

# Adolescent Risk-Taking and Future Roles: The Relationship between Delinquency, Substance Use, and Self-Efficacy

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**Abstract:** Adolescents often engage in a variety of risk-taking behaviors, such as substance use and delinquency, and these behaviors can result in a multitude of possible consequences. In particular, adolescents' perception of their capacity to function in specific adult roles, self-efficacy, is developed during the adolescent years. This study uses a nationally representative sample of high school seniors to examine how risk-taking behaviors may influence various forms of self-efficacy, and also how the social contexts of adolescents may impact self-efficacy, as well. Adolescents are shown to maintain relatively high levels of self-efficacy, indicating confidence in their ability to perform in adult roles. Alcohol use and delinquent behaviors are both shown to be salient predictors of self-efficacy, and peer factors are also revealed to have meaningful associations with self-efficacy. The findings and implications of this study are discussed within the framework of ecological systems theory.

**Keywords:** Adolescence, Delinquency, Risk-Taking, Self-efficacy, Substance Use.

## INTRODUCTION

Adolescence is a period in which a tremendous amount of growth and maturation occurs, as individuals undergo rapid physical growth and advances in cognitive abilities. The adolescent years are also a time when the nature of the social environments begin to change, with adolescents often choosing to invest more time and energy into relationships with their peers, and decidedly less with parents and siblings (Hoffman and Bahr, 2014). As they go through high school, adolescents are often asked by parents, peers, and teachers about their plans for the future, leading adolescents to contemplate not only the specific future adult roles to which they want to aspire, but also whether they feel capable and confident to pursue those (Bandura, 1997). In the latter years of high school, adolescents begin to consider their adult options, such as the type of career they want to pursue (Blustein, 2006) and whether to marry and/or have children (Blair, 2010). Preferences for future roles such as a career, becoming married, or even having children will undoubtedly be associated with adolescents' perceptions of their own competence in a given role – their own perceptions of self-efficacy (Bandura and Barbaranelli, 1996). For adolescents, self-efficacy involves their evaluations of how well they believe they will perform in a specific future role, such as being a spouse or parent.

Adolescents are often stereotyped as being rash and immature, yet the adolescent years are a period in which self-efficacy develops more fully (Capara *et al.*, 2011). They are keenly aware of their approaching futures, and their expectations for adult roles and their assessment of their own likely competence in those roles is usually quite realistic (Trice *et al.*, 1995). Indeed, adolescents' self-efficacy has been shown to be a significant predictor of eventual adult role attainments (McKay *et al.*, 2014). Adolescents tend to formulate perceptions of their self-efficacy pertaining to specific future roles, but this formulation is shaped by a combination of factors related to the social contexts of adolescents, along with their own behavioral habits (Bandura, 1997). While factors from some social contexts, such as a supportive parent at home, can be beneficial to the development of self-efficacy, adolescents are also often tempted to engage in a variety of risk-taking behaviors, such as substance use and delinquency, which may detract from the development of self-efficacy. From the perspective of ecological systems theory (Bronfenbrenner, 1979), self-efficacy develops within the social contexts in which individuals interact with others, and these contexts (e.g., family, friends, school) may present both risk and protective factors which can affect both risk-taking and self-efficacy (Booth, 2021).

Adolescents often engage in risk-taking behaviors, and substance use is one of the more common forms (de Moor *et al.*, 2022). Despite being legally underage, adolescents are prone to experimentation with alcohol, vaping, marijuana, and even the most illicit substances, such as cocaine (Kreski *et al.*, 2022). In terms of

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alcohol, over 25% of high school seniors consume it on a regular basis, with many engaging in “binge” drinking (Johnston *et al.*, 2022). Previous studies have shown that adolescents who drink on a regular basis often drink to excess (becoming intoxicated) and do so approximately 2.5 times each month (Yurasek *et al.*, 2019). The consumption of alcohol typically increases over the adolescent years (Hutchinson *et al.*, 2020), and the use of alcohol has been shown to increase the likelihood of smoking (Johnston *et al.*, 2022). Traditional cigarette smoking has declined over the past decade, but has been effectively replaced by vaping (electronic cigarettes), which approximately one-fourth of high school students regularly use (Novak *et al.*, 2024). In fact, tobacco use among adolescents has been surpassed by marijuana, which over one-third of high school students regularly use (Beverly *et al.*, 2019). Beyond substance use, risk-taking during adolescence also involves delinquency, which remains a common activity among high school students (Hoffman, 2020).

Adolescent risk-taking continues to both a common and concerning matter, particularly in regard to its potential impacts upon the lives and futures of young people. In this study, the associations between risk-taking behaviors and adolescent self-efficacy will be examined. Over recent years, risk-taking behaviors have decreased, with lower overall rates of substance use and delinquency (Johnston *et al.*, 2022), yet the prevalence of risk-taking remains a concern. Researchers have demonstrated that adolescent risk-taking can lead to problematic outcomes in adulthood (Hoffman and Bahr, 2014), and have also shown how the various social contexts of adolescence can influence patterns of risk-taking (Mushner-Eizenman *et al.*, 2003). However, the relationship between adolescent risk-taking and their perceptions of self-efficacy has received comparatively less examination (e.g., Bullock, 2013; Peguero and Shaffer, 2015). This study will examine the associations between risk-taking behaviors and the self-efficacy of adolescents. Given that the social contexts of adolescents’ lives often involve a combination of family and peer influence, this study will also examine how each of these contexts may affect self-efficacy, specifically involving the adult roles of worker, spouse, and parent, while also controlling for risk-taking behaviors.

### **Risking-Taking during Adolescence**

Adolescence is a time of considerable change and maturation, with individuals experiencing salient

changes in the physical, cognitive, and social regards. It is also a time when many young girls and boys begin to engage in risk-taking behaviors, such as experimentation with substances such as alcohol and marijuana, along with engagement in delinquent acts, such as vandalism and theft. Researchers have often proposed that risk-taking is to be expected during adolescence, as it may represent a form of rebellion against authority figures, such as parents and teachers (Gullone *et al.*, 2000). Across the adolescent years, risk-taking behaviors tend to increase with the ages of the individuals, but ultimately the rates of risk-taking tend to decline again as young people enter early adulthood (Gutman and Eccles, 2007). During the high school years, then, risk-taking reaches its peaks, making it a period when such behaviors may have deleterious effects upon adolescents’ lives (Merrin *et al.*, 2025).

Risk-taking during the adolescent years varies considerably in form, and it also tends to differ between females and males. During early adolescence, females tend to experiment with alcohol at earlier ages and to consume more, as compared to their male counterparts (Chen and Jacobson, 2012). By the mid-adolescent years, though, adolescent males’ alcohol consumption has been shown to match and then exceed that of females (Miech *et al.*, 2015). Involvement in delinquent acts also differs between females and males, with adolescent males committing significantly more delinquent acts (Hoffman, 2020). Contemporary gender roles may contribute to the differences in female and male risk-taking during adolescence. Researchers have proposed that some behaviors, such as drinking alcohol and delinquent acts, may be viewed as a display of masculinity, thus increased the performance of such acts by males, while reducing them among females (Shippee and Owens, 2011). However, some risk-taking behaviors may be more similar among females and males, as marijuana usage has been shown to be slightly higher among females (Bhatia *et al.*, 2023).

Risk-taking may certainly be subject to influence from contextual factors, such as the higher peer pressure among males to use marijuana (Watts *et al.*, 2024). Such pressures are often prevalent among females, where smoking has been linked to peer pressure, particularly in regard to body image, wherein adolescent females equate smoking with a means of losing weight (Blair and Dong, 2021). With other forms of substance use, though, female peer pressure has been shown to dissuade individuals, as such usage is

perceived as being “unfeminine” (Mason *et al.*, 2016). Even within the family environment, parents typically monitor the behaviors of sons, as compared to daughters (Andrade *et al.*, 2021), as parents may have more worries about the risk-taking behaviors committed by sons. Parental monitoring and control often varies, depending upon the number of parents, along with the number of daughters and sons, yet daughters do not completely avoid parental oversight (Blair and Dong, 2021). Given that adolescents spend considerable time in high school, it is hardly surprising that schools have also been shown to affect patterns of risk-taking behaviors (Lee *et al.*, 2021). Adolescents who get along with their teachers, maintain good grades, and have a strong identification with their school typically have substantially lower rates of risk-taking behaviors (Hsieh *et al.*, 2023). With involvement in school activities, such as sports, band, and clubs, adolescents are actively engaged with others, including teachers and coaches, who will provide considerable monitoring and control of adolescents’ after-school behaviors. Gender differences may, nonetheless, be present as some studies have found that school engagement is a stronger deterrent against risk-taking among females (Daigle *et al.*, 2007).

### Self-Efficacy and Risk-Taking

During the adolescent years, individuals begin to develop aspirations for their future lives, often pertaining to educational, occupational, and personal goals. In conjunction with such aspirations is the individual’s own assessment of how well they believe they will perform in a specific role. Self-efficacy is regarded as the degree of confidence an individual has in their own ability to perform in a role (Bandura, 1997). Self-efficacy has been shown to be directly linked with eventual outcomes, as individuals’ perceptions of self-efficacy may lead them to select specific roles later in life (Schmidt and DeShon, 2010). Individuals’ confidence, abilities, and motivations are influenced by their self-efficacy, as perceptions of self-efficacy may shape these dimensions toward the goal of achieving the desired outcomes (Bandura, 1997). Among adolescents, having higher levels of self-efficacy would result in a greater likelihood of success in attaining their future goals (Tolli and Schmidt, 2008).

High school students frequently find themselves being queried about their future goals by parents, teachers, and peers, which may create a growing sense of urgency as they approach their respective adult lives. Generally, adolescents will be advised to

prioritize the attainment of particular adult roles, with educational and occupational goals being given priority over more personal goals, such as marriage and childbearing (Schneider and Stevenson, 1999). Of course, adolescents’ goals develop within a variety of social contexts, as parents, peers, and others will frequently offer their own recommendations and advice. Despite still being in adolescence, many youth will begin to contemplate familial goals, such as whether to marry and/or have children, in their adult lives (Blair, 2010; Willoughby, 2010). Indeed, aspirations for finding a suitable partner, having a happy marriage, and bearing children are quite common among adolescents, as their aspirations for their future lives take all possible adult roles into consideration (Gatins *et al.*, 2013; Martin *et al.*, 2003).

Just as aspirations for future goals tend to be domain-specific, Bandura (1997) posited that perceptions of self-efficacy are equally specific to a particular future role. Simply, the extent to which adolescents maintain perceptions of self-efficacy is linked to a specific future role. In the domain of education, higher levels of academic self-efficacy have been shown to positively influence higher levels of educational performance and attainment (Michael, 2019). In regard to employment, higher levels of occupational self-efficacy have similarly been shown to be associated with greater occupational attainment (Taylor and Popma, 1990). In multiple manners and in multiple domains, greater levels of self-efficacy may enhance self-confidence, persistence, and the desire for future goals, thus making the attainment of those adult goals more likely (Zimmerman *et al.*, 1992).

With a greater sense of self-efficacy in a given role, adolescents may then be more willing to take on the challenges involved in attempting to achieve that role (Skinner *et al.*, 1998). The resulting self-motivation which can arise from greater self-efficacy may have lasting effects, as researchers have noted that: “unless people believe that they can produce desired effects by their actions, they have little incentive to act” (Bandura and Barbaranelli, 1996: 1206). Higher self-efficacy may encourage adolescents to work harder to achieve their goals, while lower self-efficacy may produce a sense of discouragement (Locke and Latham, 2006). Hence, self-efficacy and goal aspirations may have a synergistic effect, as adolescents with higher goal aspirations may then try to achieve higher levels of self-efficacy (Pintrich, 2000).

Like adolescence itself, the development of self-efficacy takes time, and involves a variety of contextual

factors from the lives of adolescents, such as parents, peers, and the larger community. In many ways, self-efficacy can become domain-specific (Bandura, 1997). For example, during the high school years, many adolescents take on jobs, working after school and on weekends. By being employed, adolescents' sense of occupational self-efficacy has been shown to increase as a result of their actual work experience (Reynolds *et al.*, 2006; Staff and Mortimer, 2007). Similarly, adolescents may have aspirations for becoming married and/or having children in the future. During the adolescent years, individuals typically become involved in dating and intimate relationships, and in conjunction with their experiences and observations of others, may affect their development of self-efficacy in these roles. Although marriage is unlikely to occur until they are considerably older, adolescents tend to maintain comparatively mature beliefs and attitudes about marriage. Researchers have noted that adolescents maintain several specific beliefs about marriage, including the importance of marriage, their desired timing of marriage, and particular criteria for marriage readiness (Carroll *et al.*, 2009). For many adolescents, the roles of spouse and parent may be strongly intertwined, with expectations about marriage being highly associated with having children (Jones and Prinz, 2005). Unlike work and spousal self-efficacy, adolescents are unlikely to have real-life experiences which may affect their self-efficacy as a parent. As such, the complicated nature of parenthood may lead adolescents to develop parental self-efficacy through observations of others (Biehle and Mickelson, 2011). Ultimately, development of the various forms of self-efficacy (work, spousal, parental) involves time, interaction with others, and observations within a particular social environment.

It is reasonable to assert that greater self-efficacy will prompt adolescents to actively pursue their aspired future goals (Bandura, 1997). Adolescents who have an elevated level of academic self-efficacy will likely study harder and try to improve their grade performance in order to improve their chances of future educational attainment (e.g., obtaining a college degree). Inherent within this theoretical framework is also the contention that risk-taking behaviors are likely to result in lower levels of self-efficacy (Ludwig and Pittman, 1999). Adolescent substance use and delinquency, for example, may reduce an individual's spousal self-efficacy, as such behaviors may lead the adolescent to view themselves as being less capable of attracting a suitable partner. Among adolescents,

previous studies have demonstrated that lower perceptions of self-efficacy are associated with a variety of risk-taking behaviors, including alcohol usage (Aas *et al.*, 1995), smoking (Van Zundert *et al.*, 2006), and marijuana usage (Hays and Ellickson, 1990). Risk-taking behaviors may thus result in lower perceptions of self-efficacy, as the resulting consequences of such behavior may lead to reduced perceptions of self-efficacy across a variety of future roles (Rodriguez and Loos-Sant'Ana 2015).

During the adolescent years, young people are moving between multiple social contexts, each day, and will be continually subjected to the influence of family and friends, in particular. Both their propensity toward risk-taking and their respective development of self-efficacy will also be affected by these social contexts (Booth *et al.*, 2021). The possible influence of family and friends could potentially be either negative or positive. Ecological systems theory (Bronfenbrenner, 1979) posits that adolescent development will be influenced by factors existing in the social contexts in which individuals interact with one another. Hence, the family and peer contexts may present adolescent with both risk and protective factors, influencing both risk-taking and the development of self-efficacy (Blair and Dong, 2021; Booth, 2021). In the family context, both family structure and the nature of parent-adolescent relationships can affect a variety of developmental issues in adolescents (Robison *et al.*, 2017), while peers and peer influence can also represent a substantial factor affecting the lives of adolescents across a variety of development issues, including risk-taking and self-efficacy (Burnell *et al.*, 2024). The examination of the relationship between risk-taking and self-efficacy will now proceed, with specific consideration of the family and peer contexts, along with differences between females and males.

## METHODOLOGY

Data for this study are taken from the 2023 wave of the Monitoring the Future survey (Monitoring the Future: A Continuing Study of American Youth). The Monitoring the Future survey began in 1975, and has been conducted annually, with the goal of examining a variety of adolescent behaviors and attitudes. Given that substance use patterns were quite high in the 1970s, measures of substance use and other risk-taking behaviors were included in the survey.

The study is conducted each year, with approximately 130 public and private high schools

being randomly selected for inclusion. In order to ensure the selection of a representative sample, proportional selection is used to include schools from all regions (including rural and urban schools). From each of these schools, a representative sample of high school seniors are asked to participate, with students ranging in age between 17 and 19 years. In the current sample, a total of 580 females and 577 males are included in the analyses. Participating students are advised that their responses are completely confidential and anonymized, which aids in ensuring that their responses are honest and reliable.

As previously discussed, adolescents are typically envisioning how they will perform in future roles, thus making their perceptions of self-efficacy role-specific. In this study, self-efficacy is assessed across multiple future roles, including becoming a spouse, parent, and worker. In each of these three roles, respondents were asked: "How good do you think you would be as a 1) spouse, 2) parent, and 3) worker?" With each of these individual questions, respondents could choose: "poor" (1), "not so good" (2), "fairly good" (3), "good" (4), and "very good" (5). The responses to these items should provide a broad range of self-efficacy, as perceived by adolescents about their future roles as spouses, parents, and workers.

As noted earlier, adolescents can potentially engage in a wide variety of risk-taking behaviors. Understandably, risk-taking behaviors which may lead to bodily harm and/or criminal charges are among the more concerning ones. In this study, substance use and delinquency are used as measures of risk-taking behaviors, as both have their obvious inherent dangers to the well-being of adolescents. Respondents were advised that all of their self-reported answers were completely confidential and that no personal identifiers were included, thus allowing them to provide valid and reliable information about any illegal or illicit activities which they may have performed. The Monitoring the Future study has yielded reliable assessments of adolescent behaviors, over many years. In terms of substance use, three separate measures are used, including the use of alcohol, vaping (electronic cigarettes), and marijuana. In the U.S., all three of these substances may only be legally used by adults (those over 21 years of age), thus making it illegal for minors to possess and/or use them. In terms of alcohol use, respondents were asked how often they had consumed alcohol over the past 30 days. The possible responses were: "0 occasions," 2) "1-2 occasions," 3) "3-5 occasions," 4) "6-9 occasions," 5) "10-19

occasions," 6) "20-39 occasions," and 7) "40 or more occasions." Respondents were also asked how often they had used marijuana over the past 30 days, and were offered the same possible responses as the question concerning alcohol. The measures of substance use also included vaping, for which respondents were asked how many days they had vaped over the 30 days, with possible responses including: "0 days," "1-2 days," "3-5 days," "6-9 days," "10-19 days," to "20 days or more." The measurement of risk-taking behaviors also included delinquency. Respondents were asked where they had performed various delinquent acts over the past year. These acts included: taking part in a gang fight, hurt someone badly enough to need medical attention, used a knife or gun against someone, stolen something worth less than \$50, stolen something worth more than \$50, shoplifted, stolen a car, stolen parts of a car, broken into someone's home, committed arson, intentionally damaged school property, and intentionally damaged property at work. The affirmative or negative responses to each of these acts were coded as 1=yes and 0=no, with the combined score of the total being used as an additive scale of delinquency.

During the adolescent years, the development of self-efficacy occurs within specific social contexts, including those of the family and peer environments. Measures of the family and peer contexts are included in the analyses, along with measures of individual traits of the respondents. In terms of family characteristics, respondents were asked if they had two parents (coded as 1=yes, 0=no) in the home. The highest level of educational attainment of the parents was included, with possible responses including: "grade school" (1), "some high school" (2), "high school degree" (3), "some college" (4), "college degree" (5), and "graduate degree" (6). In addition, the nature of the parent-adolescent relationship was measured by asking respondents how often they had argued or fought with their parents over the past year, with responses ranging from "not at all" to "5 or more times," over a five-point scale.

In regard to the peer context, respondents were asked about their level of involvement in several school activities, including: a) the school newspaper or yearbook, b) music or other performing arts, c) athletic teams, and d) other school clubs or activities. Responses to these items ranged from "not at all" (1) to "a great extent" (5), and the total scores were used to create a five-point scale of involvement in school activities. Beyond the school, respondents were asked

how often they went out in the evenings, each week, with their friends. Responses to this measure included: "less than once each week" (1), "once each week" (2), "twice each week" (3), "3 times each week" (4), "4 or 5 times each week" (5), to "6 or 7 times each week" (6). Since adolescent substance use often occurs in a social context, respondents were asked how many of their friends used 1) marijuana and 2) alcohol. Responses for each of these measures ranged from: "none" (1), "a few" (2), "some" (3), "most" (4), and "all" (5).

Finally, several measures of individual traits are included. Respondents were asked to describe their average grade in high school, thus far, with possible responses ranging from "D" (coded as 1) through "A" (coded as 9). Many adolescents are employed while still in high school, so respondents were asked if they currently had a part-time job (coded as 1=yes, 0=no). Finally, respondents were asked about the likelihood that they would marry someday, with responses ranging from "very unlikely" (1) to "very likely" (5). The combined associations of the contextual factors, in conjunction with risk-taking factors, will now be examined, with analyses presented separately for females and males.

## RESULTS

Table 1 presents the mean levels of self-efficacy among adolescent females and males. As shown, contemporary adolescents appear to have relatively high estimations of how well they will perform in potential future roles. In the role of spouse, 81.4% of females and 78.7% of males believe that they will be either good or very good as a spouse. Comparatively, 7.3% of females and 8.8% of males believe that they will be either poor or not so good as a spouse. For most of the sample, marriage is likely to occur in their late 20s or early 30s, given current projections, so their assessment of self-efficacy as a spouse is well ahead of the actual role. Similarly, the perceptions of self-efficacy as a parent are also rather high, with 76.6% of females and 77.2% of males rating their potential effectiveness as a parent as either good or very good. Again, though, 13.7% of females and 9.4% of males estimate their self-efficacy as a parent as either poor or not so good. Of course, becoming a spouse and/or parent is still far in the future, from the point of view of adolescents. Work roles, however, are perhaps more discernable, as so many adolescents have already had actual work experience. Among females, 88.9% estimate their self-efficacy as a worker as either good

or very good, while 86.7% of their male counterparts feel likewise.

**Table 1: Mean Levels of Future Self-Efficacy among Adolescents, by Sex**

	Females	Males
<b>Effective as a Spouse</b>	4.21 (1.01)	4.16 (1.11)
Poor	3.2%	5.3%
Not so good	4.1	3.5
Fairly good	11.4	12.4
Good	31.2	27.3
Very good	50.2	51.4
<b>Effective as a Parent</b>	4.06 (1.19)	4.14 (1.14)
Poor	5.5%	6.0%
Not so good	8.2	3.4
Fairly good	9.7	13.5
Good	27.7	25.2
Very good	48.9	52.0
<b>Effective as a Worker</b>	4.45 (0.82)	4.40 (0.90)
Poor	1.3%	2.3%
Not so good	2.1	1.8
Fairly good	7.8	9.2
Good	27.8	26.8
Very good	61.1	59.9
N	580	577

Note: Standard deviations shown in parentheses; Sample is limited to high school seniors, aged 17-19.

Table 2 presents the mean levels of risk-taking behaviors among adolescents, by sex. The overall levels of risk-taking are remarkably similar among females and males. In regard to alcohol consumption, both females and males report consuming one or two alcoholic drinks over the past month, with 29.6% of adolescents stating that they had used alcohol over the past month. The reported patterns of vaping are similar, with a slightly higher vaping rate among females (19.4%), as compared to that of males (16.5%). Marijuana use is also similar among females and males, with both reporting using it on one or two days over the past month, and with 19.0% of females and 20.2% of males using it over the past month. Overall, the substance use patterns of females and males are quite similar, suggesting that the long-standing differences between their respective

**Table 2: Mean Levels of Risk-Taking among Adolescents, by Sex**

	Females	Males
<b>Alcohol Use (0-6)</b>	1.50 (0.94)	1.52 (1.06)
Used in past 30 days	29.6%	29.6%
<b>Vaping (0-6)</b>	1.63 (1.57)	1.57 (1.46)
Used in past 30 days	19.4%	16.5%
<b>Marijuana (0-6)</b>	1.49 (1.24)	1.62 (1.49)
Used in past 30 days	19.0%	20.2%
<b>Delinquency (0-10)</b>	0.75 (1.36)	0.92 (1.66)
Committed in past year	34.8%	36.9%
N	580	577

Note: Standard deviations are shown in parentheses; Sample is limited to high school seniors, aged 17-19.

substance use behaviors are virtually gone. Delinquency, however, is an area where distinctions between adolescent females and males are still evident. Males reported a slightly higher rate of delinquent behavior (0.92), as compared to females (0.75). Over the past year, 34.8% of females and 36.9% of males reported having engaged in at least one delinquent act (e.g., assault, theft, vandalism).

Table 3 presents the mean levels of family, peer, and individual characteristics among adolescents, by sex. More than two-thirds of the sample reported having two parents in the home, and the overall level of parental educational attainment was relatively high, with most parents having some college or a college degree. The relationship between respondents and their parents were typical of adolescence, with females

**Table 3: Mean Levels of Family, Peer, and Individual Characteristics among Adolescents, by Sex**

	Females		Males	
	Mean	SD	Mean	SD
<b>Family</b>				
Two parents	0.69	0.46	0.68	0.46
Parental education (1-6)	4.42	1.29	4.53	1.12
Argue w/parents (1-5)	3.70***	1.28	2.99	1.35
<b>Peer</b>				
# of School activities (1-5)	2.13***	0.93	1.88	0.85
Friends use marijuana (1-5)	2.04***	0.67	2.75	0.71
Friends use alcohol (1-5)	2.83	0.83	2.85	0.80
# Evenings out (1-6)	2.68	1.32	2.80	1.39
<b>Individual</b>				
High school grades (1-9)	7.18***	1.93	6.51	2.10
Employed	0.64***	0.48	0.55	0.49
Likely to marry (1-5)	4.09*	0.63	4.15	0.62
N	580		577	

Note: Standard deviations shown in parentheses; Significance levels indicate difference between the means of females and males; \*\*\* p < .01, \*\* p < .05, \* p < .10; Sample is limited to high school seniors, aged 17-19.

reporting a significantly higher frequency of arguments with their parents (3.70), as compared to the reports of males (2.99).

In regard to peer characteristics, females reported being significantly more involved in school activities (2.13), as compared to males (1.88). With more participation in activities such as school clubs and athletics, females may be placed in greater proximity to peers. Interestingly, males reported having significantly more friends who use marijuana (2.75), as compared to females (2.04). However, female and male respondents reported having virtually the same number of friends who drink alcohol. Given the self-reports of substance use by respondent, it is expected that their peers would have similar usage patterns. Additionally, females and males both report going out with their friends an average of two nights, each week, thus supporting the contention that adolescents spend a considerable amount of time within the peer context.

In terms of individual characteristics, females report having a significantly higher grade average in high school (7.18), as compared to their male counterparts (6.51). The employment rate of adolescent females is also higher (approximately 64%), as compared that of males (approximately 55%). Finally, both females and males report a high expectation that they will marry someday, with males being somewhat more optimistic about that likelihood, as compared to females. The impact of adolescent risk-taking, in conjunction with the various contextual factors, will now be examined.

Table 4 presents the multivariate regression models of adolescents' perceptions of self-efficacy as a spouse. In model 1, alcohol use is shown to be positively associated with females' spousal self-efficacy ( $b = .115$ ), suggesting that higher rates of alcohol consumption may led female adolescents to consider themselves to be more effective as a spouse in later life. This association, however, is not shown to be significant in the full model. In Model 2, delinquency yields a negative association with females' spousal self-efficacy ( $b = -.057$ ). Interestingly, peers' use of marijuana is positively associated with females' spousal self-efficacy ( $b = .159$ ), as is the number of evenings spent out with friends ( $b = .085$ ). Among females, the peer context clearly has a meaningful impact upon the development of spousal self-efficacy. In addition, females' grade performance in school and their perceived likelihood of marriage also result in positive associations with spousal self-efficacy ( $b = .052$  and  $.240$ , respectively).

In Model 1, males' alcohol use is shown to be positively associated with their perceptions of self-efficacy as a spouse ( $b = .132$ ), yet this association is considerably weaker in Model 2 ( $b = .081$ ). Delinquency is negatively associated with males' spousal self-efficacy ( $b = -.058$ ) in Model 1, but does not yield a significant association in Model 2. Participation in school activities is shown to be positively associated with males' spousal self-efficacy ( $b = .152$ ), as is the number of evenings spent out with friends ( $b = .089$ ). Among males, increased peer contact appears to be linked to higher levels of spousal self-efficacy. Finally, in a manner similar to that shown among females, males' expectations about becoming married are also positively associated with spousal self-efficacy ( $b = .420$ ).

Table 5 presents the multivariate regression models for adolescents' perceptions of self-efficacy as a parent. In Model 1, females' parental self-efficacy is shown to be positively associated with alcohol use ( $b = .091$ ), but this association is not significant within the full model (Model 2). Delinquency yields a negative association with females' parental self-efficacy in both models ( $b = -.066$  and  $-.068$ , respectively), suggesting that involvement in delinquent activities detracts from parental self-efficacy among females. Similarly, arguments with parents yields a negative association with females' parental self-efficacy ( $b = -.086$ ). Spending evenings out with friends is positively associated with parental self-efficacy ( $b = .151$ ), as is the grade performance of females ( $b = .050$ ). However, the strongest association shown in Model 2 is females' belief that they will marry, which is positively associated with parental self-efficacy ( $b = .294$ ).

In a manner similar to that of females, males' perceptions of self-efficacy as a parent are positively associated with alcohol use ( $b = .101$ ), but this association is not significant in Model 2. Males' participation in delinquent acts is negatively associated with their parental self-efficacy ( $b = -.051$ ), yet this association is also insignificant in Model 2. Participation in school activities is positively associated with males' parental self-efficacy ( $b = .221$ ), as is the number of evenings which they spend out with friends ( $b = .105$ ). Once again, greater interaction with peers seems to be linked to higher perceptions of self-efficacy among males. Males' high school grade performance is positively associated with their parental self-efficacy ( $b = .063$ ), yet the strongest overall influence is their belief that they will marry someday ( $b = .352$ ). It is quite likely that males may intuitively associate marriage with parenthood.

Table 4: Regression Models of Adolescents' Perceptions of Self-Efficacy as a Spouse, by Sex

	Females		Males	
	Model 1	Model 2	Model 1	Model 2
<b>Risk-Taking</b>				
Alcohol use	.115** (.108)	.065 (.061)	.132*** (.127)	.081* (.078)
Vaping	.007 (.012)	.004 (.007)	-.006 (-.007)	.002 (.002)
Marijuana use	-.029 (-.035)	-.024 (-.030)	.022 (.029)	.027 (.037)
Delinquency	-.046 (-.017)	-.057* (-.077)	-.058** (-.087)	-.046 (-.068)
<b>Family</b>				
Two parents		.045 (.020)		.062 (.026)
Parental education		.025 (.031)		-.026 (-.026)
Argue w/parents		-.053 (-.067)		-.052 (-.063)
<b>Peer</b>				
# of School activities		.024 (.022)		.152*** (.117)
Friends use marijuana		.159** (.106)		.037 (.024)
Friends use alcohol		.006 (.005)		.069 (.050)
# Evenings out		.085*** (.112)		.089*** (.112)
<b>Individual</b>				
High school grades		.052** (.099)		.034 (.064)
Employed		.123 (.059)		.003 (.001)
Likely to marry		.240*** (.111)		.420*** (.178)
F	1.944	3.348	3.735	4.683
R-square	.015	.075	.032	.114
N	580		577	

Note: Standardized coefficients shown in parentheses; Significance levels: \*\*\* p<.01, \*\* p<.05, \* p<.10; Sample is limited to high school seniors, aged 17-19.

**Table 5 Regression Models of Adolescents' Perceptions of Self-Efficacy as a Parent, by Sex**

	Females		Males	
	Model 1	Model 2	Model 1	Model 2
<b>Risk-Taking</b>				
Alcohol use	.091* (.072)	.044 (.035)	.101** (.093)	.037 (.034)
Vaping	.010 (.014)	.004 (.006)	.005 (.007)	.020 (.026)
Marijuana use	-.044 (-.047)	-.033 (-.035)	.013 (.017)	.020 (.026)
Delinquency	-.066* (-.076)	-.068* (-.078)	-.051* (-.075)	-.040 (-.058)
<b>Family</b>				
Two parents		-.005 (-.002)		-.053 (-.022)
Parental education		.016 (.018)		-.036 (-.035)
Argue w/parents		-.086** (-.094)		-.054 (-.064)
<b>Peer</b>				
# of School activities		-.030 (-.024)		.221*** (.166)
Friends use marijuana		.089 (.313)		.056 (.035)
Friends use alcohol		-.002 (-.001)		.046 (.032)
# Evenings out		.151*** (.168)		.105*** (.127)
<b>Individual</b>				
High school grades		.050* (.081)		.053** (.097)
Employed		.007 (.003)		.092 (.040)
Likely to marry		.294*** (.115)		.352*** (.145)
F	1.635	3.095	1.889	4.577
R-square	.013	.070	.017	.111
N	580		577	

Note: Standardized coefficients shown in parentheses; Significance levels: \*\*\* p<.01, \*\* p<.05, \* p<.10; Sample is limited to high school seniors, aged 17-19.

Table 6: Regression Models of Adolescents' Perceptions of Self-Efficacy as a Worker, by Sex

	Females		Males	
	Model 1	Model 2	Model 1	Model 2
<b>Risk-Taking</b>				
Alcohol use	.076** (.087)	.047 (.054)	.068* (.081)	.030 (.036)
Vaping	.006 (.011)	.009 (.017)	.045 (.074)	.049 (.080)
Marijuana use	-.002 (-.003)	.007 (.010)	.016 (.027)	.025 (.041)
Delinquency	.010 (.017)	.006 (.010)	-.066*** (-.123)	-.056** (-.104)
<b>Family</b>				
Two parents		.074 (.042)		.098 (.051)
Parental education		-.016 (-.024)		-.050 (-.062)
Argue w/parents		-.040 (-.063)		-.045 (-.068)
<b>Peer</b>				
# of School activities		.044 (.050)		.147*** (.140)
Friends use marijuana		-.016 (-.013)		.057 (.046)
Friends use alcohol		.112** (.112)		.069 (.061)
# Evenings out		-.001 (-.000)		.019 (.030)
<b>Individual</b>				
High school grades		.046*** (.108)		.037* (.087)
Employed		.271*** (.158)		.223*** (.123)
Likely to marry		.121* (.069)		.135* (.071)
F	1.488	3.500	3.084	3.885
R-square	.012	.079	.027	.096
N		580		577

Note: Standardized coefficients shown in parentheses; Significance levels: \*\*\*  $p < .01$ , \*\*  $p < .05$ , \*  $p < .10$ ; Sample is limited to high school seniors, aged 17-19.

Table 6 presents the multivariate regression models for adolescents' perceptions of self-efficacy as a worker. Females' self-efficacy as a worker is shown to be positively associated with alcohol use ( $b = .076$ ), but this association is insignificant in Model 2. It is also

noteworthy that in Model 2, friends' use of alcohol is also positively associated with females' worker self-efficacy ( $b = .112$ ). As might be expected, females' grade performance is positively associated with worker self-efficacy ( $b = .046$ ), as is their own employment ( $b =$

.271). Interestingly, females' worker self-efficacy is similarly associated with their expectations of being married someday ( $b = .121$ ), which may reflect their views of marriage and worker roles as being intertwined to a great extent.

Among males, alcohol use is also positively associated with their worker self-efficacy ( $b = .068$ ), yet this effect is insignificant in Model 2. Males' participation in delinquency yields negative associations with worker self-efficacy in both Models 1 and 2 ( $b = -.066$  and  $-.056$ , respectively). As seen in the models of other forms of self-efficacy, males' participation in school activities is again positively associated with worker self-efficacy ( $b = .147$ ), as is their high school grade performance ( $b = .037$ ). In a manner similar to that shown among females, males' employment is positively associated with their worker self-efficacy ( $b = .223$ ), as is their belief that they will marry someday ( $b = .135$ ). Clearly, the different contextual environments of adolescents seem to contain a variety of influential factors in regard to the development of the different forms of self-efficacy. The meaning of these findings, along with their implications for adolescents' development of self-efficacy will now be discussed.

## CONCLUSIONS AND DISCUSSION

Researchers and practitioners, along with parents, have long been concerned with risk-taking behaviors among adolescents. Many years of research has conclusively demonstrated what parents already knew – substance use and delinquency during the adolescent years tends to result in decidedly negative outcomes for youth. Over recent decades, though, both substance use and delinquency rates have declined, yet these behaviors still remain problematic. Adolescence is a period when youth are looking toward their futures, giving careful thought and consideration to possible roles. Within those considerations of future roles, adolescents also evaluate themselves, and assess how well they believe they could perform in those roles, thus providing them with a sense of self-efficacy with specific adult roles. Within the framework of ecological systems theory, both aspirations for roles and perceptions of self-efficacy develop within the various social contexts of individuals. In this study, the potential impact of risk-taking behaviors upon perceptions of self-efficacy was examined, with the assumption that risk-taking behaviors represent a deleterious factor in the development of self-efficacy.

The findings demonstrated that both female and male adolescents maintain relatively high self-efficacy across all three future roles – spouse, parent, and worker. Their self-efficacy as workers was the highest, which is to be expected, given that most high school students have direct experience in part-time jobs during adolescence. Spousal and parental roles are still in their distant futures, and those roles do not offer direct experiences (such as those provided by employment), yet even these forms of self-efficacy were rather high. Clearly, contemporary adolescents have considerable confidence in their ability to perform in future roles.

The risk-taking behaviors of adolescents were consistent with prevailing trends. Approximately 30% of both female and male adolescents had consumed alcohol over the past month, and approximately one out of every five had used marijuana. Females reported slightly higher rates of vaping, while males reported a higher level of involvement in delinquent acts. Across all of these forms of behavior, it should again be noted that these are not merely risk-taking behaviors, but also illegal acts. Given the potential for deleterious outcomes, both in terms of the present and future lives of adolescents, these patterns of risk-taking are quite concerning. As previously noted, ecological systems theory contends that the social contexts in which adolescents spend their daily lives will affect both the development of self-efficacy, as well as the manners in which risk-taking might also affect self-efficacy.

The multivariate regression models demonstrate that risk-taking does, indeed, influence self-efficacy, and that the impact of the various social contexts also represent significant factors in the development of self-efficacy. In regard to substance use, alcohol consumption was shown to be significantly related to all three forms of self-efficacy. Among both females and males, higher consumption of alcohol was associated with greater self-efficacy as a spouse. It is plausible that adolescents are more prone to drinking alcohol in a social setting with their peers, such as a party or rave, thereby putting them in an environment where they are likely to enhance their social skills, thus possibly increasing their perceptions of self-efficacy in the spousal role. Drinking with their peers appears to actually enhance not only spousal self-efficacy, but also parental and worker self-efficacy. The social nature of drinking may provide adolescents with more relative comparisons to others, and thereby lead to enhanced self-efficacy. Hence, it is not the alcohol consumption, per se, which enhances self-efficacy; rather, it is the social context in which it occurs.

Interestingly, the other substances (vaping and marijuana) do not have any significant association with adolescents' perceptions of self-efficacy. However, delinquency is clearly shown to be harmful to the development of self-efficacy. In particular, delinquency was particularly impactful to the parental self-efficacy of females and the worker self-efficacy of males. Unlike alcohol consumption, delinquent acts are quite anti-social, and being caught committing delinquency would have negative effects upon adolescents' lives, including relationships with peers and intimate partners, school performance, and relationships with their parents.

The social contexts of adolescents revealed several intriguing findings. With the exception of females' arguments with parents, the factors associated with the family context were shown to yield little to no effect upon adolescents' self-efficacies. In contrast, factors associated with the peer context were shown to be quite influential. Spending evenings out with friends was positively associated with the spousal and parental self-efficacies of both females and males. This may again result from the social nature of spending time with other adolescents, thus enhancing their social and interpersonal skills, which would lend themselves to stronger perceptions of their capabilities to perform one day as a spouse or parent. Among males, involvement in school activities was positively associated with all three forms of self-efficacy, suggesting that time spent in high school clubs, sports, and other such school activities is quite beneficial to their perceptions of self-efficacy across all three future roles. This same association between school activities and self-efficacy was not significant among females, and indicates a clear gender difference in the factors affecting the development of self-efficacy. Among females, having friends who use substances (e.g., marijuana, alcohol) was actually linked with higher self-efficacy as a spouse and worker. This may again be related to the social interactions with other adolescents, and not necessarily the substances, themselves.

Individual factors also yielded salient associations with adolescent self-efficacy. Grade performance during high school was positively linked with all three forms of self-efficacy, for both females and males. Understandably, those who perform well in school are likely to also have higher levels of self-assessment in future capabilities. In this manner, it is not surprising that adolescents' expectation of marriage was also positively associated with all three forms of self-efficacy. Adolescents who consider marriage a normal and expected status in their adult lives are also likely to

view their self-efficacy positively. As expected, employment during high school was positively associated with worker self-efficacy, suggesting that the real-life experiences of adolescents in the workplace can be beneficial, above and beyond the financial compensation.

While the results demonstrate a strong association between adolescent risk-taking and self-efficacy, the limitations of the cross-sectional data used herein do leave the direction of causality open to question. Given the often turbulent nature of the adolescent years, it is plausible that risk-taking and self-efficacy may be linked in a more reciprocal manner. An adolescent experiencing declines in self-efficacy, for example, may begin to place less priority upon the achievement of future roles and thereafter choose to focus upon satisfaction derived from more immediate experiences, such as substance use and delinquency. Future research should attempt to utilize longitudinal data, with an emphasis upon the direction of causality between risk-taking and self-efficacy. These findings also have implications for educators and practitioners, as risk-taking can have numerous consequences for adolescents, above and beyond self-efficacy. In the school context, teachers and counselors should give more attention to how risk-taking may affect school performance, in the short term, but also the career and life trajectories of students, in the long run. Similarly, adolescents whose risk-taking behaviors result in involvement in the juvenile justice system may suffer not only the legal consequences of their actions, but also find their perceptions of self-efficacy affected, as well. Again, adolescence is a time of rapid change and maturation, and educators and practitioners need to be quick to respond to changes in risk-taking among adolescents.

Overall, these findings provide support for the central contention of ecological systems theory, as each of the social contexts did influence adolescents' perceptions of self-efficacy. The general lack of significant associations with the family context were not entirely unexpected, as the later adolescent years (in this case, a sample of high school seniors) are when individuals spend less time with their families, and more time with peers. The findings do indicate that spending more time with peers, either in the evenings or in school activities, result in higher levels of self-efficacy. The greater involvement with peers provides a comparative and supportive environment for most adolescents, which may enhance their perceptions of self-efficacy. Clearly, the development of perceptions of

self-efficacy in future roles is affected by numerous contextual factors, and the differences in these effects for females and males suggests that there remains a gendered quality which requires greater attention. Future studies should delve deeper into the more nuanced and discrete aspects of the development of self-efficacy during the adolescent years.

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