Exploring the Role of Personal Agency in Adolescent Sexual Health:

Goal Pursuit Skills and the Use of Protection[1]

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Miriam R. Arbeit

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ADVISOR: Richard M. Lerner

Abstract

Personal sexual agency involves an individual's ability to take action in pursuit of a personal sexual goal. The exercise of such agency may be particularly important for sexual health. Drawing on theories that frame adolescent sexual behavior in the context of normative development, this study used Grade 11 data from the 4-H Study of Positive Youth Development to assess the relationship between goal pursuit skills and the consistent use of protection during sexual activity among sexually active American adolescents ($N = 242$). As predicted, results of logistic regression indicated that higher levels of goal pursuit skills were significantly related to sexually active youth's consistent use of protection during sexual activity, and notably so for female youth. These findings have important implications for the design and implementation of public health and education initiatives as well as for future study on normative sexuality development and positive youth development.

This study explores the relationship between adolescents' goal pursuit skills and their sexual health. Drawing on theories that frame adolescent sexual behavior in the context of normative development, data from the 4-H Study of Positive Youth Development (PYD; e.g., Lerner et al., 2005; Bowers, Li, Kiely, Brittian, Lerner, & Lerner, 2010) were analyzed to explore how individual-level components of adaptive developmental regulations, such as goal pursuit skills (Brandtstadter, 2006), contribute to sexual health. Accordingly, this paper begins with a review of the theoretical basis for this study. Next, I will review the literature that addresses the role of personal agency and goal pursuit skills in the process of normative sexuality development and sexual health. The basis for applying the 4-H dataset to the key questions identified in the literature will then be explained, along with the questions to be addressed in the present research through the use of this data set.

The theoretical basis for this study is formed by applying relational developmental systems theory (RRDST) to the field of positive adolescent sexual development. RDST frames the study of mutually influential relations between individuals and their contexts, which constitute a system that can be assessed for indicators of adaptive development (Brandtstädter, 2006; Overton, 2010). The focus on adaptive developmental regulations integrates the three major branches of recent research on positive adolescent sexual development (Tolman & McClelland, 2011). The first branch is the study of sexual behavior, which addresses the sexual activities in which adolescents engage. Lining up this branch with the RDST focus on indicators of adaptive developmental regulations, this study highlights the consistent use of protection during sexual activity as a behavioral indicator of adaptive development in the domain of sexuality. The second branch of the field of positive adolescent sexual development is the study of sexual selfhood, which maps onto the RDST conception of the individual contributions to

adaptive developmental regulations. In this study, individual goal pursuit skills are used to indicate personal agency, which is a key aspect of sexual selfhood. The third branch of the field of positive adolescent sexual development is not measured directly in this study, but is considered as a potentially important element in understanding the findings. This branch is sexual socialization and relates to the contextual contributions discussed in RDST, such as family, school, and mentors.

Sexual Behavior in Adolescence

Adolescence is a period of intense change, in which healthy developmental outcomes require great adjustment both by youth and by key figures in their contexts (Lerner & Steinberg, 2009). In the miRDST of changes in cognitive and emotional functioning, new physical capacities emerge during puberty as youth begin to explore their thoughts and feelings related to sex and reproduction (Susman & Dorn, 2009). Adolescents need to use adaptive mechanisms to integrate these changes into their conception of themselves and their interactions with their world. Many important theoretical models (Diamond & Savin-Williams, 2009; Tolman & McClelland, 2011) and a burgeoning body of empirical literature (Schalet, 2004; Hacker, Brown, Cabral & Dodds, 2005; Impett, Schooler & Tolman, 2006) point to the need for a nuanced, multifaceted consideration of adolescent sexual health.

From a public health perspective, it is imperative to implement an approach that focuses both on helping adolescents develop the skills they need to engage in healthy behaviors if and when they have sex as well as supporting adolescents in choosing if and when *not* to have sex. In 2009, 46% of high school students in the United States reported ever having had sex. Of those students, 61% had used a condom the last time they had sex (Child Trends, 2011). These percentages demonstrate that American youth are, for the most part, willing and able to use

protection during sexual activity. However, not enough of them are doing so to avoid a progressive increase in the risk of sexually transmitted infections, in general, and of HIV, in particular. Unprotected sex also involves the risk of unwanted pregnancy. Almost one in five sexually active youth did not use any form of protection against pregnancy – neither a condom nor hormonal contraception – the last time they had sex (Child Trends, 2011). In the United States, 14.7% of women who are 15 to 17 years old and sexually active become pregnant each year (Finer, 2010). The consequence of teen pregnancy burdens females specifically and uniquely, and they face a very different set of physical, social, and emotional outcomes than their male sexual partners.

While unprotected sexual activity in adolescence can have sustained consequences, scholars have focused recently on another, potentially even more important, reason for working to describe, explain, and optimize adolescent sexuality development: Developing a healthy sexuality is a key developmental task of adolescence (Tolman, 2002) that forms the basis for healthy sexuality in adulthood (Diamond & Savin-Williams, 2009). Sexuality is a core aspect of human life (SIECUS, 2004), and every individual must engage in the process of sexuality development to become a healthy, fulfilled adult. Recognizing sexuality development as a critical task of adolescence requires approaching sexuality as a normative part of life that is neither inherently risky nor inherently positive. *All* adolescents must engage with the tasks of developing sexuality. Therefore, the question is not *will* adolescents be sexual but, rather, *how* can we promote optimal sexuality development and thereby facilitate healthy, adaptive functioning throughout adolescence and into adulthood (Diamond & Savin-Williams, 2009)?

In order to focus on sexuality as a normative aspect of life, our approach must recognize that sexuality development involves *both* an array of challenges, adversities, and vulnerabilities

and the potential for pleasure, intimacy and other positive experiences. As Tolman and

McClelland (2011) elaborate, this "both/ and" approach (p. 247) requires us to define sexuality

as normative, developmental, and contextualized. At the core of this approach is "a new image of

the young person who is making dynamic decisions regarding his or her sexuality" (Tolman &

McClelland, 2011, p. 246). This image of adolescents who make their own dynamic decisions

highlights that adolescents' capacity for sexual agency could be critical to our understanding of

positive, adaptive functioning in the domain of adolescent sexuality.

   *Developmental Systems Theory and Intentional Self Regulation*RDST points to the need

to understand the role of individual adolescents as producers of their own development, helping

us to better address the agentic young person. As conceptualized by RDST, individuals and their

contexts mutually influence and shape each other in various ways throughout the course of

development, which is represented as "individual ←→ context" relations (Brandtstädter, 2006).

The individual contributions to individual ←→ context relations are the intentional actions used

to regulate one's own behavior, termed intentional self regulation (ISR). Positive development

occurs when individuals engage in effective ISR: when they have and use the skills necessary to

plan their actions so they access resources from their contexts (termed "developmental assets;"

Benson, Scales, Hamilton, & Sesma, 2006) to support their positive development *and* maintain

or enhance the context that is supporting them. As such, ISR represents the exercise of individual

agency through purposeful actions designed to align the demands and resources of the context

with personal goals in the service of better functioning, self-development, and improved

ecological quality (Lerner et al., in press).

   Diamond and Savin-Williams (2009) propose a research agenda for addressing

adolescent sexual health through the promotion of "the cognitive, emotional, and interpersonal

skills necessary for [adolescents] to assess appropriately the pleasures and dangers of sexuality

so that they can make informed sexual choices that keep them safe and foster positive sexual

self-concepts" (p. 515). ISR includes this same set of "cognitive, emotional, and interpersonal

skills" that adolescents need to pursue "staying safe" and "fostering positive sexual self-

concepts," objectives which correspond to the objectives of effective ISR noted above: better

functioning and self-development (Lerner et al., in press). The exercise of sexual agency can be

described as the application of ISR skills to the domain of sex and sexuality.

Evidence from several fields suggests that ISR becomes quite critical to healthy

development during the second decade of life (for reviews, see Geldhof, Little, & Colombo,

2010; Gestsdottir & Lerner, 2008). These studies consistently indicate that, while an overall

measure of ISR is related to youth outcomes, a specific area of ISR defined by the actions of goal

pursuit, or goal-optimization, is most strongly related to outcomes in adolescence (Gestsdottir &

Lerner, 2007; Gestsdottir, Lewin-Bizan, von Eye, Lerner, & Lerner, 2009; Gestsdottir, Bowers,

Von Eye, Napolitano, & Lerner, 2010; Bowers, von Eye, Lerner, Arbeit, Weiner, Chase, &

Agans, in press). Goal pursuit involves developing and implementing strategies for reaching a

particular goal and investing time, energy, and other resources in meeting that goal (Baltes &

Baltes, 1990; Baltes, 1997; Freund & Baltes, 2002). Schwartz, Pantin, Coatsworth, and

Szapocznik (2007) identified goal pursuit as a way to integrate the PYD perspective with the

individual-level characteristics identified as important in prevention science, drawing a parallel

between goal pursuit skills and problem-solving skills. While engaging in goal pursuit behaviors,

a person must monitor the discrepancy between a goal and a present state and apply and refine

relevant strategies in pursuit of the goal (Bowers et al., in press). The present study examines the

relationship between goal pursuit skills and one indication of sexual health — the use of protection.

Goal Pursuit Skills and the Use of Protection

Protection may be defined as condoms and/ or hormonal contraception used during sexual activity to achieve goals related to preventing pregnancy and/ or sexually transmitted infection. When two people use protection during sexual activity, it shows that at least one of them anticipated the sexual activity and planned ahead for it (Winter, 1988). One or both of them selected a strategy, accessed resources, and likely communicated with others, all of which represent the use of goal pursuit skills. Fisher, Fisher, Bryan and Misovich (2002) found that information and motivation alone are insufficient to lead to the use of protection during sexual activity. In addition to information and motivation, individuals also need to have specific behavioral skills. For example, in order to use a condom, individuals need to get a condom, carry it around, negotiate use with their partners, and use it correctly. To achieve consistent use, they need to go through this process each time they have sex. Although some research in pediatric and public health promotion has overlooked goal pursuit skills (e.g., Fisher & Fisher, 2000; Abarracin et al., 2001), a burgeoning body of research indicates the importance of these skills in achieving sexual health (e.g., Catania, Kegeles, & Coates, 1990; Hacker et al., 2005).

Four major theories of behavior change, only some of which involve goal pursuit skills, have informed recent work on the promotion of condom use. The Health Beliefs model focuses on the individual's knowledge and attitudes as influencing behavior, but does not recognize the importance of skill development (Fisher & Fisher, 2000). The Theory of Reasoned Action indicates how attitudes and norms affect intentions, which in turn affect behavior (Albarracin et al., 2001). The Theory of Planned Behavior, a supplement to the former theory, adds that

intentions are also based on perceived behavioral control (Albarracin et al., 2001). These psychosocial variables are important elements of condom use, but they fail to address the fact that condom use necessitates implementing specific behavioral skills.

The AIDS Risk Reduction Model (ARRM; Catania, et al., 1990) focuses on a process in which individuals change by labeling a behavior as problematic (i.e., having unprotected sex), committing to change that behavior (i.e., using protection), and then "seeking and enacting strategies to obtain these goals" (p. 54). This third step of the process is the essence of goal pursuit, which involves finding information, selecting strategies, and using those strategies. Individuals may need to make several different attempts before finding effective strategies, for example, they may need to seek support, communicate with partners, and navigate social, emotional and material barriers (Catania, et al., 1990). These examples all entail the use of goal pursuit skills.

The Stages of Change model (Hacker et al., 2005) contributes further arguments in support of the importance of ISR in the use of protection. The Stages of Change are pre-contemplation, contemplation, preparation, action, and maintenance. Hacker et al. (2005) found that, in a sample of urban youth at community and school-based health clinics, most individuals were in the preparation stage, which means they thought about but did not yet use condoms or contraception. Furthermore, the youth in the preparation stage were the least likely to move on to the next stage over the course of the study. These youth constitute the most at risk group in this sample. Although they wanted to use contraception, they were unable to pursue strategies that would empower them to act on these intentions (Hacker et al., 2005).

The ARRM and Stages of Change models both highlight the importance of goal pursuit skills in the development of sexual health. However, the studies pertinent to these models were

conducted in populations of youth identified as at-risk in which the use of protection is assumed to be a "change" from previous behavior patterns. We need to study sexuality development, not just from a deficit perspective, but also among normative populations. To accomplish this task, the present study assessed the relationship between goal pursuit skills and the consistent use of protection within sample that included both at-risk and positively developing youth.

Gender Differences in the Association between Goal Pursuit Skills and Sexual Health

Several findings consistent with the theoretical literature that links ISR and identity (see Lerner, Freund, De Stefanis, & Habermas, 2001; Brandtstädter & Lerner, 1999) suggest that sexual agency may be particularly important for females in achieving sexual health because of the increased need for assertiveness and strategizing to resist pressures to be passive (e.g., Tolman, 2002; Hirschman, Impett, & Schooler, 2006; Impett, Schooler, & Tolman, 2006). Understanding sexual agency as the application of goal pursuit skills to the domain of sex and sexuality thus implies that the association between goal pursuit skills and the use of protection may be stronger for female adolescents than for their male peers.

The Present Study

The present study capitalizes on existing data from the 4-H study of PYD to address the relationship between goal pursuit skills, operationalized through a measure of Optimization (Freund & Baltes, 2002), and the consistent use of protection during sexual activity. The analysis is based on the sample of youth who reported having ever had sex in Wave 7 (Grade 11) of the 4-H Study of PYD. This study addresses two questions: (1) Are higher levels of Optimization associated with a higher likelihood that sexually active youth consistently use protection? (2) Is the relationship between Optimization level and consistent use of protection during sexual activity stronger for girls than it is for boys?

Method

The present study was conducted as part of a national longitudinal study, the 4-H Study of PYD. The 4-H Study of PYD began in 2002 with a sample of about 1,700 fifth grade youth from 13 states in the United States (Lerner et al., 2005). The study uses a form of cohort sequential longitudinal design (Baltes, Reese, & Nesselroade, 1977; Collins, 2006) and, the specific methodology of which is explained in other papers (e.g., Lerner et al., 2005; Bowers et al., 2010) and is not directly relevant to the crossectional sample used here.

Participants

Given the preliminary nature of this investigation, only one wave of data were used. We selected Wave 7 (Grade 11) because of the grades available for analysis at the time, Grade 11 had the greatest number of sexually active youth. In Grade 11, 1,341 youth were surveyed from 30 states; the mean age was 16.8 years (SD = 1.42) and 68.4% were female. Self-reported race for these youth was European American, 84.3%; Latino/a, 3.6%; African American, 5.2%; Asian American, 2.4 %; Multiracial, 2.3%; and American Indian, 1.7%.

Procedure

For Grades 8, 9, 10, and 11, youth were surveyed in their schools or youth programs following the same procedure as in the first three waves. Teachers or program staff gave each child an envelope to take home to the parent or guardian. The envelope contained a letter explaining the study, two consent forms (one that was returned to the school and one that could be kept for the records of the parent or guardian), a parent questionnaire, and a self-addressed stamped manila envelope for returning the parent questionnaire and consent form. Youth who were absent on the day of the survey or were from schools who did not allow on-site testing were contacted by e-mail, mail, or phone, and were asked to complete and return the survey to us.

Beginning in Grade 9, youth could go online to complete the survey. Youth tested at 4-H clubs were either tested with the paper survey or used club computers to complete the survey online.

Measures

      Goal-optimization. This study used the six items of the Optimization subscale from the Selection, Optimization, and Compensation (SOC) questionnaire (Freund & Baltes, 2002) to measure goal-optimization actions. Goal-optimization was chosen as the outcome of interest rather than the full SOC measure (or other subscales) because of the significance of optimization skills in both prevention science and PYD (e.g., Schwartz et al. 2007) as well as their greater impact in adolescent development compared to Selection and Compensation (e.g., Ebner, Freund, & Baltes, 2006). Items are administered using a forced-choice format, where each item consists of two statements. One statement for each item describes a behavior reflecting goal-optimization, while the other describes a non-optimization related behavior. Participants then select which statement is more similar to how they would behave. An example of an Optimization scale item is: "When I do not succeed right away at what I want to do, I don't try other possibilities for very long OR I keep trying as many different possibilities as are necessary to succeed at my goal." The latter option reflects goal-optimization. Responses that are consistent with the use of an optimization-related strategy are summed to provide a score for each individual on goal-optimization. Higher scores indicate higher levels of goal-optimization skills.

      Previous research has shown low to moderate reliability for both a nine-item (e.g., Cronbach's $\alpha \approx .63$; Gestsdottir et al., 2009) and an eighteen-item composite of SOC (e.g., Cronbach's $\alpha \approx .50$; Gestsdottir et al., 2009). Cronbach's alpha is a lower bound estimate of reliability when items are not essentially tau-equivalent. Such equivalence

exists when all items index the same latent construct in the same units of measurement, but possibly with differences in precision (Novick & Lewis, 1967; Raykov, 1997). Alternative reliability estimates based on factor analysis have been devised to assess the reliability of measures that may not be essentially tau-equivalent.

Tau-equivalence may not exist for the SOC measure, where dichotomously-scored items pertain to several different components of intentional self regulation. As such, reliability estimates were computed using a factor-analysis based measure, Raykov's (1997) composite reliability. Acceptable reliability was found for the SOC measure in all seven waves (average reliability for 9 item measure across Grades 5 to 7= .75; average reliability for 18 items measure across Grades 8 to 11 = .77). Average reliability for Optimization across the seven waves was .61 (range from .48 in Grade 5 to .69 in Grade 11).

Sexual Activity Items. Beginning in Grade 9, three questions were created and used to assess participants' sexual behavior. Specifically, in these items the participants were asked if they ever had sexual intercourse (no = 0; yes = 1). Those who responded they had engaged in sexual intercourse, were also asked to indicate the age they first had intercourse and whether, when they had sex, they used protection or contraception always, sometimes, or never (scored as 2, 1, and 0, respectively). For purposes of analysis in this study, responses of sometimes and never were combined into a single category designated "inconsistent use of protection" to create a dichotomous variable.

<div align="center">**Results**</div>

Using logistic regression analysis, the present study used self-report measurements from one wave of a national longitudinal study, the 4-H Study of PYD (e.g., Lerner et al., 2005; Bowers et al., 2010), to determine whether sexually active American adolescents who have high

levels of Optimization would differ in how consistently they used protection during sexual

activity and whether the relationship between Optimization and the use of protection would

differ by gender.

Of the 1,133 Grade 11 youth surveyed, 245 (22%) reported ever having sex. Of the male

youth, 77 (21.8%) reported ever having sex. Of the female youth, 168 (22.7%) reported ever

having sex. Of the white youth, 190 (20.9%) reported ever having sex. Of the youth of color, 55

(31.3%) reported ever having sex.

Among those who were sexually active, 174 (72%) said they "always" used protection or

contraception during sexual activity, 59 (24%) responded "sometimes", and 9 (4%) said "never".

Combining the latter two groups provided a total of 68 youth (28% of those sexually active) who

had "inconsistent use of protection". Of the male youth, 53 (68.8%) said they "always" used

protection or contraception during sexually activity and 24 youth (21.3%) had "inconsistent use

of protection." Of the female youth, 121 (73.3%) said they "always" used protection or

contraception during sexually activity and 44 youth (26.6%) had "inconsistent use of protection."

Of the white youth, 137 (72.9%) said they "always" used protection or contraception during

sexually activity and 51 (27.1%) had "inconsistent use of protection." Of the youth of color, 37

(68.5%) said they "always" used protection or contraception during sexually activity and 17

(31.5%) had "inconsistent use of protection."

The mean level of optimization skill was 4.03 for the sexually active participants.

Independent samples *t*-tests revealed no significant difference in mean optimization scores of

males and females, or of white youth and youth of color.

Because the criterion variable is dichotomous (using protection consistently or not), a

simultaneous logistic regression was used to model the consistent use of protection. The

predictor variable in this study was Optimization skill level, with higher scores indicating higher skills levels. The logistic analysis indicated that the Optimization skill model provided a statistically significant improvement over the constant-only model, χ^2 (1, $N = 224$) = 8.30, $p<.05$. This finding suggests that the predictor discriminates between those youth who consistently used protection and those youth who inconsistently used protection, such that greater optimization was associated with a higher odds of the use of protection (See Table 1). The overall prediction success for the cases used in the model was relatively high (72%), with a rate of 99% for participants consistently using protection and 5% for those not consistently using protection. Nagelkerke pseudo R^2 indicated that the model accounted for 5% of the total variance.

Table 1 presents the regression coefficients (B), the Wald statistics, significance level, and odds ratios (OR) for the predictor. The result of the Wald test indicates that the predictor was a statistically significant predictor of the consistent use of protection. The odds ratio indicates that for each one point increase in optimization score, the likelihood of consistently using protection increased 1.3-fold.

Insert Table 1 about here

The effect of gender was examined by performing separate logistic regressions for males and females. For females, results of the logistic analysis indicated that this model provided a statistically significant improvement over the constant-only model, χ^2 (1, $N = 152$) = 8.26, $p<.05$. This finding suggests that the predictor discriminated between those females who consistently used protection and those females who inconsistently used protection. Prediction success for the cases used in the development of the model was relatively high, with an overall prediction

success rate of 76% and correct prediction rates of 98% for females consistently using protection

and 13% for females not consistently using protection. The Nagelkerke pseudo R^2 indicated that

the model accounted for 8% of the total variance. Among males, optimization skill level was not

significantly related to the consistent use of protection.

Table 2 presents the regression coefficients (B), the Wald statistics, significance level,

odds ration [Exp(B)] and the 95% confidence intervals (CI) for odds ratios (OR) the predictor.

The result of the Wald test indicates that optimization was a statistically significant predictor of

the consistent use of protection, such that greater optimization was associated with a higher odds

of the use of protection. For each single point in the increase of optimization score for females,

there was a 1.47 times greater likelihood of consistently using protection.

Insert Table 2 about here

Discussion

The purpose of this study was to examine whether goal pursuit skills were related to the

consistent use of protection during sexual activity among a sample of eleventh grade youth, and

to assess whether the relationship between goal pursuit skills and the use of protection differs for

male and female youth. This study focused on eleventh grade youth because it was the highest

grade with available data and thus it had the largest number of sexually active participants. A

logistic regression analysis was performed to test the hypothesis that higher goal pursuit skills

would be related to consistent use of protection. In addition, logistic regressions were performed

separately for male and female youth to assess whether the relationship between optimization

and the use of protection differed by gender.

As hypothesized, higher levels of Optimization were significantly related to consistent use of protection during sexual activity. When gender differences were assessed, this relationship did not remain significant for male youth, while for female youth the results did remain significant, as anticipated. These findings are consistent with the literature suggesting that for female youth today, exercising personal agency in the domain of sex and sexuality is particularly important for their achievement of health and well-being (e.g., Tolman, 2002; Hirschman, Impett, & Schooler, 2006; Impett, Schooler, & Tolman, 2006). While this study only very narrowly assessed these gender differences, future research may take a broader approach that assesses multiple factors that may be involved.

The differences observed between male and female youth may be due to the way in which male youth are socialized to see themselves as "in charge" and "in control", particularly in the context of sexual interactions (Kim, Sorsoli, Collins, Zylbergold, Schooler & Tolman, 2007). These factors relate to the third branch of the study of normative sexuality development, which is sexual socialization. As noted in the introduction, the present study did not measure indicators of sexual socialization, or outcomes such as control orientation and perceived power. Such measurement is a task for future research. Another explanation for the current findings might be related to method of contraception, for example, it may be that females with high optimization skills have more success in pursuing hormonal contraception methods, and thus are able to consistently use protection during sexual activity.

Our results indicate that this statistical model was more accurate in predicting which females will use protection consistently than which females will be inconsistent in their contraception use. This finding suggests that goal pursuit skills are necessary, but not sufficient, for female youth to achieve sexual health. Many other factors, such as available resources,

educational experiences, messages from parents or guardians, and adherence to traditional gender roles may all hold youth back from using protection consistently, despite moderate or even strong goal pursuit skills.

The present study has several important limitations that bear consideration in future research. The current analysis is cross-sectional and so measures only unitemporal associations and cannot be interpreted as reflecting developmental change. Further analyses are needed to measure growth across the high school years, which can be done using longitudinal data from the 4-H Study of PYD. However, as noted above, measurements for several potentially relevant variables are not available in the 4-H study of PYD, and future research should include such assessments. For example, since the single item used as the outcome variable includes all forms of protection or contraception in one category, analyses of this data set cannot assess whether goal pursuit skills have a different relationship to the use of different methods of protection, for example, condoms versus hormonal contraception. To use a condom involves seeking and enacting different strategies than does using hormonal contraception. Furthermore, different gendered processes are involved with each of these different methods (Impett et al., 2006). Goal pursuit skills may be related to males' use of condoms but may be unrelated to whether their (female) partners consistently use hormonal contraception. Finally, the 4-H data set, which was not designed to be an investigation of gendered processes and adolescent sexual health, does not determine whether the sexually active youth are engaging in heterosexual or homosexual activities. It is unlikely that any other extant major longitudinal study of adolescent development includes all measures needed to address the issues raised in the present study. A new longitudinal study, designed specifically to assess these processes, is likely required.

One feature of this study that may be seen as either a limitation or as a strength is that the measure of goal pursuit skills used is a measure of overall skill level, not a measure of goal pursuit skills only in the domain of sexual health. I believe this represents a unique contribution to the existing literature. By using an overall measure of goal pursuit skills, this paper bridges the literature on PYD to the literature on normative adolescent sexuality development, helping to locate sexuality development within the broader model of PYD and thus contributing to the empirical literature of both fields. In the field of PYD, this study identifies the important role of goal pursuit skills in the development of healthy and positive functioning. In the field of normative sexuality development, this study points to goal pursuit skills as an important element of the life skills necessary for the enactment of healthy and positive sexual behaviors.

The role of goal pursuit skills in the promotion of sexual health for both male and female adolescents should be explored further so that we can more accurately describe and explain the link between sexual agency and sexual health. These explanations can inform efforts to optimize adolescent sexuality development by strengthening goal pursuit skills prior to the initiation of sexual activity. The importance of goal pursuit skills in promoting the use of protection has many implications for applied work. Clinicians, such as pediatricians and family planning counselors, must consider the importance of assessing and promoting goal pursuit skills in their adolescent clients (Schalet, 2004; Hacker et al., 2005). Classroom-based sex education is another influential cultural tool (Schalet, 2004). Most parents and adolescents hope that sex education will provide adolescents with detailed information with which they can make decisions and exercise their agency (Fine & McClelland, 2006). However, national and local politics severely restrict much of the school-based sex education in the United States. Current efforts to focus on skills-based sex education show promise to the extent to which these skills encompass a range of important

goal pursuit behaviors including but not limited to seeking and enacting strategies necessary for using protection should one choose to engage in sexual activity (Kirby, 2007).

Both applied work and developmental research must be based on an understanding of how the development of goal pursuit skills promotes sexual health within the broader context of adolescent social, emotional, cognitive, and biological development. Researchers must model developmental trajectories and map how these trajectories differ by gender as well as by other important aspects of adolescents' sociocultural experiences such as sexual orientation, age, socioeconomic status, and race/ethnicity. Key psychosocial characteristics must be included as well, such as adolescents' relationships with their parents, media consumption, and adherence to masculinity and femininity ideologies. This approach offers great promise for a deeper understanding of adolescent development, a more accurate assessment of the experiences of contemporary adolescents, and a more nuanced research agenda that will inform efforts at effective and just sex education and sexual health promotion.

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Table 1.

Logistic regression results for predicting consistent use of protection using optimization level.

Step	Variable Entered	B	Wald	Significance	Exp(B)
1	Optimization	.30	8.05	.005	1.36
	Constant	-.27	.39	.534	.736

Table 2.

Logistic regression results for predicting consistent use of protection using optimization level for female participants only.

Step	Variable Entered	B	Wald	Significance	Exp(B)
1	Optimization	.39	7.81	.005	1.47
	Constant	-.484	.76	.384	.616