women who participated in sports during their high school years. For example, one adolescent woman who had participated in track for four years during high school wrote, “*Participation [in sports] has helped me grow physically and become stronger mentally. Now, I believe in myself and am not afraid to tackle challenges, whether it be running a far distance or studying to do well in a hard subject.*” Another adolescent woman succinctly expressed her sport-derived sense of empowerment in her comments,

“Through sports, I gained pride and respect for myself as a person.” For one adolescent woman, her sense of self-pride, which she explained resulted from her sports experience, allowed her be comfortable being herself -- *“If anything, I gained respect for myself, the ability to know I didn’t have to pretend to be anything I wasn’t to please others (including boys).”*

Enhanced status and leadership skills (both characteristic of empowerment) were identified by several of the adolescent women as outcomes of their sports involvement during their high school years. Such sport-derived enhanced status and leaderships skills were illustrated in the written comments of one adolescent woman who had played soccer for several years: *“By being on the varsity soccer team (and captain my senior year), many of my peers looked up to me which gave me confidence and pride.”* Another adolescent woman who was not involved in sports during her high school years recognized the high level of status that accompanied sports participation, *“I wished that I played a sport in high school. You are more involved with the school and you are looked up to.”*

Friendships/close relationships. A common theme that emerged from the adolescent women’s written comments was the significance and development of friendships and close relationships acquired through sports involvement. As one adolescent woman who participated in softball and basketball during her high school years wrote, *“Relationships with other girls was strong central to my involvement in sports. Sports participation gave me great opportunities to meet new people and form friendships.”* Of those adolescent women who wrote about the development and

importance of friendships in their sports experiences, many also commented on the supportive nature of those friendships and the sense of connection they gained from those friendships. For example, one adolescent woman wrote, *"Through sports, I was introduced to girls who I now consider my best friends. They have always been there when I needed a shoulder to cry on."* A sense of friendship connection and belonging resulting from sports involvement was illustrated in the comments of one adolescent woman who participated in softball: *"Sports gave me a good core of friends. I had a place to fit into."*

A number of adolescent women indicated that their sports involvement created opportunities to meet girls with personalities different from their own as well as girls from diverse backgrounds -- girls whom they might not have met if it were not for their sports experiences. As one adolescent woman wrote, *"I met my best friend freshman year in Basketball. We probably never would have met otherwise."* Another adolescent woman described her experience of establishing relationships with diverse individuals through her sports involvement: *"I met and became friends with so many different kinds of people with so many different personalities not like mine which now tells me that I can get along with many kinds of people."*

Discipline/responsibility. The notion of enhanced responsibility and discipline through sports participation was common among the adolescent women's written responses to the open-ended questionnaire questions. As one adolescent woman wrote, *"Involvement in sports teaches discipline that can be applied to all aspects of life (sleeping enough, doing homework on time, etc.)."* In their written comments, several of

the adolescent women indicated that, as a result of their sports involvement during their high school years, they became (often out of necessity) more responsible and disciplined with respect to their time management. For example, in response to the open-ended question regarding the influence of sports involvement on one's life, one adolescent woman who had participated in basketball and field hockey for three years wrote, *"Being involved in sports taught me how to manage my time between practices, school work and friends."* Another adolescent woman who played soccer throughout her high school years wrote, *"I found that being involved in sports helped me to manage my time better with so much to do, it is necessary to be on a time schedule."*

Stress reduction. Another recurring theme that emerged from the adolescent women's written comments was that sports involvement during the high school years played an important role in the adolescent women's lives as a stress reducer. Specifically, for many of the adolescent women, their sports participation was cathartic and served as a mechanism through which they were able to release stress, anxiety, and frustration. As one adolescent woman wrote, *"A lot of anxiety and frustration comes from school, I found out on the field I could really let some of it out."* In fact, for many of the adolescent women, sports participation served as a source of relaxation. For example, one adolescent woman wrote, *"Playing sports was one way for me to relax and not worry about the stresses of daily life. Sports allowed me some time of the day to get my mind off of the things that were bothering me."*

Teamwork skills. One outcome of sports involvement that was common among the adolescent women was the development of teamwork skills. Specifically, a number

of the adolescent women indicated that, as a result of their sports involvement during their high school years, they developed the ability to work well with others (including people they did and did not like), and they developed enhanced communication skills. As one adolescent woman wrote, *"I learned team work and how to communicate effectively to different people (including those I didn't like)."* The promotion of teamwork skills via sports involvement was illustrated in one adolescent woman's description of the things she gained from her sports involvement during her high school years: *"Being in sports also helped to teach me how to work well with others in order to reach a common goal. I learned that there is no 'I' in team."* Another example of the promotion of teamwork skills through sports involvement was provided in the written comments of one adolescent woman who played basketball during her high school years. Specifically, in her written comments, she acknowledged her own development of teamwork skills through her sports involvement and expressed the significance of using such skills outside the athletic arena: *"By playing sports, I learned all about teamwork and it helped me get through high school and will continue to help in college."*

Involvement. The notion of increased levels of involvement via sports participation during the high school years was frequently mentioned by the adolescent women in their written comments. The sense of increased involvement was expressed by the adolescent women in two ways: (a) as a sense of increased involvement in and connection to school and community; and (b) as a sense of involvement as a means of keeping busy (and for many, this involvement translated into the avoidance of "trouble;" e.g., engaging in problem/risk behavior). For example, in response to the open-ended

question regarding the influence of sports involvement on one's life, one adolescent woman wrote about how her involvement in sports helped her to avoid trouble: *"Sports helped me keep busy and stay out of trouble. On Friday nights I was usually at home or still at practice, so I didn't have time to get into drugs, etc."*

A sense of increased involvement in and connection to school as a result of sports participation was illustrated in an adolescent woman's written response to the open-ended question regarding advice one would give to a 14-year-old girl who was deciding whether to join/try out for a sports team: *"I would tell her to go ahead and try out for the sports team because it would probably be a great experience for her. Being on a team makes people feel like they are part of something. It's important for freshmen to get involved in high school so they don't feel lost. Even if you join a JV or freshman team that is more recreational, it is still a great place to meet new people and find a place to belong in a new school."* Another adolescent woman expressed how her sports experience resulted in a sense of connection or belonging to school, *"It [sports involvement] made me feel like part of a team and that I belonged in high school more, especially my freshman year. Making varsity soccer was incredible for me that year."*

An increased sense of connection to community as a result of sports involvement was well-reflected in one adolescent woman's written comments about advice she would give to a 14-year-old girl who was deciding whether to get involved in sports, *"I would suggest that it [sports involvement] would be a good idea. Sports help you find your own creative nitch... I think that even if it is not a varsity sport or you are not a starter, sports is a way to be an active member of society."*

Time loss. The only recurring negative outcome of sports involvement during the high school years that emerged from the written comments of the adolescent women was the loss of available time. A number of the adolescent women indicated that, due to their involvement in sports during their high school years, they did not have enough time for other people in their lives (e.g., family, friends) or for other activities (e.g., homework, extracurricular activities). For example, one adolescent woman who played tennis and volleyball during her high school years commented, *“The only thing I would say I lost [from sports involvement] was the time and opportunity to participate in other activities such as musicals or doing more things with people outside of school.”* Another adolescent woman described the influence of her sports involvement during her high school years on her available time, *“It was tiring and often it caused problems by interfering with homework and other commitments.”*

The Influence of Sports Involvement on Adolescent Women’s Views of their Bodies

To address the current study’s eighth goal (G8) -- to describe the adolescent women’s reports of the ways in which their sports involvement during their high school years affected their views/feelings about their bodies, a content analysis was conducted on the adolescent women’s responses to the following question: “Please describe (a) the way you view/feel about your body; and (b) three personal experiences that you think have impacted the way you view/feel about your body.” Because some of the adolescent women’s responses to the previously-described open-ended questionnaire questions (i.e., those questions used to address goal 7) were pertinent to the current goal (G8), those

responses also were included in the current content analysis (i.e., the analysis conducted for goal 8).

Although only approximately twenty percent ($n = 25$) of the adolescent women who participated in sports during their high school years wrote about the influence of their sports experience on their views/feelings about their bodies, several themes did emerge from the comments of those adolescent women who did address this issue (see Table 7 for codes and code descriptions). One body-related outcome of adolescent women's sports-involvement that was apparent in the adolescent women's written comments was the emergence of a functional view of the body.

The comments of one adolescent woman illustrated a functional orientation towards the body and the development of such an orientation via sports involvement: *"I know that my body needs nutrients and I need to eat properly and keep active to stay healthy and function. Participating in tennis since I was 12 taught me the importance of staying healthy so that my body can do what I need it to do on the [tennis] court."*

Another adolescent woman's comments illustrated a sports-related functional body orientation. Specifically, she indicated that her involvement in sports (i.e., track) resulted in her functional orientation towards her body: *"I feel content with my body, there are things I know I can work on but overall, I'm glad I have a body that functions...I can still run a mile in 7:35."* This particular adolescent woman's appreciation for her body's ability to function was expressed further in her written comment, *"I think about people with handicaps and become grateful that I can do the things I want to do (run, hike, dance)."* Notably, although the entire sample responded to the questions about views and

Table 7

Codes - Influence of Sports Involvement on Adolescent Women's Views of their Bodies

Descriptive Level	Code
Promoted functional view of body	INFL-BODY-FX
Promoted appreciation for bodily strength	INFL-BODY-STRNG
Promoted body confidence and mastery	INFL-BODY-CONF
Fostered respect for one's body	INFL-BODY-RSPCT
Increased knowledge about one's body	INFL-BODY-KNOW
Fostered feelings of comfort with and ability to relate to body	INFL-BODY-COMF

feelings about one's body and experiences that influenced those views and feelings, the described functional view of the body was restricted to only those adolescent women who participated in sports during their high school years.

Of those adolescent women who related their sports involvement to their views/feelings about their bodies in their written comments, several indicated that their sports involvement resulted in an increased sense of appreciation for physical/bodily strength. For example, one adolescent woman wrote, *"I view my body as strong, not perfect but healthy."* The same adolescent woman commented that her view about her body (described above) was influenced by her *"participation in sports and other running triathlon races."* Appreciation of a strong body was also illustrated in the following adolescent woman's comments, *"Being on the swim team made me feel proud of my athleticism and my strong body."*

Content analysis of adolescent women's written comments revealed another recurring body-related outcome of sports involvement during the high school years -- adolescent women's ability to feel comfortable with and relate to their bodies. For example, one adolescent woman who played soccer, wrote, *"I feel comfortable about my body."* This adolescent woman further described her sense of bodily comfort and explained how she achieved such comfort via her sports involvement, *"I used to be very skinny and I gained weight during high school. At first I was uncomfortable, but I was healthier and it helped me with sports. As I grew in high school, I noticed I felt a lot stronger in sports. I felt less and it made me feel like I grew into my body and was a lot more solid than I had been before."* Another adolescent woman's comments illustrated

feelings of comfort with one's body as a result of sports participation, *"My sports involvement made me feel comfortable about my body. I play sports because I enjoy it, not because I want to change the way I look."*

Among those women who wrote about the association between their sports involvement and their views/feelings about their bodies, many indicated that their sports involvement during their high school years led to feelings of confidence in and respect for their bodies as well as increased knowledge about their bodies. As one adolescent woman wrote, *"From sports, I've gained a lot of knowledge about who I am and about my body . I can relate to my body better."* Another adolescent woman wrote, *"Through sports [I] gained knowledge of my physical strength and abilities and confidence in myself and in my body (I feel more powerful inside and out)."* A sense of sport-derived body knowledge and mastery was illustrated in one adolescent woman's comments, *"sports participation made me appreciate my body and further understand it... I also learned how to handle injuries, such as stretched muscles, aching joints or muscles, etc."*

Adolescent Women's Experience of Coach Talks Regarding Sexual/Reproductive Health-Related Issues

The ninth goal (G9) of the current study was to describe adolescent women's experience of talks their coaches had with them about sexual/reproductive health-related issues during their high school years (9th through 12th grades). To address that goal (G9), a content analysis of the adolescent women's written responses to the open-ended questionnaire questions regarding sexual/reproductive health-related coach talks was conducted. Specifically, in the questionnaire, the adolescent women who participated in

sports during their high school years were asked to describe the details of sexual/reproductive health-related talks their coaches had with them during their high school years; to discuss their thoughts and feelings about those talks; and to describe characteristics of the coaches involved in those talks. The adolescent women were instructed to write about only those coach talks which concerned the sexual/reproductive health-related issues that they had previously identified (on a checklist on the previous page of the questionnaire -- see Appendix H) as issues their coaches had talked to them about either "fairly often" or "very often."

Due to this instruction, only eight of the adolescent women who participated in sports during their high school years responded to the open-ended questions regarding sexual/reproductive health-related coach talks. Nonetheless, a content analysis of those responses did reveal several themes or commonalities. Those themes are reported below and are described within the following domains: (a) content of sexual/reproductive health-related coach talk; (b) goals of sexual/reproductive health-related coach talk; (c) context of sexual/reproductive health-related coach talk; (d) characteristics of coaches involved in sexual/reproductive health-related coach talk; and (e) adolescent women's reactions to sexual/reproductive health-related coach talk.

Content of sexual/reproductive health-related coach talk. Because the sexual/reproductive health-related coach talk issues were researcher-specified, the adolescent women were limited to writing about only those issues: "which sexual behaviors are safe," "ways to avoid pregnancy and STDs," "negative consequences of sexual activity," and "birth control information." Each of the four researcher-specified sexual/

reproductive health-related coach talk issues (described above) was reflected in the adolescent women's written comments about talks their coaches had with them during their high school years (see Table 8 for codes and code descriptions).

Several content-based themes (that were not researcher-specified) did emerge from the adolescent women's written comments (see Table 8 for codes and code descriptions). For example, some of the sexual/reproductive health-related coach talks were embedded within more general discussions about health or safety. As one adolescent woman wrote, *"We had a little clinic about health and our track coach just stressed about keeping ourselves healthy and sexually safe."*

A number of the adolescent women's descriptions of sexual/reproductive health-related talks their coaches had with them included references the coaches made to their own personal experiences. For example, in her description about talks her coach had with her about the sexual/reproductive health-related topic, "negative consequences of sexual activity," one adolescent woman wrote, *"We talked about this topic in particular alot because my coach had an abortion when she was 16. She was very open about what happened to her and she liked to talk to me and try to make sure that I didn't make the same mistake that she did."* Another woman's description of a talk her coach had with her about the topic, "which sexual behaviors are safe," provided an illustration of a reference made by the coach to her own experiences: *"My female coach talked to me about friends she had in high school and her own reasons for waiting [to engage in sex]."*

Table 8

Codes - Content of Sexual/Reproductive Health-Related Coach Talk

Descriptive Level	Codes
Which sexual behaviors are safe (including none)	CONTENT-SAFE
Ways to avoid pregnancy and sexually transmitted diseases	CONTENT-AVOID
Negative consequences of sexual activity (e.g., pregnancy)	CONTENT-CONSQ
Birth Control Information (e.g., use of birth control pills)	CONTENT-BCNTL
Discussion about General Health/Safety	CONTENT-HLTH
Discussion about Boys and Dating	CONTENT-BOYS
Discussion about Coach's Personal Experiences	CONTENT-COACH
Discussion about Experiences of Adolescents' Peers	CONTENT-PEERS

Another feature of coach-athlete sexual/reproductive health-related talks that emerged from the adolescent women's written comments was the reference by coaches to relevant experiences of the adolescents' peers. As one adolescent woman wrote, *"My female cross-country coach (for two years) would often talk to me and the other girls about this issue [negative consequences of sexual activity] because she wanted us to be safe and she wanted us to understand the consequences of our sexual actions early. She especially commented on the issue when one of our friends became pregnant and had the baby. We talked about her situation and she helped us to understand that pregnancy is one of the negative consequences and can be avoided."*

A few of the reported sexual/reproductive health-related coach talks centered on the topic of boys and dating. For example, when describing a conversation a coach had with her about the sexual/reproductive health-related topic, "which sexual behaviors are safe," one adolescent woman wrote, *"I saw a lot of her [my coach]. She knew about the boys I liked and got with and commented on my acts hoping to better me in my decisions."*

Context of sexual/reproductive health-related coach talk (see Table 9 for codes and code descriptions). With respect to the context of the sexual/reproductive health-related coach talks, a majority of the adolescent women who wrote about such talks reported that those talks occurred in a group or team setting (two of the adolescent women reported that their coaches talked with them on an individual basis). Another contextual feature of a majority of the reported sexual/reproductive health-related coach talks was the apparent casual nature of those talks (e.g., casual discussions during

Table 9

Codes - Context of Sexual/Reproductive Health-Related Coach Talk

Descriptive Level	Codes
Group Talk (Coach-Team)	CONXT-GROUP
Dyadic Level Talk (Coach-Athlete)	CONXT-DYAD
Formal Situation/Discussion	CONXT-FORMAL
Casual Situation/Discussion	CONXT-CASUAL

practices). Only one adolescent woman reported that such coach talk occurred with in the context of a formal health clinic.

Goals of sexual/reproductive health-related coach talk. Based on the analysis of adolescent women's written responses to the open-ended question regarding sexual/reproductive health-related talks their coaches had with them, it was apparent that those talks were goal-driven in nature (see Table 10 for codes and code descriptions). For example, analysis of the adolescent women's comments revealed that one goal of those talks was to promote the health (sexual, reproductive, and otherwise) of the adolescent women for the sake of the adolescent women's well-being. Additionally, some of the coaches appeared to promote the adolescent women's health not just for the sake of the adolescent women's well-being, but for the sake of the adolescent women's athletic performance and for the team's performance. As one adolescent woman wrote, *"Once I had a female coach who very briefly discussed to the entire team that you need to either restrain from sex or use a rubber. She said we needed to stay healthy not just for us but for our team too."* The goal of general health and safety promotion for the sake of athletic performance was illustrated in one adolescent woman's description of a sexual/reproductive health-related talk her coach had with her and her teammates: *"He told the team his personal feelings and said that it was our choice, but that sex alcohol drugs would prevent us from being outstanding athletes."*

The promotion of safe sexual decision-making (including making the decision to abstain from sexual intercourse) was another goal of sexual/reproductive health-related coach talks that was reflected in many of the written comments of the adolescent women

Table 10

Codes - Goals of Sexual/Reproductive Health-Related Coach Talk

Descriptive Level	Codes
To promote general health for sake of the individual	GOAL-HLTH-GEN
To promote sexual/reproductive health	GOAL-HLTH-SEX
To promote health for sake of athletic performance/team	GOAL-ATHL-PERF
To promote safe sexual decision-making/sexual safety	GOAL-SEX-DECIS
To provide sexual/reproductive health information	GOAL-INFO-SEX

who responded to the open-ended questions about such talks. For example, in her description of a talk her coach had with her about the sexual/reproductive health-related topic, “which sexual behaviors are safe,” one adolescent woman wrote, *“She never really said that any were safe and she told me and my teammates the only way to be safe was not to do anything at all.”* Another goal of the reported sexual/reproductive health-related coach talks that emerged from the adolescent women’s written comments was the disbursement of sexual/reproductive health-related information. As one adolescent woman wrote, *“We talked about starting the use of birth control and how it is not just for the prevention of pregnancy. Sometimes, it was just a convenience to know when you are menstruating and to help reduce cramps (which was especially important for softball games!).”*

Characteristics of coaches involved in sexual/reproductive health-related talks with their adolescent female athletes. Analysis of adolescent women’s written descriptions of characteristics of the coaches who talked to them about sexual/reproductive health-related issues revealed several commonalities across those descriptions (see Table 11 for codes and code descriptions). Of those adolescent women who reported that their coaches talked to them about sexual/reproductive health-related issues, many described their coaches (most of whom were female) as being friend-like (e.g., approachable, open, caring, warm, understanding). For example, one adolescent woman wrote, *“It was a lot easier to talk to her [my coach] about my experiences (not just sexual intercourse, but other sex acts) than it was to talk to my mother about them, probably because my parents thought I was this innocent little angel and I didn’t want to*

Table 11

Codes - Characteristics of Coaches Involved in Sexual/Reproductive Health-Related Coach Talk

Descriptive Level	Codes
Gender - Female	COACH-FEM
Gender - Male	COACH-MALE
Friend-Like (open, caring, warm)	COACH-FRIEND
Approachable	COACH-APPRCH
Good Role Model	COACH-ROLE
Knowledgeable	COACH-KNOWL

disappoint them by telling them about the boys I got with. My coach was a friend to me, not a parent so we were very open."

In addition to being friend-like, many of the adolescent women who reported on sexual/reproductive health-related coach talk characterized their coaches who talked to them about sexual/reproductive health-related issues as being knowledgeable and good role models. As one adolescent woman said, *"This coach was a very approachable female role model for me ... she was not afraid to talk to us anytime about anything at all."*

Adolescent women's reactions to sexual/reproductive health-related coach talk.

In general, the adolescent women's reactions to the talks their coaches had with them about sexual reproductive health-related issues were positive (see Table 12 for codes and code descriptions). Many of the women who wrote about such talk reported that, as a result of the talks their coaches had with them about sexual/reproductive health-related issues, they felt an increased awareness about their own sexual behavior as well as an enhanced understanding of the consequences of sexual activity. As one adolescent woman wrote, *"I really took to heart everything that my coach said to me. I became a lot more aware of my actions and the consequences of my action after numerous talks with my coach."*

Several of the adolescent women who wrote about sexual/reproductive health-related coach talks expressed an appreciation for the sexual/reproductive health-related advice and information their coaches provided to them. For example, one adolescent woman wrote, *"I appreciated his advice and followed it - exactly - he's a good role*

Table 12

Codes - Adolescent Women's Reaction to Sexual/Reproductive Health-Related Coach Talk

Descriptive Level	Codes
General positive reaction	REACT-POSITIVE
Increased awareness of own actions	REACT-AWARE
Appreciation of advice and information	REACT-APPREC
Increased comfort surrounding sexuality-related issues	REACT-COMFORT
Increased understanding of consequences of sexual activity	REACT-UNDERST

model still.” Some adolescent women expressed an increase in their comfort surrounding sexual/reproductive health-related issues as a result of the talks their coaches had with them. As one adolescent woman wrote, *“these talks made me feel more comfortable if I had decided to start using the pill.”*

CHAPTER 5: DISCUSSION

Overview

Recently, social science researchers have begun to explore the proposition that sports involvement is linked to decreased sexual risk-taking behavior and enhanced sexual/reproductive health among adolescent women. Indeed, several empirical studies have documented a favorable connection between adolescent women's involvement in organized team sports and adolescent women's sexual behavior and sexual/reproductive health. However, that connection may be neither simple nor direct. In fact, the connection likely is quite complex and multi-factorial, with a variety of psychosocial and sociocultural processes at work. The current study, directed in part by cultural resource theory (which focuses exclusively on heterosexual sexual activity; Miller et al., 1998), attempted to clarify the sports involvement - sexual behavior/health connection by exploring three such explanatory processes. In keeping with cultural resource theory, the present study's focus was on adolescent heterosexual sexual activity, and therefore, the following discussion will focus exclusively on such heterosexual activity.

In light of the extant scholarship and given the high rates of adolescent sexual activity and the related health consequences as well as the changing cultural climate in the United States with respect to females' sports involvement, empirical attention to the understanding of the link between adolescent women's sports involvement and adolescent women's sexual behavior and sexual/reproductive health was warranted. The current study employed quantitative methods to confirm the documented connections between adolescent women's involvement in organized team sports and adolescent

women's sexual risk-taking behavior and sexual/reproductive health, but used more sensitive and appropriate measures than in previous research.

The current study was also unique in that adolescent women's sexual orientation was controlled (i.e., any questionnaire in which the participant self-identified as bi-sexual or lesbian was excluded from the current study), eliminating sexual orientation as a possible explanation for the reported sports involvement - sexual behavior/health associations. Previous studies which have documented a connection between adolescent women's sports involvement and adolescent women's sexual behavior/health have failed to take sexual orientation into account (see for example, Miller et al., 1998; Rome et al., 1998; Sabo et al., 1999). Therefore, in those studies, given that the proportion of lesbians in sports may be higher than the proportion of lesbians among sport non-participants (e.g., Cahn, 1994; Nelson, 1991; although no empirical evidence exists in support of this contention), sexual orientation may have accounted for some of the lower rates of sexual intercourse and pregnancy among adolescent female sports participants.

The present study also helped to fill a gap in a literature that was in marked need of systematic research by exploring three potential explanatory mechanisms (i.e., mediators) in the connections between adolescent women's sports involvement and adolescent women's sexual behavior and sexual/reproductive health. Those explanatory mechanisms or mediators included the following: (a) functional body orientation, (b) self-empowerment/efficacy, and (c) sexual/reproductive health-related information/motivation via coach. Qualitative methodology was used in the current study to explore (a) the ways in which the adolescent women felt that their sports involvement during

their high school years influenced their lives and their views/feelings about their bodies, as well as (b) the adolescent women's experience of sexual/reproductive health-related coach talks during their high school years.

Compared to existing studies of adolescent sports involvement and adolescent sexual behavior/health, which typically utilize measures of sports involvement that are quite simplistic and uni-dimensional and are based solely on objective measures (e.g., no participation/participation; number of sports in which one participates; see for example, Miller et al., 1998; Rome et al., 1998; Savage & Holcomb, 1999), the current study used a broader multidimensional measure of sports involvement, which included both subjective and objective indicators (i.e., number of sports in which an individual participated during the high school years, number of years/seasons in which an individual was involved in sports during the high school years, number of hours per week devoted to sports during the high school years, and degree of psychological investment in sports during the high school years).

The current investigation also improved upon previous studies of adolescent sports involvement and sexual behavior by expanding existing measurement of sexual behavior. Previous studies of adolescent sports involvement and adolescent sexual behavior have been based predominately on the risk perspective of adolescent sexuality (see for example, Miller et al., 1998; Rome et al., 1998; Sabo et al., 1999). In those studies, the questions regarding sexual behavior typically are limited to questions about sexual intercourse, such as questions about whether an individual engages in sexual intercourse, number of sexual intercourse partners, and age of first sexual intercourse

experience. The current study was based on a balanced health/risk perspective of adolescent sexuality which recognizes not only the risks associated with sexual intercourse, but also acknowledges sexuality as a healthy, normative part of adolescent development. Consistent with a balanced health/risk perspective of adolescent sexuality, the current study not only incorporated questions about sexual intercourse typically used in studies of adolescent sports involvement and sexual behavior, but also incorporated questions about behaviors that decrease sexual health risks and enhance sexual/reproductive health (e.g., contraceptive use, engagement in sexual/reproductive health-seeking behaviors).

Sports Involvement and Sexual Risk-Taking Behavior

One goal of the current study was to replicate the previously-documented connection between adolescent women's sports involvement and adolescent women's sexual risk-taking behavior. As expected, adolescent women's sports involvement during the high school years was significantly and negatively associated with adolescent women's sexual risk-taking behavior, such that among the adolescent women who had ever engaged in sexual intercourse with a male, those who were relatively more involved in sports during their high school years were relatively less likely to have engaged in sexual risk-taking behaviors. Thus, the results suggest that the adolescent women who were relatively more involved in organized sports during their high school years were relatively older at time of first sexual intercourse experience, had engaged in sexual intercourse with relatively fewer partners, were more likely to have used birth control at

all or more regularly while engaging in sexual intercourse, and were less likely to have been intoxicated while engaging in sexual intercourse.

The aforementioned finding concerning the link between adolescent women's sports involvement and adolescent women's sexual risk-taking behavior is consistent with existing research which has indicated that, compared to adolescent women who do not engage in sports, adolescent women who are involved in one or more sports are less risky in terms of sexual behavior (e.g., Miller et al., 1998, Sabo et al., 1999). Specifically, those studies have indicated that, compared to women who do not engage in sports, adolescent women who are involved in sports have fewer sexual intercourse partners and experience first sexual intercourse later in life.

It is important to note that, in the present study, the reported association between adolescent women's sports involvement and adolescent women's sexual risk-taking behavior was maintained even when adolescent women's socioeconomic background and ethnicity were taken into account via statistical control. This finding is notable because adolescent women's socioeconomic background and ethnicity are factors that have been found to co-vary with adolescent women's sports involvement and adolescent women's sexual behavior (Kahn, Kalsbeek, & Hofferth, 1998; Melnick, Sabo, & Vanfossen, 1992). By controlling for adolescent women's socioeconomic background and ethnicity in the current study, it could be concluded with confidence that the reported association between adolescent women's sports involvement and adolescent women's sexual risk-taking behavior was not an artifact of those co-varying factors.

The findings from the current study not only confirmed the documented connection between adolescent women's sports involvement and adolescent women's sexual risk-taking behavior, but did so using a relatively more sensitive and appropriate measure of sexual risk-taking behavior. As described above, existing studies of adolescent sports involvement and adolescent sexual behavior are based on a risk perspective of adolescent sexuality, which focuses on sexual intercourse only and the health risks associated with engaging in sexual intercourse. The current study differed from those risk-based studies of adolescent sports involvement and sexual behavior by utilizing a relatively broader measure of sexual risk-taking behavior that was based on a balanced health/risk perspective of adolescent sexuality -- a perspective which acknowledges that adolescent sexual behavior is not necessarily a dangerous activity that should be avoided and recognizes that healthy sexuality includes the practice of "safe sex behaviors" (i.e., contraceptive use; Brooks-Gunn & Paikoff, 1993; Haffner, 1998; Tolman, 1999). Consistent with a balanced health/risk perspective of adolescent sexuality, the current study's measure of adolescent sexual risk-taking behavior not only included questions about sexual behavior that place adolescent women at risk for pregnancy and sexually transmitted disease contraction (e.g., questions about number of sexual intercourse partners, age at first sexual intercourse experience), but also included questions about sexual behaviors that decrease sexual health risks (e.g., questions about regularity of contraceptive use).

Sports Involvement and Sexual/Reproductive Health-Seeking Behavior

Although previous studies have documented the association between adolescent women's sports involvement and adolescent women's sexual risk-taking behavior and sexual/reproductive health, those studies have failed to address adolescent women's sexual/reproductive health-seeking behaviors – behaviors that are important in the development of positive sexual/reproductive health for adolescent females (see Tolman, 1999). The current study is unique in that it explored the connection between adolescent women's sports involvement and adolescent women's sexual/reproductive health-seeking behaviors, such as discussing contraception with their sexual intercourse partner(s) and discussing sexual or reproductive health-related precautions with a doctor.

As was predicted in the current study, adolescent women's sports involvement was significantly and positively related to adolescent women's sexual/reproductive health-seeking behavior, such that adolescent women who were more involved in organized sports during their high school years were also more likely to have engaged in sexual/reproductive health-seeking behavior (a finding which was maintained after statistically controlling for socioeconomic status and ethnicity). Thus, the results suggest that, among those adolescent women who had engaged in sexual intercourse with a male, those who had been relatively more involved in sports during their high school years also were more likely to have discussed contraception, sexual history, and HIV status with their male sexual intercourse partner(s); to have discussed sexual or reproductive health-related precautions/issues with a doctor or health professional; and to have had a gynecological exam.

That finding was not altogether surprising given previous research which has documented a favorable link between adolescent women's involvement in organized sports and adolescent women's sexual risk-taking behavior and sexual/reproductive health (e.g., Miller et al., 1998; Rome et al., 1998; Sabo et al., 1999). However, as described above, the current study is unique in that it directly addressed sexual/reproductive health-seeking behaviors. In doing so, the current study further acknowledged the balanced health/risk perspective of adolescent sexuality -- a perspective that recognizes sexuality as a healthy, normative part of adolescent development and suggests the importance of exploring adolescent behaviors that not only decrease sexual health risks, but also those that enhance sexual/reproductive health. As will be discussed further below, the current finding points to the potential for sports involvement to promote adolescent females' engagement in sexual/reproductive health-seeking behavior, and therefore, may have practical implications for the development of sports and community programs focused on the prevention of teenage pregnancy and sexually transmitted diseases.

Sports Involvement and Sexual/Reproductive Health

Another goal of the current study was to confirm the previously-documented connection between adolescent women's sports involvement and adolescent women's sexual/reproductive health. As predicted, adolescent women's sports involvement during the high school years was significantly associated with adolescent women's sexual/reproductive health; that is, the adolescent women who were relatively more involved in organized sports during their high school years were relatively more healthy in terms of

their sexual/reproductive health. Thus, the findings suggest that the adolescent women who were relatively more involved in sports during their high school years were relatively less likely to have been pregnant or to have been treated by a doctor for a sexually transmitted disease.

The reported finding concerning the association between adolescent women's sports involvement and adolescent women's sexual/reproductive health is consistent with existing empirical studies which have indicated that, compared to adolescent women who have not participated in organized sports, adolescent women who have been involved in one or more organized sports report lower rates of pregnancy and sexually transmitted disease contraction (e.g., Rome et al., 1998; Sabo et al., 1996; Sabo et al., 1999; Savage & Holcomb, 1999). Additionally, the finding of a positive link between adolescent women's sports involvement and adolescent women's sexual/reproductive health was not surprising given that, as described above, the participating adolescent women who were relatively more involved in sports were relatively less likely to have engaged in sexual risk-taking behaviors and relatively more likely to have engaged in sexual/reproductive health-seeking behaviors -- behaviors that may have increased the likelihood of sexual/reproductive health among the adolescent women.

It is important to note that, in the current study, the significant association between adolescent women's sports involvement and adolescent women's sexual/reproductive health was maintained even after adolescent women's socioeconomic background and ethnicity were taken into account via statistical control. Those variables were controlled because both factors have been found to co-vary with sports involvement

and sexual/reproductive health (e.g., Melnick et al., 1992). Thus, by statistically controlling for adolescent women's socioeconomic background and ethnicity in the current study, both factors were excluded as potential third variables that could have accounted for the above association.

Potential Mediators in the Association between Sports Involvement and Adolescent Women's Sexual Behavior and Sexual/Reproductive Health

A major goal of the current study was to go beyond examining the bivariate associations between adolescent women's sports involvement and adolescent women's sexual behavior and sexual/reproductive health and explain the mechanisms that account for those associations. Although existing scholarship and theory (i.e., cultural resource theory) have directly proposed or implied that the connection between adolescent women's sports involvement and adolescent women's sexual behavior and sexual/reproductive health is mediational in nature, to date, no empirical studies have addressed that proposition. Two of the three mediating factors assessed in the current study – adolescent women's functional body orientation and adolescent women's self-empowerment/efficacy – emerged from cultural resource theory (Miller et al., 1998) and will be discussed below in the context of that theoretical perspective.

The mediating role of self-empowerment/efficacy. One theoretically-driven purpose of the present research was to explore the potential mediating role of adolescent women's self-empowerment/efficacy in the association between adolescent women's sports involvement and adolescent women's sexual behavior and sexual/reproductive health. As expected, adolescent women's self-empowerment/efficacy emerged as a

mediator in each of the following associations: (a) the association between adolescent women's sports involvement and adolescent women's sexual risk-taking behavior; (b) the association between adolescent women's sports involvement and adolescent women's sexual/reproductive health-seeking behavior; and (c) the association between adolescent women's sports involvement and adolescent women's sexual/reproductive health.

As described in the previous chapter, although the mediational analyses assessed whether the predictor (sports involvement) - outcome (sexuality-related variable) regression coefficients dropped from significance to non-significance when the mediator (self-empowerment/efficacy) was entered into the equations, those analyses did not assess whether the drops in the regression coefficients were significant. Indirect effect tests provided that assessment. Indeed, as suggested by Holmbeck (2000), to conclude mediation, it is imperative that researchers not only use traditional mediational analyses (i.e., Baron and Kenny's test for mediation), but also employ post-hoc probing of mediated effects (i.e., indirect effect tests). By using both mediational and indirect effect analyses in the current study, it could be concluded with confidence that self-empowerment/efficacy mediated each of the aforementioned associations between adolescent women's sports involvement and adolescent women's sexual behavior and sexual/reproductive health.

With respect to the mediating role of self-empowerment/efficacy in the associations between adolescent women's sports involvement and adolescent women's sexual behavior and sexual/reproductive health, it is likely that the adolescent women's sports involvement (which likely provided the adolescent women with opportunities to be

assertive and proactive) resulted in their feelings of self-empowerment (i.e., dismissal of traditional gender stereotypes and establishment of feelings of self-reliance and efficacy). In turn, such empowerment likely extended to adolescent women's sexual lives and may have translated into assertive sexuality-related behaviors that decreased their sexual health risks and enhanced their sexual/reproductive health (e.g., saying "no" to unwanted sexual activity, negotiating the use of contraception, engaging in sexual/reproductive health-seeking behaviors).

The significant link between adolescent women's sports involvement and adolescent women's self-empowerment/efficacy (one component of the mediational process from adolescent women's sports involvement to adolescent women's sexual behavior and sexual/reproductive health) was consistent with previous empirical studies. Specifically, those studies have documented a favorable link between adolescent females' involvement in organized sports and adolescent females' sense of empowerment, including feelings of control and self-reliance and the dismissal of gender role stereotypes (e.g., Blinde et al., 1993; Butcher, 1989; Miller & Levy, 1996).

Because of the cross-sectional nature of the current study, the causal ordering of the association between adolescent women's sports involvement and adolescent women's self-empowerment/efficacy in particular, could be questioned. That is, because the data were collected at one time point, it was not possible to determine whether adolescent women's sports involvement resulted in high levels of self-empowerment/efficacy or whether adolescent women with high levels of self-empowerment/efficacy self-selected into sports involvement.

Notably, however, several of the adolescent women in the current study spoke to the connection between their sports involvement and their feelings of self-empowerment/efficacy in their written comments. Based on those comments, it appeared that the adolescent women's involvement in sports during their high school years, indeed resulted in enhanced feelings of self-empowerment/efficacy (see more in qualitative-based results section). Specifically, when describing the ways in which sports involvement during their high school years influenced their lives, several of the adolescent women identified self-empowerment/efficacy as an outcome of such sports involvement. For example, in her written response to the open-ended question about things she personally gained and lost from her sports involvement during her high school years, one adolescent woman described how her sports involvement led to her enhanced feelings of self-empowerment/efficacy:

"There are many positive aspects to sports involvement, however, I can't think of a negative one. From my involvement in sports, I developed a greater sense of self-confidence and determination to tackle any problem head on (as in an opponent in a race). It also encouraged me to strive hard and work hard to achieve my goals and dreams (my determination to excel academically was high too). Sports also gave me a positive outlook on life! I feel like I can do whatever I put my mind to. I've also gained a new awareness of myself, realizing my limitations and strengths."

The significant association between adolescent women's self-empowerment/efficacy and adolescent women's sexual behavior and sexual/reproductive health (another component of the mediational process from sports involvement to sexual behavior and sexual/reproductive health) is consistent with previous research as well. That research has shown that adolescent women who begin sexual intercourse early tend

to believe in traditional gender role stereotypes and adolescent girls who lack a sense of sexual entitlement and who hold traditional notions of what it means to be female are at particular risk for teenage pregnancy (e.g., Fine, 1998; Haffner, 1998).

By identifying adolescent women's self-empowerment/efficacy as a mediator in the associations between adolescent women's sports involvement and adolescent women's sexual behavior and sexual/reproductive health, the current study provided empirical support for Miller et al.'s (1998) cultural resource theory -- a theoretical perspective which posits that female adolescent sports involvement is linked to female adolescent sexual behavior (and therefore, to sexual/reproductive health) via cultural and psychosocial exchange processes. As was indicated above, according to cultural resource theory, the development of self-empowerment/efficacy is one such explanatory process. Specifically, cultural resource theory suggests that involvement in sports translates into bargaining power for adolescent girls and results in adherence to a less traditional gender script marked by high levels of self-efficacy and self-reliance (characteristics of empowerment). According to cultural resource theory, adolescent girls' feelings of self-empowerment/efficacy (gained via sports involvement) should extend outside of sports to the sexual arena and should translate into assertive sexuality-related behaviors that decrease sexual health risk and enhance sexual/reproductive health (e.g., the negotiation of contraceptive use, the engagement in sexual/reproductive health-seeking behaviors).

The mediating role of functional body orientation. Functional body orientation -- having an appreciation for one's own body for what it can do/for its athletic ability -- is another factor suggested by cultural resource theory (Miller et al., 1998) to be a mediator

in the associations between adolescent women's sports involvement and adolescent women's sexual behavior and sexual/reproductive health. As predicted, adolescent women's functional body orientation emerged as a mediator in each of the following associations: (a) the association between adolescent women's sports involvement and adolescent women's sexual health-seeking behavior; and (b) the association between adolescent women's sports involvement and adolescent women's sexual/reproductive health.

It is possible that, because sports participation encourages individuals to appreciate their bodies for their athletic performance/for what their bodies can do, those adolescent women who were relatively more involved in sports adopted a functional orientation towards their bodies. The adolescent women who assumed such a functional orientation towards their bodies may have been likely to make concerted efforts to maintain the health of their bodies in order to maintain/improve their athletic performance. Such health maintenance efforts may have included the engagement in health-enhancing behaviors, such as sexual/reproductive health-seeking behaviors, which in turn, may have increased the likelihood of sexual/reproductive health.

Contrary to expectations, adolescent women's functional body orientation did not emerge as a mediator in the association between adolescent women's sports involvement and adolescent women's sexual risk-taking behavior (based on Baron and Kenny's test for mediation). In other words, the significant regression coefficient for the association between adolescent women's sports involvement and adolescent women's sexual risk-taking behavior ($\beta = -.34, p < .001$) was not reduced to a level of non-significance when

the mediator variable (adolescent women's functional body orientation) was entered into the equation ($r = -.28$, ns).

Notably, although the regression coefficient for the association between adolescent women's sports involvement and adolescent women's sexual risk-taking behavior after adolescent women's functional body orientation (the mediator variable) was entered into the equation did not reach a level of non-significance ($p > .05$), it did reach trend-level ($p = .0449$; see Figure 4). Therefore, the decision was made to conduct a post-hoc test of the strength of the drop in the magnitude of the predictor-outcome regression coefficient after the introduction of the mediator variable (i.e., a test of the indirect effect; Holmbeck, 2000).

The indirect effect analysis revealed that the drop in the regression coefficient for the association between adolescent women's sports involvement and adolescent women's sexual risk-taking behavior after adolescent women's functional body orientation was entered into the equation was, in fact, significant. Therefore, based on the mediational and indirect effect tests, as well as the reported patterns concerning the mediating role of functional body orientation in the associations between adolescent women's sports involvement and adolescent women's sexual/reproductive health-seeking behavior and sexual/reproductive health, it can be concluded that functional body orientation was a "trend-level" mediator in the association between adolescent women's sports involvement and adolescent women's sexual risk-taking behavior.

The emergence of adolescent women's functional body orientation as a mediator in the above associations is consistent with existing scholarship which has suggested that

adolescent girl's involvement in organized sports is favorably linked to adolescent girls' body image and body orientation (e.g., Blinde et al., 1993; Jaffee & Lutter, 1995; Zimmerman & Reavill, 1988). Additionally, the current findings provide empirical support for the contention that adolescent girls' functional body orientation (an appreciation of the body for what it can do/for the body's athletic ability) has the potential to promote girls' sexual/reproductive health (e.g., via engagement in sexual health-seeking behaviors, contraception use; see Melnick et al., 1999).

The reported findings also provide support for cultural resource theory (Miller et al., 1998), which not only suggests the mediational nature of the association between adolescent women's sports involvement and adolescent women's sexual behavior and sexual/reproductive health, but also suggests the potential for adolescent women's functional body orientation to mediate that association. As described above, according to cultural resource theory, adolescent women who are involved in sports are likely to dismiss traditional feminine cultural scripts, and therefore, focus less on what their bodies look like (that is, they may be less focused on achieving culturally-proscribed heterosexual appeal) and focus more on what their bodies can do athletically. In turn, as suggested by cultural resource theory, due to their concern with the functionality of their bodies for the sake of their sports performance, adolescent women who are relatively more involved in sports also are more likely to take care of their bodies (including both sexually and reproductively-speaking).

Because of the one-time-of-measurement design of the current study, the causal ordering of the association between adolescent women's sports involvement and

adolescent women's functional body orientation is open to question (i.e., it is unclear as to whether adolescent women's sports involvement resulted in adolescent women's functional body orientation or whether adolescent women who had a functional body orientation self-selected into sports involvement). However, based on the written comments of the adolescent women, it appears that they perceived an increase in their functional body orientation as a result of their involvement in sports. For example, one adolescent woman wrote, "*Through sports, I gained a sense of appreciation for my body and what it can do in an athletic sense.*" In fact, one adolescent woman's written comments not only described the effect of her sports involvement on her body orientation, but also described how her feelings about her body, in turn, resulted in her avoidance of potentially harmful situations (which may have included dangerous sexual situations):

Swimming definitely affected the way I view and treat my body. I've often thought any positive feelings I have about my body differentiate me from other girls my age. I'm no supermodel, but I'm happy with the way I look. My physique works for me. I can swim, run, do whatever. I make an effort to keep my body healthy -- I try to eat healthily and I'm careful not to allow myself to become lazy or to put myself in dangerous situations that could be harmful to my body. I never need to weigh myself because I understand by feel and by appearance what a healthy weight is for me. By the way, I especially like my feet!!

The mediating role of sexual/reproductive health-related information/motivation via coach. One goal of the current study was to determine whether sexual/reproductive health-related information/motivation from coaches acts as an explanatory mechanism (mediator) that helps to explain the bivariate associations between adolescent women's sports involvement and adolescent women's sexual behavior and sexual/reproductive

health. Results from the current study revealed that sexual/reproductive health-related information/motivation via coach did not mediate the above associations.

The failure to find a significant mediator effect with respect to sexual/reproductive health-related information/motivation via coach was not altogether surprising for the following reasons. First, the notion of sexual/reproductive health-related information/motivation via coach has not been explored empirically and, therefore, the role of such information/motivation was speculative. Second, the fact that so few coaches appeared to talk at all to the participating adolescent women about sexual/reproductive health-related issues likely contributed to the failure to find a mediator effect; that is, there may not have been enough variability to detect significant associations.

However, as will be described and discussed below, based on the written comments of those adolescent female sports participants who reported that their coaches had talked with them about sexual/reproductive health-related issues, it appears that sexual/reproductive health-related information/motivation via coach may have the potential to play an important role in the lives of adolescent women and indeed, may help to explain the link between adolescent women's sports involvement and adolescent women's sexual behavior and sexual/reproductive health. Hence, in light of the current study's qualitative-based data and as suggested in current scholarship (see Brady, 1998; Melnick et al., 1999), further empirical attention to the role of sexual/reproductive health-related information/motivation via coach in the lives of female adolescent sports participants certainly is warranted.

Gender of coaches involved in sexual/reproductive health-related coach talk. The adolescent women who experienced sexual/reproductive health-related coach talk were asked to indicate the gender of the coach who talked to them the most about each of the sexual/reproductive health-related topics (i.e., which sexual behaviors are safe, ways to avoid pregnancy and sexually transmitted diseases, negative consequences of sexual activity, and birth control information). The overwhelming majority of the coaches who talked to the adolescent women the most about any of those topics was female. Based on that finding, one might conclude that the adolescent women were more likely to have experienced sexual/reproductive health-related coach talk if their coaches were female compared to if their coaches were male. However, caution must be taken when considering that conclusion. Specifically, because the adolescent women were not asked to indicate the number of male and female coaches they had during their high school years or whether each of those coaches engaged in sexual/reproductive health-related coach talk, it was not possible to determine whether a greater proportion of male or female coaches engaged in such talk. However, given that only about 35% of the coaches of high school girls' sports teams are female (Acosta & Carpenter, 1996; as cited in Melnick et al., 1999), it is likely that the participating adolescent women were more likely to experience sexual/reproductive coach talk if they had a female coach.

Adolescent Women's Experience of Sexual/Reproductive Health-Related Coach Talk

One qualitative-based goal of the current study was to gain an understanding of the adolescent women's experience of sexual/reproductive health-related coach talk during their high school years. To address that goal, the adolescent women who were

involved in sports during their high school years were asked to describe in writing the talks their coaches had with them about sexual/reproductive health-related issues, the characteristics of the coaches who were involved in those talks, and their thoughts and feelings about those talks.

Despite the small number of responses to the open-ended questions regarding sexual/reproductive health-related coach talk, several themes emerged from those responses and were categorized into the following domains: (a) content of sexual/reproductive health-related coach talk; (b) context of sexual/reproductive health-related coach talk; (c) goals of sexual/reproductive health-related coach talk; (d) characteristics of coaches involved in sexual/reproductive health-related coach talk; and (e) adolescent women's reactions to sexual/reproductive health-related coach talk.

With respect to the content and context of the talks the adolescent women's coaches had with them about sexual/reproductive health-related topics (i.e., which sexual behaviors are safe, ways to avoid pregnancy and STDs, negative consequences of sexual activity, and birth control information), several commonalities emerged from the adolescent women's written comments. For example, some of the adolescent women reported that the sexual/reproductive health-related talks their coaches had with them were informal in nature and were embedded within more general discussions about health and safety or boys and dating. Additionally, some of the adolescent women described that the sexual/reproductive health-related talks their coaches had with them included references made by the coaches to their own personal experiences or to relevant experiences of the adolescents' peers. In short, it appears that some of the adolescent

women's coaches played the role of informal sex educator. By embedding the sexual/reproductive health-related talks into discussions about other less "taboo" or less sensitive issues (e.g., general health, dating) and by using personal experiences as examples in those discussions, it is likely that the coaches were able to create a relaxed setting in which key sexual/reproductive health messages could be transmitted to the adolescent women – messages that emphasized the relevance of sexual/reproductive health-related issues in the lives of these adolescent women.

In the adolescent women's descriptions of the sexual/reproductive health-related talks their coaches had with them during their high school years, the goals or purposes of many of those talks were evident. Specifically, it appeared that the goals of those talks included the dissemination of sexual/reproductive health-related information (including birth control information and information regarding the negative consequences of sexual intercourse); the promotion of safe sexual decision-making; and the promotion of the adolescent women's health for the sake of the adolescents' well-being and for the sake of the adolescents' and the teams' sports/athletic performance.

Notably, the aforementioned coach talk goals are consistent with a recently-developed model of the ways in which adults can encourage adolescent sexual health – a model developed by Deborah Haffner who is a leading scholar and researcher in the field of adolescent sexuality and who is a proponent of the health perspective of adolescent sexuality (Haffner, 1998). Specifically, according to that model, adults can encourage adolescent sexual health by: (a) providing accurate information and education about sexuality; (b) fostering responsible decision-making skills; (c) modeling healthy sexual

attitudes and behaviors; and (d) offering young people support and guidance to affirm their own values. Two of the previously-described sexual/reproductive health-related coach talk goals -- the dissemination of sexual/reproductive health-related information and the promotion of safe sexual decision-making -- are almost identical to the first two recommendations outlined in Haffner's model. Thus, coach-to-athlete communication may be one logical and promising avenue by which key sexual/reproductive health messages can be transmitted to female adolescent sports participants.

In the adolescent women's descriptions of characteristics of the coaches who talked to them about sexual/reproductive health-related issues, several of the emergent characteristics "fit" into the aforementioned model of the ways adults can encourage adolescent sexual health (Haffner, 1998). For example, several of the adolescent women who wrote about sexual/reproductive health-related coach talk described their coaches as being knowledgeable about sexual/reproductive health issues. Knowledge, clearly, is imperative to providing accurate information about sexuality. Indeed, many coaches are quite knowledgeable about such issues because they are educated in physical education and health (Melnick et al., 1999).

"Being a good role model" was another coach characteristic that emerged from the adolescent women's written comments about their coaches who talked to them about sexual/reproductive health-related issues. Notably, according to Haffner's model, being a good role model with respect to sexual attitudes and behaviors is one way that adults can encourage healthy adolescent sexuality.

A coach characteristic that appeared to be of central importance in the adolescent women's descriptions of the coaches who talked to them about sexual/reproductive health-related issues was the characteristic of being friend-like. A majority of the adolescent women who wrote about their experiences of sexual/reproductive health-related coach talk described their coaches who talked to them about sexual/reproductive health-related issues as being friend-like in that they were "like a friend," "open," "caring," "understanding," and "warm." Notably, several of the adolescent women not only described their coaches as being friend-like, but also stressed the importance of having an adult who was not their parent with whom they could talk about sensitive issues and turn to for advice and support. Not surprisingly, many of those adolescent women who described their coaches who talked to them about sexual/reproductive health-related issues as being friend-like also expressed a sense of comfort and ease with respect to talking about sexual/reproductive health-related issues with their coaches.

Overall, the adolescent women who wrote about sexual/reproductive health-related talks their coaches had with them reacted to those talks in a positive manner. For example, some adolescent women expressed an appreciation for the sexual/reproductive health-related information and advice from their coaches. Others commented that such coach talk resulted in enhanced feelings of comfort surrounding sexual/reproductive health-related issues. Another reaction by some of the adolescent women to their experience of sexual/reproductive health-related coach talk was an increased awareness of their own sexual behavior and an enhanced understanding of the negative consequences of sexual activity.

Based on the adolescent women's written comments, it appears that the adolescent women felt both positive and comfortable about receiving sexual/reproductive health-related information and messages from their coaches. Moreover, such information/messages seemed to be somewhat influential for some adolescent women in terms of their own sexual decision-making and beliefs.

Although we can only speculate about the role coaches play in helping to deter risky sexual behavior and to promote sexual/reproductive health among adolescent women, the current study suggests that coaches may be an effective and logical means for providing sexual/reproductive health-related information and messages to adolescent females. Indeed, as suggested above, the ways in which the described coaches transmitted key sexual/reproductive health-related information/motivation to the adolescent women would be considered by Haffner to be positive and effective ways that adults can encourage healthy teenage sexuality.

Given that some student-athletes spend more time with their coaches than with their classroom teachers or even their parents (Acosta & Carpenter, 1996; as cited in Melnick et al., 1999) and in light of the reported friend-like nature of the described coaches who engaged in sexual/reproductive health-related coach talk, it is not surprising that some female adolescents look to their coaches for guidance about personal matters, including sexual matters (Sabo, 1997; as cited in Brady, 1998). Such guidance-seeking has been suggested to be more likely if the coach is female. In fact, research indicates that female athletes are more likely to make personal disclosures about sexual issues to female coaches than to male coaches (Officer & Rosenfield, 1987). Today, women

comprise approximately 35% of the coaches of high school girls' sports teams and 48% of the coaches of intercollegiate women's teams (Acosta & Carpenter, 1996; as cited in Melnick et al., 1999). Therefore, many female athletes have access to an adult female who likely is willing to listen to their personal problems and concerns and offer advice when appropriate.

Qualitative-Based Outcomes of Adolescent Women's Sports Involvement

Overview. One purpose of the current study was to generate a rich, contextualized portrayal of adolescent women's experience of sports involvement during their high school years. In particular, to uncover the adolescent women's perceptions of the ways in which their involvement in sports during their high school years influenced their lives and their views/feelings about their bodies, the adolescent women were afforded the opportunity to answer open-ended questions in the questionnaire. In general, the adolescent women's responses to the open-ended questions about the influence of sports involvement in their lives (including questions about things they personally gained and lost from their sports involvement) were positive, suggesting that the adolescent women who participated in the current study felt that their sports involvement during their high school years was overwhelmingly beneficial.

As described above, adolescent women's self-empowerment/efficacy was one positive outcome of adolescent women's sports involvement that emerged from the adolescent women's written comments and the role of such empowerment/efficacy in the sexual/reproductive lives of the adolescent female sports participants was discussed in detail earlier in this chapter. Other positive outcomes of adolescent women's sports

involvement that emerged from the adolescent women's written comments included the following: (a) increased involvement as a connection to school and as a way to keep busy and out of trouble; (b) development of friendships/close relationships; (c) health benefits/promotion of a healthy lifestyle; (d) stress reduction; (e) enhanced responsibility/discipline; and (f) development of teamwork skills. The first three of those positive outcomes of sports involvement (see outcomes a, b, and c above) are discussed in a later section in this chapter with a focus on their potential implications for adolescent women's sexual behavior and sexual/reproductive health.

The only negative outcome of sports involvement that was repeatedly expressed in the adolescent women's comments was the loss of available time for other activities and people. Notably, however, several of the adolescent women who wrote about such time loss also commented on the fact that their loss of available time forced them to learn effective time-management skills. For example, one adolescent woman wrote, *"Sports made my life more stressful because I had to balance multiple things like sports, school work, friends, etc. I had to learn how to balance out important things and manage my time better."*

With respect to the ways in which the adolescent women felt that their sports involvement during their high school years influenced their views/feelings about their bodies, several positive themes emerged. As described earlier in this chapter, some of the adolescent women developed a functional body orientation as a result of their sports involvement and the implications of such an orientation for adolescent women's sexual behavior and sexual/reproductive health are discussed above. Other body-related

outcomes of sports involvement that emerged from the adolescent women's written comments included: (a) the ability to feel comfortable with one's body; (b) a sense of appreciation for physical/bodily strength; (c) feelings of confidence and respect for one's body; and (d) increased knowledge about one's body. Those perceived outcomes are discussed below in terms of their relevance to adolescent women's sexual behavior and sexual reproductive health.

Outcomes of sports involvement -- implications for adolescent women's sexual behavior/health. The following discussion focuses on those outcomes of sports involvement that emerged from the adolescent women's written comments (other than women's self-empowerment/efficacy and adolescent women's functional body orientation -- see above for discussion) that might have implications for adolescent women's sexual behavior and sexual/reproductive health. As indicated above, one such outcome of adolescent women's sports involvement was an increased sense of involvement in and connection to school and community. Based on those comments, it appears that sports involvement helps to integrate adolescent females into the school system and heightens adolescent females' sense of community belonging.

According to social control theory (Gottfredson & Hirschi, 1990; Hirschi, 1969), individuals who do not have strong bonds or ties to institutions (e.g., school, family), will be likely to engage in risk-taking/problem behaviors (including risky sexual behaviors). Thus, to the extent that sports participation promotes adolescent women's sense of involvement in and connection to school and community (societal institutions), those young women may be less likely to engage in risky sexual behaviors. Those risky sexual

behaviors, which might include engagement in early sexual involvement and engagement in unprotected sexual intercourse, certainly have implications for adolescent women's sexual and reproductive health.

Increased involvement as a means to keep busy and out of trouble was another perceived outcome of sports involvement that emerged from the adolescent women's written comments that might have implications for adolescent women's sexual behavior and sexual/reproductive health. It is possible that adolescents who are kept busy with structured activities (e.g., sports) during their free time (e.g., after school, weekends) might have less time to get into "trouble" (e.g., engage in risky sexual activity), and therefore, might be at decreased risk for sexual/reproductive health problems.

That proposition is consistent with previous research and scholarship which suggests that adolescents with substantial amounts of unstructured, unsupervised time are more likely to engage in risky behavior than those who are constructively engaged (e.g., Benda & DiBlasio, 1994; Lauritsen, 1994; Zill et al., 1995). However, given extant research which has shown that, compared to adolescent boys who do not participate in sports, adolescent boys who are involved in one or more sports engage in sexual intercourse more frequently, have more sexual intercourse partners, and report a lower age at first sexual intercourse experience, the above "idle hands" hypothesis might not apply.

A third outcome of sports involvement that emerged from the adolescent women's written comments which may have implications for adolescent women's sexual behavior/health is the development of friendships/close relationships. It is possible that

team membership helps to integrate adolescent girls into a friendship network that, in turn, facilitates the discussion of personal matters, including relationships and sexual matters, with peers. In fact, existing scholarship has suggested that adolescent females spend a good deal of time talking about boys and dating and that the athletic subculture may be one setting in which girls can share information about the character and motives of the boys they date or plan to date or which boys are to be distrusted and avoided (e.g., boys who will not wear a condom, boys who brag about sexual conquests; Lefkowitz, 1997; as cited in Melnick et al., 1999; Pipher, 1994). Girls lacking this information may be relatively less knowledgeable, less vigilant, and more naïve about the boys they choose to go out with (Lefkowitz, 1997; as cited in Melnick et al., 1999; Pipher, 1994).

Alternatively, adolescent females' participation in the athletic subculture may give adolescent girls something more to talk about than boys and dating. Discussions about boys, dating, and sex may lose some of their immediacy as athletic concerns and team matters acquire greater salience. The "esprit de corps" of the girls' locker room likely provides many opportunities for interaction and sports-related talks. As sexual-related matters lose salience and importance, adolescent girls may be less concerned about engaging in sex and therefore, may be less likely to engage in sexual behavior. Indeed, the potential for some peer sub-cultures/groups to positively influence adolescents has been suggested in the current literature (Brown, 1990). For adolescent girls, being part of a peer group that is immersed in the athletic subculture, may have implications for their sexual behavior/health.

The promotion of a healthy lifestyle was another emergent outcome of adolescent women's sports involvement that has obvious implications for adolescent women's sexual behavior and sexual/reproductive health. Specifically, sports involvement seems to foster a general health-consciousness among adolescent women, which in turn, may promote behaviors that enhance sexual and reproductive health (e.g., engagement in sexual reproductive health-seeking behaviors, avoidance of risky sexual behaviors and sexual situations). Thus, one way to promote the sexual/reproductive health of female adolescent athletes might be to encourage coaches to emphasize the importance of being health-conscious (perhaps in the context of athletic/team performance).

Some adolescent women indicated that their sports involvement enhanced their knowledge about their bodies, including their knowledge about how to take care of their bodies. Such knowledge has been suggested to facilitate a sense of personal control over one's body (including the health of one's body) -- control which might extend into adolescent women's sexual experiences (e.g., control over contraception use; being able to say "no" to unwanted sex; Blinde et al., 1993). Additionally, based on the adolescent women's written comments, it is evident that some of the adolescent women who participated in sports viewed their bodies as being strong and competent. Indeed, viewing one's body in such a way can enhance adolescent women's sense of mastery and control and can help adolescent women to feel competent and in control when facing challenging situations (including sexual situations). Adolescent females with a greater sense of physical strength and competence may be better able to fend off coercive attempts to have sex. In the context of sexual situations, adolescent females' ability to

say “no” or “how far” often takes more than verbal pronouncements (Hovell, Brindis, & Glei, 1999).

Limitations and Future Directions

Although the current study provided interesting and meaningful findings, it was limited in several ways. First, because the sample was relatively small, there was some chance of sample bias and random error. Also, as a result of asking the participating adolescent women (who were 18- and 19-year old college students) to reflect on their experiences during their high school years, bias or error associated with retrospective reports may have been introduced into the study (Henry, Moffitt, Caspi, Langley, & Silva, 1994; Smith, Leffingwell, & Ptacek, 1999). However, given that most of the participants had recently graduated from high school (within one or two years of filling out the questionnaire), it is likely that their reflections were fairly accurate. Additionally, due to the sensitive nature of some of the questions in the questionnaire (particularly those that concerned sexuality-related behaviors), the veracity of the adolescent women’s responses to those questions could be doubted. However, steps were taken to ensure participant confidentiality and, in so doing, helped to ensure truthful responses (see Chapter 3). The generalizability of the reported findings also is limited given the constricted variation in the ethnic composition of the sample and the fact that the participating adolescent women were all college students (although it is not clear whether the patterns of findings would be different for adolescent women who do not attend college).

An additional limitation of the present study concerns the study’s one-time-of measurement design. Specifically, the temporal ordering of the variables and the causal

pathways implied by the mediated effects can be questioned because of the lack of temporal separation between constructs. Because of selection processes, the reported associations between: (a) adolescent women's sports involvement and adolescent women's self-empowerment/efficacy, and (b) adolescent women's sports involvement and adolescent women's functional body orientation were particularly open to debate with respect to direction. That is, it is possible that the adolescent women with high levels of self-empowerment/efficacy and high levels of functional body orientation self-selected into sports involvement. Although such selection processes may indeed be at work, as described previously in this chapter, the study's qualitative-based findings suggest that adolescent women's sports involvement does in fact influence both adolescent women's self-empowerment/efficacy and adolescent women's functional body orientation. Notably, the current study's use of qualitative data to help clarify the nature or direction of the quantitative-based results points to one advantage of using qualitative and quantitative methodologies together and provides evidence of the compatibility of those methodologies (e.g., Newman & Benz, 1998).

The current study also is limited in that the possibility of third variable explanations cannot be ruled out; that is, the adolescent women's sexual behavior and sexual/reproductive health may not have resulted from adolescent women's sports involvement. Instead, adolescent women's sexual behavior and sexual/reproductive health may have been the result of factors that co-vary with sports involvement. Although three such factors -- socioeconomic status, ethnic background, and sexual

orientation -- were controlled for in the current study, other co-varying factors could have accounted for the reported sports involvement - sexual behavior/health associations.

For example, the adolescent women who were relatively more involved in sports may also have been more likely to be health-conscious. In turn, such health-consciousness, rather than sports involvement per se, may have accounted for the reported associations between adolescent women's sports involvement and adolescent women's sexual behavior and sexual/reproductive health. Another potential third variable is adolescent women's maturational timing. Specifically, girls who mature early not only tend to be socialized out of sports involvement (Malina, 1983), but also are somewhat more likely to engage in risky sexual behavior, such as early engagement in sexual intercourse (presumably because those girls are popular with boys and tend to spend time with older boys who initiate them into sexual activities that might otherwise be delayed; Caspi & Moffitt, 1991; Ge, Conger, & Elder, 1996; Magnusson, Stattin & Allen, 1986). Thus, in this case, girls' maturational timing, rather than sports involvement per se, may have accounted for the reported sports involvement-sexual behavior/health connections. Future studies exploring the connections between adolescent women's sports involvement and adolescent women's sexual behavior and sexual/reproductive health should measure factors that may co-vary with such involvement and if necessary, should take those factors into account via statistical control.

One likely explanation for the favorable connection between adolescent women's sports involvement and adolescent women's sexual behavior and sexual/reproductive

health is that sports involvement increases the contact between health care professionals (e.g., physicians, nurses, athletic trainers, or physical therapists) and adolescent women. When a girl tries out for a sport, she must have a physical exam and periodic check-ups (National Federation of State High Schools Association, 1997). Once in the health system loop, female athletes have access to health-related information and the opportunity to ask questions about their health (sexual/reproductive or otherwise) and their bodies (which is likely given the current findings regarding the connection between adolescent women's sports involvement and adolescent women's sexual/reproductive health-seeking behavior). Reciprocally, health care professionals have a good deal of contact with adolescent athletes, which gives them more opportunities to develop comfortable relationships, ask questions about sexual/reproductive health, provide information about contraception, or answer questions about sexuality.

Indeed, leading scholars in the field of adolescent sexuality have argued that health care professionals can play an important role in promoting adolescent sexual health (e.g., by providing young people with accurate sexual/reproductive health-related information as well as affordable, sensitive, and confidential sexual and reproductive health services; e.g., Haffner, 1998; Tolman, 1999). The potential role of health care professionals in fostering adolescent female athletes' sexual/reproductive health is promising and deserves empirical attention.

With respect to measurement issues, the current study also has limitations. For example, the way in which the open-ended question about adolescent women's experiences of sexual/reproductive health-related coach talk was asked was not optimal.

The adolescent women were asked to describe in writing only those researcher-specified sexual/reproductive health-related issues that their coaches talked to them about either “fairly often” or “very often.” Consequently, those adolescent women whose coaches talked to them about any of the sexual/reproductive health-related issues “once in a while” did not write about their experience of such sexual/reproductive health-related coach talk. Thus, the current study may have failed to capture the full range of the adolescent women’s experiences of sexual/reproductive health-related coach talk.

Although the findings from the current study suggest that the adolescent women who were relatively more involved in sports also had relatively fewer sexual intercourse partners and were relatively older at age of first sexual intercourse experience, the current study did not assess the frequency with which the adolescent women engaged in sexual intercourse. Such frequency might have implications for adolescent women’s sexual/reproductive health (in that a higher frequency of engaging in sexual intercourse might be considered risky, especially if protection is not used), and therefore, should be investigated in future studies.

One could question the face validity of the current study’s measure of functional body orientation -- having an appreciation for one’s body for what it can do/for its athletic ability. That is, some of the items (e.g., “the ability to use one’s body to achieve physical goals is one of the most important functions of the body”) were not specific to strength accomplishments, athletic ability, or sports performance and could be conceptualized as having an appreciation for one’s body for its ability to reproduce. However, the measure of functional body orientation, which was developed for the

current study, had good internal reliability (Cronbach's $\alpha = .80$, $p < .001$) and was significantly correlated with sports involvement and sexual behavior/health in the expected directions. One possible focus of future studies might be to further develop this measure.

Notwithstanding these alternative explanations and limitations, the reported results illustrating the mediated models may be valid representations of likely ways in which adolescent women's sports involvement is linked to adolescent women's sexual behavior and sexual/reproductive health. Future research efforts should be aimed at replicating the findings with a larger, more diverse sample, using longitudinal designs and applying longitudinal analytic techniques, such as growth curve modeling (Willette & Sawyer, 1996). That research should assess whether over time individual adolescent women's sports involvement leads to enhanced self-empowerment/efficacy and enhanced functional body orientation, followed by decreased sexual risk-taking behavior, increased sexual/reproductive health-seeking behavior, and enhanced sexual/reproductive health. Additionally, an important direction for future research is to investigate whether the sexuality-related benefits of adolescent women's sports involvement during the high school years extend into young adulthood or whether continued participation in sports is necessary to sustain such benefits.

Future studies also should explore whether particular dimensions of sports involvement (e.g., subjective/psychological dimensions) or different types of sports (e.g., those that are most challenging to the traditional female gender role script) are relatively more important to the sexual health of adolescent women. Additionally, an empirical

question that deserves attention is whether the reported processes are unique to sports involvement or whether adolescent involvement in other extracurricular activities might follow similar patterns.

One next step for researchers might be to explore the connection between sports involvement and sexual behavior/health among adolescent men. Interestingly, research efforts have indicated that the sports involvement - sexual behavior/health link is very different for adolescent boys and adolescent girls. Research has shown that, compared to adolescent boys who are not involved in sports, adolescent boys who are involved in one or more sports have more sexual intercourse partners, higher frequency of sexual intercourse, and earlier age at first sexual intercourse experience (Miller et al., 1998). Although the connection between adolescent boys' sports involvement and adolescent boys' sexual behavior has been investigated at the bivariate level, no existing studies have explored explanatory mechanisms in that connection. Cultural resource theory (Miller et al., 1998) provides a theoretical foundation on which to begin that exploration. Specifically, cultural resource theory predicts that for adolescent boys, sports involvement amplifies the traditional male gender script -- a script which encourages boys to initiate sex, to be sexually aggressive with girls, and to regard sexual conquests as validation for male adequacy, which in turn, is predicted to lead to risky sexual behavior.

To gain a deeper, more contextualized understanding of the role of sports involvement in the sexual/reproductive lives of adolescent women, interviews should be conducted with adolescent women (e.g., Seidman, 1991). In particular, those interviews might focus more directly on adolescent women's views of the ways in which their sports

involvement influenced their sexual decision-making (if at all), as well as their feelings and opinions about receiving sexual/reproductive health-related messages from their coaches. Additionally, interviews with coaches of adolescent female sports teams should be conducted in order to uncover coaches' feelings about their potential roles as informal health educators. Indeed, to evaluate the feasibility of sexual/reproductive health education via coaches, it is important to investigate coaches' level of comfort with such health education as well as perceived and real barriers to administering such health education.

Contributions and Implications

Current limitations notwithstanding, this study makes important contributions to the extant literature. First, the present study improved upon existing studies of adolescent involvement in organized sports and adolescent sexual behavior/health by improving on the measurement of two key constructs -- sports involvement and sexual risk-taking behavior. Specifically, compared to existing studies, the present study used a more broad and meaningful measure of sports involvement -- one that included both subjective and objective indicators. Additionally, the current study's measure of sexual risk-taking behavior was more sensitive and appropriate than existing measures. Consistent with a balanced health/risk perspective of adolescent sexuality, the current study's measure of adolescent sexual risk-taking behavior not only included questions about behaviors that decrease sexual health risks, but also included questions about behaviors that enhance sexual/reproductive health. Second, guided in part by a balanced health/risk perspective of adolescent sexuality, the current study was unique in that it

directly addressed adolescent women's sexual/reproductive health-seeking behaviors -- behaviors that are important to the development of adolescent women's sexual/reproductive health.

Third, the current study extended previous research, which has been limited to the investigation of the bivariate association between adolescent women's sports involvement and adolescent women's sexual behavior and sexual/reproductive health, by identifying and assessing two mechanisms that help to explain that association -- adolescent women's self-empowerment/efficacy and adolescent women's functional body orientation. Notably, the investigation of those mechanisms is consistent with cultural resource theory (Miller et al., 1998) -- a theoretical perspective which suggests the mediational nature of the sports involvement-sexual behavior/health connection and implies the potential mediating roles of adolescent women's self-empowerment/efficacy and adolescent women's functional body orientation in that connection.

Thus, the current study suggests the potential for involvement in organized team sports to favorably influence adolescent women's sexual behavior and sexual/reproductive health and pinpoints key mechanisms that help to clarify the nature of that influence. While future researchers must avoid oversimplifying and overstating linkages between adolescent women's sports involvement and adolescent women's sexual behavior and sexual/reproductive health, the preventative implications of the findings reported here are worth serious consideration. For example, programmatic efforts aimed at decreasing sexual/reproductive health risks and enhancing sexual/reproductive health among female adolescents might focus on involving teenage girls in sports programs (i.e.,

organized team sports), with a particular emphasis on encouraging those adolescent girls to be assertive and proactive and to appreciate their bodies for their athletic ability.

As described in detail above, based on the adolescent women's written comments, it appears that coaches can play a key role in encouraging the sexual/reproductive health of female adolescent athletes. Thus, another focus of preventative efforts aimed at decreasing rates of adolescent pregnancy and sexually transmitted diseases might be to educate coaches in sexual/reproductive issues so that they can transmit accurate health messages to their female adolescent athletes and so they are equipped to answer any sexual/reproductive-related questions that their athletes bring to them. Indeed, according to Tolman's (1999) recently-developed model of female adolescent sexual health, accurate information and knowledge about sexual activity and sexual reproductive health (which must be accessible) is critical to adolescent females' healthy sexual decision-making and therefore, is critical to the development of adolescent females' healthy sexuality. Given the current study's findings and research which suggests that some adolescent female athletes look to their coaches for guidance about personal issues (including sexual matters), coaches might be one logical and effective avenue by which to provide such information/knowledge to female adolescent athletes.

Although the current findings suggest that adolescent women who are relatively more involved in organized team sports (on a scale ranging from no sports involvement to high sports involvement) are (a) relatively less likely to engage in sexual risk-taking behavior, (b) relatively more likely to engage in sexual/reproductive health-seeking

behavior, and (c) relatively more likely to exhibit sexual/reproductive health, questions remain that are critical to the development of programs aimed at preventing teenage pregnancy and sexually transmitted diseases. Those questions include the following: (1) *Is simply being involved in sports at all (regardless of level of participation) important to the sexual behavior and sexual reproductive health of adolescent women?* and (2) *Among adolescent women who do participate in sports, is level of sports involvement predictive of sexual behavior and sexual reproductive health?*

To address the first of the above questions and assess whether level of sexual risk-taking behavior, sexual/reproductive health-seeking behavior, and sexual/reproductive health differed as a function of sports involvement (no sports involvement versus any level of sports involvement), a series of post-hoc analyses (analyses of variance) was conducted, with sports involvement as the independent variable. Results of those analyses revealed that, compared to adolescent women who were not involved in any sports during their high school years, adolescent women who participated in one or more sports reported significantly lower levels of sexual risk-taking behavior and significantly higher levels of sexual/reproductive health-seeking behavior, and were significantly more likely to have exhibited sexual/reproductive health. Thus, when developing a prevention program aimed at decreasing sexual health risks and enhancing sexual/reproductive health, it is important to recognize that any level involvement in sports could have important implications for the sexual/reproductive lives of adolescent women.

To address the second of the aforementioned questions and assess whether level of sports involvement among adolescent female sports participants was predictive of

sexual behavior and sexual/reproductive health, post-hoc analyses (regression analyses) were conducted, with level of sports involvement as the independent variable. Results of those analyses revealed that, among the adolescent women who were involved in organized sports during their high school years, a greater level of involvement in sports was associated with: (a) a lower likelihood of engaging in sexual risk-taking behaviors; (b) a higher likelihood of engaging in sexual/reproductive health-seeking behaviors; and (c) a higher likelihood of exhibiting sexual/reproductive health. These findings would suggest that it is important for program developers to recognize that whereas any involvement in sports (regardless of degree) likely will benefit adolescent women in terms of their sexual behavior and sexual/reproductive health, the sexual/reproductive-related benefits of sports involvement likely will increase with adolescent women's increased involvement in sports.

Another important issue to consider when designing teenage pregnancy/sexually transmitted disease prevention programs is that a majority of female adolescents will become involved in sexual relationships during their teenage years (Sexuality Information and Education Council of the United States, 2001; The Allen Guttmacher Institute, 1999). In fact, in the United States, by the age of 18, the vast majority of adolescent women have engaged in deep kissing (85-90%) and heavy petting (70-75%; Coles & Stokes, 1995; as cited in Haffner, 1998); and by the 12th grade, approximately 60-70% of adolescent women have engaged in sexual intercourse with a male (a percentage that increases to about 76% by the age of 20 (Sexuality Information and Education Council of the United States, 2001; Youth Risk Behavior Surveillance, 1999).

With respect to sexual behaviors, the adolescent women who participated in the current study are “typical.” Specifically, the overwhelming majority of the adolescent women (both sports participants and non-sports participants) had engaged in a range of non-intercourse sexual behaviors and approximately 62% of the adolescent women had engaged in sexual intercourse with a male. Notably, post-hoc analyses (chi-square analyses) revealed that the adolescent women who were involved in sports and those who were not involved in sports were equally likely to have ever engaged in sexual intercourse with a male. However, as described above, compared to adolescent women who were not involved in sports, the adolescent women who were involved in sports were more likely to be safe (i.e., use contraception and not be intoxicated) when they did engage in sexual intercourse (which certainly has implications for sexual/reproductive health).

Thus, based on the current results as well as existing scholarship and a health perspective of adolescent sexuality (e.g., Haffner, 1998; Tolman, 1999), programmatic efforts (including those that are sports-based) aimed at decreasing rates of teenage pregnancy and sexually transmitted diseases should not ignore adolescent women’s sexuality (or assume that the best/only intervention is to promote abstinence). Instead, as argued by contemporary scholars (Haffner, 1998; Tolman, 1999), such programmatic efforts should recognize adolescent women’s sexual needs and desires, help adolescent women to evaluate their own readiness for mature sexual relationships, and focus on providing adolescent women with the sexuality-related information they need to make responsible sexual decisions (e.g., practical information about condom use).

In light of the potential for adolescent women's sports involvement to favorably influence their sexual behavior and sexual/reproductive health, a worthwhile endeavor might be to encourage parents to support their adolescent girls in pursuing organized team sports as an extracurricular activity. Indeed, according to a recent report, 44% of female adolescent athletes listed "parental support/involvement" as the factor that gave them the most encouragement in their athletic activities (The Wilson Report, 1998). Such parental support may be particularly important in the teenage years when sports participation dramatically declines for girls (Zimmerman & Reavill, 1998). Parental support also may be important in the childhood and pre-teenage years given that early participation in sports appears to be a key predictor of such participation during the adolescent and young adulthood years (Zimmerman & Reavill, 1998). Notably, the average age of initial sports participation among the adolescent female sports participants in the current study was 11 years old.

Concluding Remarks

In light of the concern in contemporary America over adolescent sexual behavior and sexual/reproductive health and given that organized sports play an important role in the lives of thousands of adolescent women, the connection between adolescent women's sports involvement and adolescent women's sexual behavior and sexual/reproductive health is deserving of continued empirical investigation. The current findings point to the potential for involvement in organized sports to favorably influence adolescent women's sexual behavior and sexual/reproductive health. Programmatic efforts aimed at decreasing rates of pregnancy and sexually transmitted diseases among adolescent

women should seriously consider the preventative implications of adolescent women's sports involvement. Indeed, addressing sexual/reproductive health concerns through sports programs, both in school and community settings, may be politically acceptable for policy-makers, program managers, and communities.

APPENDIX A: Oral Recruitment Script

Oral Recruitment Script

Young Women's Reflections on Sports Involvement, Self-Perceptions, and Sexuality

Principal Investigator: Stephanie L. Jacobs, Ph.D. Candidate

- Hello, my name is Stephanie Jacobs and I am a doctoral student in Family Studies and Human Development here at the University of Arizona.
 - Currently, I am working on my dissertation project and would like to present you with an opportunity to fill out a survey.
 - First, let me tell you about my project. The project is a questionnaire-based study about young women's sports involvement during high school, as well as about young women's body orientation, discussions with coaches about health-related issues, and sexual risk-taking behavior, sexual/reproductive health, and sexual health-seeking behaviors.
 - In order to participate in the study, you must be female and between the ages of 18 - 19 years old; however, you do not need to have been involved in sports or to have engaged in sexual activity.
 - It is important to let you know that your participation is strictly voluntary, you may choose to discontinue your participation at any time, and you may choose not to answer any questions.
 - It is also important to tell you that all responses will be confidential - only code numbers, and not names, will be attached to surveys.
 - Additionally, I want to let you know that stamped, pre-addressed envelopes are included in the questionnaire packets for you to return your completed questionnaire to my research office at the University of Arizona.
 - You will be compensated for your participation, but you will need to fill out and return the blue information sheet enclosed in the questionnaire packet in order to receive that compensation.
 - You will also need to fill out and return the white consent form enclosed in the questionnaire packet in order to participate.
 - As with the questionnaire, there is a pre-stamped return envelope in the packet for you to return both the information form and the consent form.
 - You will receive a copy of your signed consent form with your mailed compensation.
 - If you have any questions or comments, you can contact me by telephone at 621-7127 or by email at sjacobs@u.arizona.edu.
- * For those female freshmen who are interested in participating, the P.I. will distribute questionnaire packets, either by passing out questionnaire packets during class or by leaving questionnaire packets with the professor for students to pick up after class.*
- * Susan S. Koerner, Ph.D. (the principal investigator's advisor) may help with recruitment. If she presents the project to a class, she will adhere to the script as closely as possible. She may make some minor changes. For example, she will introduce herself to the class, she will refer to the project as her doctoral student's dissertation project, and she will inform students that she can call the principal investigator if they have any questions or comments).*

APPENDIX B: Participant Information Form

★ YOUNG WOMEN'S REFLECTIONS ON SPORTS INVOLVEMENT, SELF-
PERCEPTIONS, AND SEXUALITY PROJECT

PARTICIPANT INFORMATION FORM

In order to mail you a \$5 "Thank You" check (and a \$50 gift certificate if you win the drawing), we need you to fill out the information below.

➡ Name (please print): _____
First Middle Last
Initial

➡ Address: _____

PLEASE RETURN THIS FORM IN THE
SMALL WHITE ENVELOPE PROVIDED IN YOUR PACKET

THANK YOU!!!

Code Number: _____

APPENDIX C: Consent Form

APPROVED BY UNIVERSITY OF AZ IRB
THIS STAMP MUST APPEAR ON ALL
DOCUMENTS USED TO CONSENT SUBJECTS.
DATE: 7-25-00 EXPIRATION: 7-25-01

SUBJECT'S CONSENT FORM

TITLE OF PROJECT:

YOUNG WOMEN'S REFLECTIONS ON SPORTS INVOLVEMENT, SELF-PERCEPTIONS, AND SEXUALITY

I AM BEING ASKED TO READ THE FOLLOWING MATERIAL TO ENSURE THAT I AM INFORMED OF THE NATURE OF THIS RESEARCH STUDY AND OF HOW I WILL PARTICIPATE IN IT, IF I CONSENT TO DO SO. SIGNING THIS FORM WILL INDICATE THAT I HAVE BEEN SO INFORMED AND THAT I GIVE MY CONSENT. FEDERAL REGULATIONS REQUIRE WRITTEN INFORMED CONSENT PRIOR TO PARTICIPATION IN THIS RESEARCH STUDY SO THAT I CAN KNOW THE NATURE AND RISKS OF MY PARTICIPATION AND CAN DECIDE TO PARTICIPATE OR NOT PARTICIPATE IN A FREE AND INFORMED MANNER.

PURPOSE:

I am being invited to participate voluntarily in the above-titled research project. The purpose of this project is to gain an understanding of young women's personal experiences, opinions, and feelings regarding their participation in sports during their high school years, with a particular emphasis on the impact of such participation on their sexual behavior/health and self-perceptions. The following topics will be emphasized in the questionnaire: (a) sports involvement during high school; (b) body orientation; (c) discussions with coaches about health-related issues, and (d) sexual risk-taking behavior, sexual/reproductive health, and sexual health-seeking behavior.

SELECTION CRITERIA:

I am being invited to participate because I am an 18- or 19-year-old female freshman college student at the University of Arizona. Approximately 150 subjects will be enrolled in this study.

PROCEDURES:

If I agree to participate, I will be asked to consent to the following: to complete a questionnaire and return it in the provided pre-stamped, pre-addressed envelope. The questionnaire will take approximately 30 minutes to complete. My participation is voluntary, I may choose not to answer any questions, and I am free to withdraw from the project at any time. I must return the blue information sheet in the provided envelope in order to receive compensation for my participation.

RISKS:

Although no serious risks are likely, my participation in this research may involve some minor risks. For example, some topics in the questionnaire (e.g., personal issues my coach has discussed with me, my sexual risk-taking behavior) may lead to temporary feelings of sadness, anxiety, or discomfort. Although strong feelings of sadness, anxiety, or discomfort are very unlikely, I may contact the principal investigator for a referral list of agencies and behavioral/mental health professionals should those feelings occur. I may terminate my participation in this study at any time and that I may choose not to answer any questions. There is also risk that information could be disclosed to outsiders; however, the principal investigator has taken appropriate steps to prevent this from happening (see "Confidentiality" section below).

BENEFITS:

No direct benefit from my participation can be guaranteed.

CONFIDENTIALITY:

No names will appear on the questionnaires. Instead, code numbers will be used to label each questionnaire. *However, information forms do contain participant names and code numbers.* To protect my privacy, questionnaires and information forms will be secured in separate locked files (so that identifiers will not be kept with the data) with access restricted to the principal investigator (Stephanie Jacobs, Ph.D. Candidate) and one University faculty member (Susan Silverberg Koerner, Ph.D.). The results of this project may be published at a later date or presented at educational seminars and lectures; however, under no circumstances will identifying information be used. The data will be maintained indefinitely and may be used for future research only if approved by the Institutional Review Board when the new study is submitted for review.

PARTICIPATION COSTS AND SUBJECT COMPENSATION:

There are no costs to me beyond the time involvement as a result of participation in this project. For sending in my completed questionnaire, I will receive \$5 and will be entered in a drawing for a chance to win a \$50 gift certificate to the University of Arizona bookstore. To be eligible for the drawing, I must send in my completed questionnaire by October 31, 2000.

CONTACTS:

I can obtain further information from the principal investigator, Stephanie Jacobs, Ph.D. Candidate, at (520) 621-7127. If I have questions concerning my rights as a research subject, I may call the Human Subjects Committee office at the University of Arizona at (520) 626-6721.

AUTHORIZATION:

BEFORE GIVING MY CONSENT BY SIGNING THIS FORM, THE METHODS, INCONVENIENCES, RISKS, AND BENEFITS HAVE BEEN EXPLAINED TO ME AND MY QUESTIONS HAVE BEEN ANSWERED. I MAY ASK QUESTIONS AT ANY TIME AND I AM FREE TO WITHDRAW FROM THE PROJECT AT ANY TIME WITHOUT CAUSING BAD FEELINGS. MY PARTICIPATION IN THIS PROJECT MAY BE ENDED BY THE INVESTIGATOR OR BY THE SPONSOR FOR REASONS THAT WOULD BE EXPLAINED. NEW INFORMATION DEVELOPED DURING THE COURSE OF THIS STUDY WHICH MAY AFFECT MY WILLINGNESS TO CONTINUE IN THIS RESEARCH PROJECT WILL BE GIVEN TO ME AS IT BECOMES AVAILABLE. THIS CONSENT FORM WILL BE FILED IN AN AREA DESIGNATED BY THE HUMAN SUBJECTS COMMITTEE WITH ACCESS RESTRICTED TO THE PRINCIPAL INVESTIGATOR, Stephanie Jacobs, Ph.D. Candidate, OR AUTHORIZED REPRESENTATIVE OF The Division of Family Studies and Human Development. I DO NOT GIVE UP ANY OF MY LEGAL RIGHTS BY SIGNING THIS FORM. A COPY OF THIS SIGNED CONSENT FORM WILL BE GIVEN TO ME.

 Subject's Signature

Please PRINT Name

Date

INVESTIGATOR'S AFFIDAVIT

I have carefully explained to the subject the nature of the above project. I hereby certify that to the best of my knowledge the person who is signing this consent form understands clearly the nature, demands, benefits, and risks involved in her participation and her signature is legally valid. A medical problem or language or educational barrier has not precluded this understanding.

 Signature of Investigator

Date

APPENDIX D: Questionnaire Cover

Code #: _____

**★ YOUNG WOMEN'S REFLECTIONS ON
SPORTS INVOLVEMENT,
SELF-PERCEPTIONS, AND SEXUALITY**

For this project, we are interested in learning about young women's feelings and thoughts about sports involvement, self-perceptions, and sexuality during their high school years. In order to learn more about young women's experience of sports involvement (including the impact of such involvement on young women's lives and self-views), we are asking traditionally-aged female freshmen to complete this survey. The survey includes questions about your experience of sports involvement, your views/feelings about your body, your sense of self-reliance, health-related discussions your coach has had with you, and your sexual health, sexual health-seeking behavior, and sexual risk-taking behavior. It should take you about 30 minutes to complete the survey.

After you have completed and returned the survey and the blue information form in the provided envelopes, we will send you \$5 for your time and effort and you will be entered in a drawing for a chance to win a \$50 gift certificate to the U of A bookstore (to be entered in the drawing, we must receive your completed survey by Oct. 31, 2000).

In order to protect your privacy, your name will not be attached to your answers; a code number will be used instead. All of the information we receive from you will be kept confidential and secured in locked files. The only people who will ever see the completed surveys are myself and one University faculty member. Under no circumstances will your identity be made known in these results. Keep in mind that your participation is strictly voluntary and that you may choose to not answer any questions or to discontinue your participation at any time.

We are also asking you to complete and return in the enclosed small white envelope the following forms: (a) the BLUE INFORMATION FORM – this form will help ensure that we send you a \$5 "Thank You" check and if you win the drawing, a \$50 gift certificate; and (b) the WHITE CONSENT FORM – by sending in this form, it indicates to us that you understand the nature of this project and the potential benefits and risks associated with this project and that you have given us permission to use your data when compiling results.

If you have any questions about this project, please feel free to call the principal investigator (Stephanie Jacobs, Ph.D. Candidate) at (520) 621-7127. If I am not available, please leave a message with the secretary and say that you are calling regarding the Young Women's Reflections on Sports Involvement, Self-Perceptions, and Sexuality Project. I will get back to you as soon as possible. If you have any questions concerning your rights as a research subject, you may call the Human Subjects Committee office at (520) 626-6721.

**THANK YOU FOR YOUR HELP!!
WE LOOK FORWARD TO RECEIVING YOUR COMPLETED SURVEYS!!**

Division of Family Studies and Human Development; University of Arizona
Family and Consumer Sciences 210; Tucson, AZ 85721-0033
Principal Investigator: Stephanie L. Jacobs, Ph.D. Candidate
Phone: (520) 621-7127

APPENDIX E: Sports Involvement Scale

SPORTS INVOLVEMENT

Note: If you did not participate in sports during your high school years (9th - 12th grades), please skip to page number 6

Instructions: We want to learn about young women's involvement in organized sports during high school. On the lines provided below, please list each of the different organized sports (school and club sports) you participated in during high school (9th - 12th grades). Also, next to each sport you list below, please circle the number that most closely represents the degree to which you felt invested in each sport (i.e., how much energy you put into each sport and how important/salient each sport was to you). In addition, please indicate the average number of hours per week in which you were involved in each sport (including games/matches, practice, and other sport-related activities), as well as the number of years in which you participated in each sport.

Sport	Degree of Investment				Number of hours per week	Number of years (seasons)
	A Little	Moderately	Quite a Bit	Extremely		
1. _____	1	2	3	4	_____	_____
2. _____	1	2	3	4	_____	_____
3. _____	1	2	3	4	_____	_____
4. _____	1	2	3	4	_____	_____
5. _____	1	2	3	4	_____	_____
6. _____	1	2	3	4	_____	_____

➡ At what age did you first participate in sports (please consider only the sports you listed above)? _____

APPENDIX F: Functional Body Orientation Scale

BODY ORIENTATION

Please indicate the extent to which you agree with each of following statements. Please *circle* the number that best matches your response.

	Strongly Disagree	Moderately Disagree	Slightly Disagree	Slightly Agree	Moderately Agree	Strongly Agree
How good I feel about my body depends a lot on how I look.	1	2	3	4	5	6
How good I feel about my body depends a lot on how well I do in physical activities (e.g., sports).	1	2	3	4	5	6
How good I feel about my body depends a lot on compliments I receive about my looks.	1	2	3	4	5	6
How good I feel about my body depends a lot on what my body can do.	1	2	3	4	5	6
How good I feel about my body depends a lot on whether people consider me attractive/good-looking.	1	2	3	4	5	6
It is important to me to feel capable/competent about my body.	1	2	3	4	5	6
One of the most important reasons why people should take care of their bodies is so they can look good.	1	2	3	4	5	6
One of the most important reasons why people should take care of their bodies is so they can do well in physical activities (e.g., sports).	1	2	3	4	5	6
One of the most important characteristics of a person's body is its decorative/aesthetic appeal.	1	2	3	4	5	6
The ability to use one's body to achieve physical goals is one of the most important functions of a body.	1	2	3	4	5	6

APPENDIX G: Self-Empowerment/Efficacy Scales

PERSONALITY

To what extent does each of the following personality characteristics describe *you*? Please circle the number that most closely matches your response.

	Not at All	A Little	Moderately	Quite a Bit	Extremely
Self-reliant	0	1	2	3	4
Yielding	0	1	2	3	4
Helpful	0	1	2	3	4
Defends own beliefs	0	1	2	3	4
Cheerful	0	1	2	3	4
Moody	0	1	2	3	4
Independent	0	1	2	3	4
Shy	0	1	2	3	4
Conscientious	0	1	2	3	4
Athletic	0	1	2	3	4
Affectionate	0	1	2	3	4
Theatrical	0	1	2	3	4
Assertive	0	1	2	3	4
Flatterable	0	1	2	3	4
Happy	0	1	2	3	4
Strong personality	0	1	2	3	4
Loyal	0	1	2	3	4
Unpredictable	0	1	2	3	4
Forceful	0	1	2	3	4
Feminine	0	1	2	3	4
Analytical	0	1	2	3	4
Sympathetic	0	1	2	3	4
Jealous	0	1	2	3	4
Has leadership abilities	0	1	2	3	4
Sensitive to others' needs	0	1	2	3	4
Truthful	0	1	2	3	4
Reliable	0	1	2	3	4
Willing to take risks	0	1	2	3	4

	Not at All	A Little	Moderately	Quite a Bit	Extremely
Understanding	0	1	2	3	4
Secretive	0	1	2	3	4
Makes decisions easily	0	1	2	3	4
Compassionate	0	1	2	3	4
Sincere	0	1	2	3	4
Self-sufficient	0	1	2	3	4
Eager to soothe hurt feelings	0	1	2	3	4
Conceited	0	1	2	3	4
Dominant	0	1	2	3	4
Soft spoken	0	1	2	3	4
Likable	0	1	2	3	4
Masculine	0	1	2	3	4
Warm	0	1	2	3	4
Solemn	0	1	2	3	4
Willing to take a stand	0	1	2	3	4
Friendly	0	1	2	3	4
Aggressive	0	1	2	3	4
Gullible	0	1	2	3	4
Inefficient	0	1	2	3	4
Acts as a leader	0	1	2	3	4
Childlike	0	1	2	3	4
Adaptable	0	1	2	3	4
Individualistic	0	1	2	3	4
Does <u>not</u> use harsh language	0	1	2	3	4
Tender	0	1	2	3	4
Unsystematic	0	1	2	3	4
Competitive	0	1	2	3	4
Loves children	0	1	2	3	4
Tactful	0	1	2	3	4
Ambitious	0	1	2	3	4
Gentle	0	1	2	3	4
Conventional	0	1	2	3	4

SELF-RELIANCE

Please read each item carefully and then *circle* the number that best matches your response.

	Strongly Disagree	Slightly Disagree	Slightly Agree	Strongly Agree
If someone hasn't been chosen as the leader, they shouldn't suggest how things should be done.	1	2	3	4
In a group, I prefer to let other people make the decisions.	1	2	3	4
The main reason I'm not more successful is that I have bad luck.	1	2	3	4
When things go well for me, it is usually not because of anything I myself actually did.	1	2	3	4
I feel very uncomfortable if I disagree with what my friends think.	1	2	3	4
People can't be expected to make a success of themselves if they had a bad childhood.	1	2	3	4
When things have gone wrong for me, it is usually because of something I couldn't do anything about.	1	2	3	4
Luck decides most things that happen to me.	1	2	3	4
It is best to agree with others, rather than say what you really think, if it will keep the peace.	1	2	3	4
I don't know whether I like my new clothes or shoes until I find out what my friends think.	1	2	3	4

SELF-EFFICACY

Please read each statement carefully and then *circle* the number that best matches your response.

	Strongly Disagree	Slightly Disagree	Slightly Agree	Strongly Agree
When I make plans, I am certain I can make them work.	1	2	3	4
One of my problems is that I cannot get down to work when I should.	1	2	3	4
If I can't do a job the first time, I keep trying until I can.	1	2	3	4
When I set important goals for myself, I rarely achieve them.	1	2	3	4
I give up on things before completing them.	1	2	3	4
I avoid facing difficulties.	1	2	3	4
If something looks too complicated, I will not even bother to try it.	1	2	3	4
When I have something unpleasant to do, I stick to it until I finish it.	1	2	3	4
When I decide to do something, I go right to work on it.	1	2	3	4
When trying to learn something new, I soon give up if I am not initially successful.	1	2	3	4
When unexpected problems occur, I don't handle them well.	1	2	3	4
I avoid trying to learn new things when they look difficult for me.	1	2	3	4
Failure just makes me try harder.	1	2	3	4
I feel insecure about my ability to do things.	1	2	3	4
I am a self-reliant person.	1	2	3	4
I give up easily.	1	2	3	4
I do not seem capable of dealing with most problems that come up in life.	1	2	3	4

APPENDIX H: Sexual Health-Related Information/Motivation via Coach Scale

COACH TALK

Instructions: For this set of questions, think back to things your coach(es) talked to you about during your high school years (grades 9 - 12).

Part 1. Please read each column heading carefully, then check the choice that best describes how often your coaches (all your coaches combined) talked to you about each of the following topics.

Part 2. For each topic, in the column labeled "M/F," please write an "M" or an "F" to indicate whether the coach who talked to you the *most* about that topic was male ("M") or female ("F"). If your coaches never talked to you about a particular topic, you can leave the "M/F" column blank for that topic.

<i>During your high school years, how often did your coach(es) talk to you about each of the following topics?</i>	Never	Once in a While	Fairly Often	Very Often	M/F
1. Problems I had with my friends.					
2. School subjects I found difficult.					
3. Which sexual behaviors are safe.					
4. A guy who I liked very much.					
5. Things I had done that I regretted.					
6. Birth control information.					
7. My diet (e.g., advice about healthy/unhealthy foods).					
8. Ways to avoid pregnancy or STDs.					
9. Safety issues (e.g., wearing a seat belt or helmet).					
10. Negative consequences of sexual activity.					
11. Sleep habits (e.g., making sure I got enough sleep).					
12. Issues I had with my boss.					
13. My relationship with my parents.					

APPENDIX I: Sexual Risk-Taking Behavior, Sexual/Reproductive Health, and
Sexual/Reproductive Health-Seeking Behavior Scales; Sexual Orientation Questions;
and Non-Intercourse Sexual Behavior Questions

THE REALLY PERSONAL STUFF ABOUT YOU

Please think about the following questions carefully and *circle* the number that best matches your response. Remember that your answers are confidential.

	NO	YES
1. Have you ever kissed someone on the mouth?	1	2
2. Have you ever open-mouth kissed someone?	1	2
3. Have you ever fooled around (sexually) above the waist?	1	2
4. Have you ever fooled around (sexually) below the waist?	1	2
5. Have you ever had sexual intercourse with a male?	1	2
6. Have you had sexual intercourse in the last 3 months?	1	2
7. Have you ever been treated by a doctor for an STD (e.g., chlamydia, gonorrhea)	1	2

→ If you answered "no" to question number 5 above (you circled "1"), please skip to question number 23 on page 14 and finish the remainder of the questionnaire.

→ If you answered "yes" to question number 5 above (you circled "2"), please continue with number 8 below and finish the remainder of the questionnaire.

8. How old were you the first time you had sexual intercourse? _____

9. How many people have you had sexual intercourse with? _____

10. How many people have you had sexual intercourse with during the last three months? _____

11. What method(s) of birth control did you use to prevent pregnancy the first time you had sexual intercourse? (check *all* that apply)
- ☐ No method was used
☐ Birth control pill
☐ Condom
☐ Some other method (e.g., diaphragm) / If yes, please specify _____
☐ I am not sure
12. What method(s) of birth control did you use to prevent pregnancy the last time you had sexual intercourse? (check *all* that apply)
- ☐ No method was used
☐ Birth control pill
☐ Condom
☐ Some other method (e.g., diaphragm) / If yes, please specify _____
☐ I am not sure
13. Think about the first time you had sexual intercourse. Did you drink alcohol or use drugs just prior to that experience?
- ☐ Yes, alcohol only
☐ Yes, drugs only
☐ Yes, both drugs and alcohol
☐ No, neither drugs nor alcohol were used when I had sex the first time
14. Think about the last time you had sexual intercourse. Did you drink alcohol or use drugs just prior to that experience?
- ☐ Yes, alcohol only
☐ Yes, drugs only
☐ Yes, both drugs and alcohol
☐ No, neither drugs nor alcohol were used when I had sex the last time
15. How many times, if ever, have you been pregnant?
☐ 0 times	☐ 2 or more times
☐ 1 time	☐ Not sure
16. If you have children of your own, how many have you given birth to?
☐ I have no children	☐ 2 children
☐ 1 child	☐ 3 or more children
17. When you engage in sexual intercourse with your partner(s), how often does your partner(s) use condoms (rubbers)?
☐ Never	☐ Most of the time
☐ Some of the time	☐ Every time
☐ About ½ of the time	

18. When you engage in sexual intercourse with your partner(s), how often do you and/or your partner(s) use some **other** form of birth control besides condoms (e.g., birth control pills, diaphragm, foam)?

☐	Never	☐	Most of the time
☐	Some of the time	☐	Every time
☐	About ½ of the time		

19. Have you discussed using condoms or other contraception with your most recent sexual partner?

☐ Yes ☐ No

20. Have you ever had an HIV test?

☐ Yes ☐ No

21. Have you discussed the sexual history of your most recent sexual partner with him/her?

☐ Yes ☐ No

22. Have you discussed the HIV status of your most recent sexual partner with him/her?

☐ Yes ☐ No

23. Have you ever discussed reproductive or sexual health-related precautions/issues with a doctor or health professional?

☐ Yes ☐ No

24. Have you ever had a gynecological exam?

☐ Yes ☐ No

25. In the last 12 months, how frequently have you had a sexual encounter with someone of the same sex?

☐	Never	☐	Three to five times
☐	Once or twice	☐	More than five times

26. My sexual orientation is...

☐ Heterosexual (Straight)
☐ Homosexual (Lesbian)
☐ Bisexual
☐ None of these apply to me / I identify myself as: _____

APPENDIX J: Demographic Questions

SOME BASIC INFORMATION

1. GENDER (check one)

- ☐ Female
☐ Male

→ If you checked "male," please stop. This questionnaire is for females only.

2. AGE: _____

3. ETHNICITY (check one):

☐ White (Caucasian, Non-Hispanic)	☐ Native-American
☐ Hispanic	☐ Asian-American
☐ African-American	☐ Other (please specify _____)

4. YOUR CURRENT RELATIONSHIP STATUS (check one):

- ☐ Single, not dating
☐ Single, dating casually
☐ Single, dating seriously (dating the same person for more than 3 months)
☐ Cohabiting (living with your significant other)
☐ Married

5. YOUR PARENTS' CURRENT MARITAL STATUS (check one):

- ☐ My parents are currently married to each other
☐ My parents are currently separated from each other
☐ My parents are divorced from each other
☐ My parents were never married to each other

6. What is the highest LEVEL OF EDUCATION your MOTHER has completed (check one)?

☐ 8 th grade or less	☐ graduate from 2-year college or technical school
☐ some high school	☐ college graduate from 4-year college/university
☐ high school graduate	☐ some education beyond college/university
☐ some college or vocational/tech school	☐ graduate or professional degree (e.g., M.S., M.D.)

7. What is the highest LEVEL OF EDUCATION your FATHER has completed (check one)?

☐ 8 th grade or less	☐ graduate from 2-year college or technical school
☐ some high school	☐ college graduate from 4-year college/university
☐ high school graduate	☐ some education beyond college/university
☐ some college or vocational/tech school	☐ graduate or professional degree (e.g., M.S., M.D.)

8. Have you ever been eligible for government-subsidized free or reduced lunch at school (check one)?

- ☐ Yes
☐ No

APPENDIX K: Open-Ended Questions

Instructions: Look back to topic numbers 3, 6, 8, and 10 in the table on the previous page. If your coach talked to you about any of those topics, either "fairly often" or "very often," please write the topics on the lines provided below and then describe (a) some of the details of the talks your coach had with you about that topic, (b) your thoughts and feelings about those talks, and (c) characteristics of the coach (e.g., gender, approachability) who talked to you about that topic. If you marked the column "fairly often" or "very often" for more than two of the indicated topics (topic numbers 3, 6, 8, and 10), please describe the two that are most salient or memorable to you.

Topic #1 _____

Topic #2 _____

Instructions: If you participated in sports during your high school years (9th-12th grades), please describe 3 ways your sports involvement has influenced your life.

a.

b.

c.

Instructions: If you participated in sports during your high school years (9th-12th grades), in the space provided below, please discuss what you personally gained or lost from your involvement in sports.

Instructions: In the space provided below, please describe: (a) the way you view/feel about your body and (b) three personal experiences that you think have impacted the way you view/feel about your body.

(a)

(b1)

(b2)

(b3)

Instructions: In the space provided below, please answer the following question: If a 14-year-old girl who was about to enter high school as a freshman came to you for advice about whether to join/try out for a sports teams, what would you tell her and why?

Instructions: Please use this box to write any comments you have for us.

APPENDIX L: Human Subjects Approval Form

Human Subjects Committee
25 July 2000

1411 E. Mabel Street
PO Box 210137
Tucson, AZ 85721-0137
(520) 616-6711

Stephanie Jacobs, M.S.
Advisor: Susan Koerner, Ph.D.
School of Family/Consumer Resources
Division of Family Studies
PO BOX 210033

RE: HSC #00-152 YOUNG WOMEN'S SPORTS INVOLVEMENT AND SEXUAL
BEHAVIOR/HEALTH: A PROCESS-LEVEL INVESTIGATION

Dear Ms. Jacobs:

We received your 18 July 2000 letter and accompanying revised consent form/questionnaire cover sheet/participant information form and copy of oral recruitment script for the above referenced project. All of the conditions as outlined in our 30 May 2000 and 11 July 2000 letters to you (and also 6/19/00 e-mail (in response to your 6/19/00 letter relevant to initial review of 5/30/00)) have been addressed in your 23 June 2000 and 18 July 2000 responses to Committee. Therefore full Committee approval for this subjects-at-risk project is granted effective 25 July 2000 for a period of one year. Note: The approved/date stamped consent form to be used for subject accrual is enclosed.

The Human Subjects Committee (Institutional Review Board) of the University of Arizona has a current assurance of compliance, number M-1233, which is on file with the Department of Health and Human Services and covers this activity.

Approval is granted with the understanding that no further changes or additions will be made either to the procedures followed or to the consent form(s) used (copies of which we have on file) without the knowledge and approval of the Human Subjects Committee and your College or Departmental Review Committee. Any research related physical or psychological harm to any subject must also be reported to each committee.

A university policy requires that all signed subject consent forms be kept in a permanent file in an area designated for that purpose by the Department Head or comparable authority. This will assure their accessibility in the event that university officials require the information and the principal investigator is unavailable for some reason.

David G. Johnson, M.D.
Chairman
Human Subjects Committee

DGJ:rs

cc: Departmental/College Review Committee

References

- Aaron, D.J., Dearwater, S.R., Anderson, R., Olson, T., Kriska, A.M., & LaPorte, R.E. (1995). Physical activity and the initiation of high-risk health behaviors in adolescents. Medicine and Science in Sports and Exercise, 27, 1639-1645.
- Baron, R.M., & Kenny, D.A. (1986). The moderator-mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. Journal of Personality and Social Psychology, 51, 1173-1182.
- Basow, S.A., & Rubin, L.R. (1998). Gender influences on adolescent development. In N. Johnson, M. Roberts, & J. Worell (Eds.). Beyond appearance: A new look at adolescent girls. Washington D.C.: APA.
- Baumert, P.W., Henderson, J.M., & Thompson, N.J. (1998). Health risk behaviors of adolescent participants in organized sports. Journal of Adolescent Health, 22, 460-465.
- Bem, S.L. (1974). The measurement of psychological androgyny. Journal of Consulting and Counseling Psychology, 42, 155-162.
- Benda, B., & DiBlasio, F.A. (1994). An integration of theory: Adolescent sexual contacts. Journal of Youth and Adolescence, 23, 403-420.
- Blinde, E.M., Taub, D.E., & Han, L. (1993). Sport participation and women's personal empowerment: Experiences of the college athlete. Journal of Sport and Social Issues, 17, 47-60.
- Brady, M. (1998). Laying the foundation for girls' healthy futures: Can sports play a role? Studies in Family Planning, 29, 79-82.
- Brener, N.D., Collins, J.L., Kann, L., Warren, C.W., & Williams, B.L. (1995). Reliability and the Youth Risk Behavior Survey Questionnaire. American Journal of Epidemiology, 141, 575-580.
- Brooks-Gunn, J., Burrow, C., & Warren, M.P. (1988). Attitudes towards eating and body weight in different groups of adolescent female athletes. International Journal of Eating Disorders, 7, 749-757.
- Brooks-Gunn, J., & Paikoff, R. (1993). "Sex is a gamble, kissing is a game": Adolescent sexuality and health promotion. In S.G. Millstein, A.C. Peterson, & E.O. Nightingale (Eds.), Promoting the health of adolescents: New Directions for the twenty-first century (pp. 180-208). New York: Oxford University Press.

Brown, B.B. (1990). Peer groups and peer cultures. In S.S. Feldman & G.R. Elliot (Eds.), At the threshold: The developing adolescent (pp. 171-196). Cambridge, MA: Harvard University Press.

Brown, L.M., & Gilligan, C. (1992). Meeting at the crossroads: Women's psychology and girls' development. New York: Ballentine Books.

Brown, T.A., Cash, T.F., & Mikulka, P.J. (1990). Attitudinal body-image assessment: Factor analysis of the Body-Self Relations Questionnaire. Journal of Personality Assessment, 55, 135-144.

Butcher, J.E. (1989). Adolescent girls' sex role development: Relationship with sport participation, self-esteem, and age at menarche. Sex Roles, 20, 575-593.

Cahn, S. (1994). Coming on strong: Gender and sexuality in twentieth-century women's sport. New York: The Free Press.

Caspi, A., & Moffitt, T. (1991). Individual differences and personal transitions: The sample case of girls at puberty. Journal of Personality and Social Psychology, 61, 157-168.

Center for Disease Control (1993). [Http://www.gov/needphp/dash/ahson/forward.htm](http://www.gov/needphp/dash/ahson/forward.htm).

Decision and Planning Support, The University of Arizona (1999). Student Characteristics and Trends. [Http://daps.arizona.edu](http://daps.arizona.edu).

Eccles, J.S., & Barber, B.L. (1999). Student council, volunteering, basketball, or marching band: What kind of extracurricular involvement matters? Journal of Adolescent Research, 14, 10-43.

Fine, M. (1988). Sexuality, schooling, and adolescent females: The missing discourse of desire. Harvard Educational Review, 58, 29-53.

Ge., X., & Conger, R., & Elder, G., Jr. (1996). Coming of age too early: Pubertal influences on girls' vulnerability to psychological distress. Child Development, 67, 3386-3400.

Gilroy, S. (1997). Working on the body: Links between physical activity and social power. In G. Clarke & B. Hamberstone (Eds.). Researching women in sport. London: MacMillan Press Ltd.

Gottfredson, M., & Hirschi, T. (1990). A general theory of crime. Stanford, CA: Stanford University Press.

Greenberger, E., Josselson, R., Knerr, G., & Knerr, B. (1974). The measurement and structure of psychosocial maturity. Journal of Youth and Adolescence, 4, 127-143.

Haffner, D.W. (1998). Facing facts: Sexual health for American adolescents. Journal of Adolescent Health, 22, 453-459.

Harris, M.B., & Greco, D. (1990). Weight control and weight concern in competitive female gymnasts. Journal of Sport and Exercise Psychology, 12, 427-433.

Henry, B., Moffitt, T., Caspi, A., Langley, J., & Silva, P. (1994). On the "remembering of things past": A longitudinal evaluation of the retrospective method. Psychological Assessment, 6, 92-101.

Hill, C.E., Thompson, B.J., & Williams, E.N. (1997). A guide to conducting consensual qualitative research. The Counseling Psychologist, 25, 517-572.

Hirschi, T. (1969). Cause of delinquency. Berkeley: University of California Press.

Holmbeck, G.N. (2000). Post-hoc probing of significant moderational and mediational effects in studies of pediatric populations. Manuscript submitted for publication.

Hovell, J.G., Brindis, C.D., & Gleit, D.A. (1999). Pregnancies averted among U.S. teenagers by the use of contraceptives. Family Planning Perspectives, 31, 29-34.

Jaffee, L., & Lutter, J.M. (1985). Adolescent girls: Factors influencing high and low body image. Melpomene: A Journal for Women's Health Research, 14, 14-22.

Jaffee, L., & Manzer, R. (1992). Girls' perspectives: Physical activity and self-esteem. Melpomene, A Journal for Women's Health Research, 11, 14-23.

Jaffee, L., & Ricker, S. (1993). Physical activity and self-esteem in girls: The teen years. Melpomene: A Journal for Women's Health Research, 12, 19-26.

Jaffee, L., & Wu, P. (1996). After school activities and self-esteem in adolescent girls. Melpomene: A Journal for Women's Health Research, 15, 18-25.

Kahn, T.R., Kalsbeek, W.O., & Hofferth, M. (1998). National estimates of teenage sexual activity: Evaluating the comparability of three national surveys. Demography, 25, 198-202.

LaRossa, R., & Reitzes, D. (1993). Symbolic interactionism and family studies. In P. Boss, W. Doherty, R. LaRossa, W. Schumm, S. Steinmetz (Eds.), Sourcebook of family theories and methods: A contextual approach (pp. 135-163). New York: Plenum.

Lauritsen, J.L. (1994). Explaining race and gender differences in adolescent sexual behavior. Social Forces, 72, 859-884.

Lincoln, Y.S., & Guba, E. (1985). Naturalistic Inquiry. Beverly Hills, CA: Sage.

Magnusson, D., Stattin, H., & Allen, V. (1986). Differential maturation among girls and its relation to social adjustment in a longitudinal perspective. In P. Baltes, D. Featherman, & R. Lerner (Eds.), Life Span Development and Behavior (Vol. 7). Hillsdale, NJ: Earlbaum.

Malina, R.M. (1983). Menarche in athletes: A synthesis and hypothesis. Annals of Human Biology, 10, 1-24.

McAuley, E. (1994). Physical activity and psychosocial outcomes. In C. Bouchard, & R. Shepard (Eds.), International proceedings and consensus statement (pp. 551-568). Champaign, IL: Human Kinetics Publishers.

Melnick, M., Sabo, D., Miller, K., Farrell, M., & Barnes, G.O. (1999). Sports and pregnancy: Prevention among girls. Melpomene: A Journal for Women's Health Research, 18, 23-38.

Melnick, M., Sabo, D., & Vanfossen, B. (1992). Educational effects of interscholastic athletic participation on African-American and Hispanic youth. Adolescence, 7, 295-308.

Miles, M.B., & Huberman, A.M. (1994). Qualitative data analysis: An expanded sourcebook (2nd Ed.). Thousand Oaks, CA: Sage.

Miller, J.L., & Levy, G.D. (1996). Gender role conflict, gender-typed characteristics, self-concepts, and sport socialization in female athletes and non-athletes. Sex Roles, 35, 111-122.

Miller, K.E., Sabo, D.A., Farrell, M.P., Barnes, G.M., & Melnick, M.J. (1998). Athletic participation and sexual behavior in adolescents: The different worlds of boys and girls. Journal of Health and Social Behavior, 39, 108-123.

Morgan, D.L. (1997). Qualitative content analysis: A guide to paths not taken. Qualitative Health Research, 3, 112-121.

National Federation of State High Schools Association (1997). NFHS Handbook, 1997-1998. Kansas City, MO: NFSHSA.

Nelson, M.B. (1991). Are we winning yet? How women are changing sports and sports are changing women. New York: Random House.

Newman, I., & Benz, C.R. (1998). Qualitative-quantitative research methodology: Exploring the interactive continuum. Carbondale, IL: Southern Illinois University Press.

Officer, S.A., & Rosenfield, L.B. (1985). Self-disclosure to male and female coaches by female high school athletes. Journal of Sport Psychology, 4, 360-370.

Petersen, A. (1982). The Self-Image Questionnaire for Young Adolescents.

Pipher, M. (1994). Reviving Ophelia: Saving the selves of adolescent girls. New York: Ballantine Books.

Plaisted, V. (1995). Gender and sport. In T. Morris, & J. Summers (Eds.), Sport psychology: Theory, applications and issues (pp. 538-574). New York: John Wiles & Sons.

Rome, E.S., Rybicki, L.A., & Durant, R.H. (1998). Pregnancy and other risk behaviors among adolescent girls in Ohio. Journal of Adolescent Health, 22, 50-55.

Rosenthal, D., Moore, S., & Flynn, I. (1991). Adolescent self-efficacy, self-esteem, and sexual risk-taking. Journal of Community and Applied Social Psychology, 1, 77-88.

Ryckman, R.M. & Hamel, J. (1992). Female adolescents' motives related to involvement in organized team sports. International Journal of Sport Psychology, 23, 147-160.

Sabo, D.G., Farrell, M.P., Melnick, M.J., & Barnes, G.M. (1996). High school athletic participation, sexual behavior, and adolescent pregnancy: A preliminary analysis. The New York State Research Institute on Addictions and the Department of Sociology, State University of New York at Buffalo, research funded by the National Institute on Alcohol Abuse and Alcoholism.

Sabo, D.F., Miller, K.E., Farrell, M.P., Melnick, M.J., & Barnes, G.M. (1999). High school athletic participation, sexual behavior, and adolescent pregnancy: A regional study. Journal of Adolescent Health, 25, 207-216.

Savage, M.P., & Holcolmb, D.P. (1999). Adolescent female athletes' sexual risk-taking behaviors. Journal of Youth and Adolescence, 28, 595-602.

Seidman, I.E. (1991). Interviewing as qualitative research. New York: Teachers College Press.

Sexuality Information and Education Council of the United States (2001). [Http://www.siecus.orgs/pubs/fact/fact001.html](http://www.siecus.orgs/pubs/fact/fact001.html).

Sherer, M., Maddux, J., Mercandante, B., Prentice-Dunn, S, Jacobs, B., & Rogers. (1982). The Self-Efficacy Scale: Construction and validation. Psychological Reports, 51, 663-671.

Smith, R.E., Leffingwell, T.R., & Ptacek, J.T. (1999). Can people remember how they coped? Factors associated with discordance between same-day and retrospective reports. Journal of Personality and Social Psychology, 76, 1050-1061.

Steiner, H., McQuivey, R., Pavelski, R., Pitts, T., & Kraemer, H. (2000). Adolescents and sports: Risk or benefit? Clinical Pediatrics, 39, 161-166.

Stice, E. (1994). Review of the evidence for a sociocultural model of bulimia nervosa and an exploration of the mechanisms of action. Clinical Psychology Review, 14, 633-661.

The Allen Guttmacher Institute (1999). Facts in brief: Teen sex and pregnancy. Washington D.C.: Allen Guttmacher Institute.

The National Campaign to Prevent Teen Pregnancy (1999). Fact sheet: Teen pregnancy and childbearing in Arizona. Washington D.C.: The National Campaign to Prevent Teen Pregnancy.

The Wilson Report (1998). Moms, Dads, Daughters, and Sports. Wilson Sporting Goods, Co., in cooperation with the Women's Sports Foundation.

The 1998 Women's Sports Foundation Report: Sport and Teen Pregnancy. East Meadow, NY: Women's Sports Foundation.

Tolman, D.L. (1999). Femininity as a barrier to positive sexual health for adolescent girls. Journal of American Medical Women's Association, 54, 133-138.

Weber, R. (1990). Basic content analysis (2nd ed.). Newbury Park, CA: Sage.

Wichstrom, L., Skogen, K., & Oia, T. (1994). Social and cultural factors related to eating problems among adolescents in Norway. Journal of Adolescence, 17, 471-482.

Willette, J.B., & Sawyer, A.G. (1996). Cross-domain analyses of change over time: Combining growth modeling covariance structure analysis. In G.A. Marconlides, & R.E. Schumaker (Eds.), Advanced structural equation modeling: Issues and techniques. Mahwah, NJ: Lawrence Erlbaum.

Youth Risk Behavior Surveillance - United States (1999). [Http://www.cdc.gov/epo/mmwr/previous/mmwrhtml/ss4905a1.htm](http://www.cdc.gov/epo/mmwr/previous/mmwrhtml/ss4905a1.htm).

Zill, N., Nord, C., & Loomis, L. (1995). Adolescent time use, risky behavior, and outcomes: An analysis of national data. Rockville, MD: Westat Inc.

Zimmerman, J., & Reavill, G.O. (1998). Raising our athletic daughters: How sports can build self-esteem and save girls' lives. New York: Doubleday.