Published in final edited form as:

J Adolesc Health. 2015 December ; 57(6): 637–642. doi:10.1016/j.jadohealth.2015.08.015.

Time-varying Risk Factors and Sexual Aggression Perpetration among Male College Students

Martie P. Thompson, Ph.D.¹, J.B. (Kip) Kingree, Ph.D.², Heidi Zinzow, Ph.D.³, and Kevin Swartout, Ph.D.⁴

²Department of Public Health Sciences, 517 Edwards Hall, Clemson University, Clemson, SC 29634; kingree@clemson.edu

³Department of Psychology, 418 Brackett Hall, Clemson University, Clemson, SC 29634; hzinzow@clemson.edu

⁴Department of Psychology, Georgia State University, 140 Decatur St., Room 1108, Atlanta, GA 30303; kswartout@gsu.edu

Abstract

Purpose—Preventing sexual aggression can be informed by determining if time-varying risk factors differentiate men who follow different sexual aggression risk trajectories.

Methods—Data are from a longitudinal study with 795 college males surveyed at the end of each of their four years of college in 2008–2011. Repeated measures general linear models tested if changes in risk factors corresponded with sexual aggression trajectory membership.

Results—Changes in the risk factors corresponded with SA trajectories. Men who came to college with a history of SA but decreased their perpetration likelihood during college showed concurrent decreases in sexual compulsivity, impulsivity, hostile attitudes toward women, rape supportive beliefs, perceptions of peer approval of forced sex, and perceptions of peer pressure to have sex with many different women, and smaller increases in pornography use over their college years. Conversely, men who increased levels of SA over time demonstrated larger increases in risk factors in comparison to other trajectory groups.

Conclusions—The odds that males engaged in sexual aggression corresponded with changes in key risk factors. Risk factors were not static and interventions designed to alter them may lead to changes in sexual aggression risk.

Keywords

sexual aggression; college students; trajectories; longitudinal design; epidemiology

¹Corresponding author; Institute on Family and Neighborhood Life, 2083 Barre Hall, Clemson University, Clemson, SC 29634; mpthomp@clemson.edu; 864-656-6098.

Publisher's Disclaimer: This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final citable form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

Aspects of this work have been presented at the International Society for Traumatic Stress Studies.

Recent research has indicated that sexual aggression (SA) perpetration among emerging adults follows different trajectories and is thus not a static phenomenon (1–4). Our own research has indicated that the majority (71%) of college men showed no to consistently low levels of SA. Among those who did perpetrate, their trajectories varied; 8% came to college without a history of SA but increased across the college years; 12% came to college with a prior history of SA but showed a steady decline across their college years; and 9% showed a consistently high level of SA during adolescence and their college years (4). These data indicate that there are different patterns of aggressive behaviors over time.

There has been consistent empirical support for both static and dynamic risk factors associated with SA perpetration (5). Our prior work has used elements of the Theory of Triadic Influence (TTI; 6), the Theory of Planned Behavior (TPB; 7), and an expanded confluence model (8–10) to provide conceptual frameworks for examining the predictive roles of risk factors (4, 11–16). The TTI describes three types of influences on risky behaviors: intrapersonal, social/situational, and community/environmental (6). The TPB includes three constructs, attitudes, perceived norms, and perceived control that are hypothesized to predict behavioral intentions or behavior (7). The confluence model identified two primary risk factors, hostile masculinity and impersonal sex, and has been extended to include heavy alcohol use and peer norms (8–10). This study is grounded in these theoretical underpinnings by conceptualizing risk as occurring across multiple ecological levels. It also is informed by criminal justice research that has called attention to the need to assess static and dynamic risk factors when predicting sexual offending recidivism (17).

Research has identified a number of risk factors that have been found to be associated with SA perpetration, yet many of these risk factors are static in nature, including antisocial personality characteristics and exposure to child abuse and/or interparental violence (5). Some established risk factors are dynamic in nature and are thus the foci of the current investigation. Dynamic intrapersonal risk factors found to be associated with SA perpetration include impulsivity (18), sexual compulsivity (19), hostile attitudes toward women (4), rape supportive beliefs (4, 13), and heavy alcohol use (4, 20–22). Dynamic social level risk factors found to be associated with SA have included multiple sexual partners (23–25), peer pressure to engage in high levels of sexual activity (9), and peer approval of sexual violence (4, 10, 13, 26–28). Dynamic environmental risk factors for SA have been studied less, but there is empirical support for pornography exposure increasing the likelihood for perpetration (29, 30).

Although there has been consistent empirical support for these risk factors' associations with SA, studies have not typically assessed if risk factors correspond with changes in SA perpetration risk. Hall and colleagues found that persistent sexual coercers were higher than desistors and initiators on hostile attitudes toward women (2). Abbey and McAuslan found that repeat offenders had the highest levels of hostile attitudes toward women, number of consensual sexual partners, and heavy alcohol use, followed by single offenders, and then non-offenders (1). Neither of these studies, however, determined if *changes* in risk factors across time coincided with changes in perpetration risk.

The purpose of this study was to determine if changes in risk factors for SA were related to changes in SA likelihood. Findings could inform preventive interventions by elucidating risk factors that not only are malleable but also might lead to changes in SA risk. Because we were interested in assessing how changes on risk factors corresponded to changes in SA likelihood, we only included time-varying and hence potentially malleable risk factors, including attitudes supportive of SA, peer norms supportive of SA, heavy drinking, impersonal sex, impulsivity and sexual compulsivity.

Methods

Participants and Procedures

All first-year male students ($N = 1,472$) enrolled at a large southeastern university were sent personal e-mails in March 2008 requesting their participation in the study. Students also were recruited with notices in the student newspaper and flyers distributed around campus. Students were invited to come to the student health center between 9:00 a.m. and 4:00 p.m. during the upcoming week to complete confidential, 20- to 30-minute self-report surveys on men's attitudes and behaviors regarding relationships with women. Within 1 week, 800 students completed surveys after providing written informed consent.

University Institutional Review Board approval and a Certificate of Confidentiality from the National Institutes of Health were obtained prior to data collection. After completing surveys, participants deposited them into a locked box, received payment for their participation (\$20.00 at Waves 1 and 2 and \$25.00 at Waves 3 and 4), and were provided a referral sheet of counseling resources. At Waves 2, 3, and 4, participants were provided survey packets with confidential, unique codes that linked their surveys. No personal identifiers were included on the surveys.

The initial sample consisted of 800 men. Five individuals were excluded because they were less than 18 years of age or older than 34 years at Wave 1. Approximately three quarters of the sample (72%) completed surveys at Wave 4, and these 572 males comprised the analytic sample. Attrition analyses indicated that participants with more sexual partners were less likely to have completed follow-up surveys at Wave 4, $F(1, 794) = 10.89, p < .001$. No other variables were associated with attrition at Wave 4.

Participants' average age was 18.56 years at Wave 1 ($SD = 0.51$) and most (89%) were White. The sample was representative of the population of first-year male students in terms of age and race based on data provided from the Office of Institutional Research.

Measures

All measures used in the analyses have established reliability and validity. Cronbach alpha coefficients for this sample are provided below.

Sexual aggression trajectory—SA was assessed using two different time boundaries for recall at each of the four waves. At Wave 1, the time frames were prior to entering college and during the first academic year. At Waves 2–4, the reporting timeframes were the summer between the respective academic years and during the respective academic year.

The revised Sexual Experiences Survey (SES; 30), the most widely used and validated measure of perpetration among college students, was used to assess SA. The 35-item scale assesses for unwanted sexual contact, sexual coercion, attempted rape, and completed rape. A score was computed that accounted for both severity and frequency of SA, with higher scores reflecting more severe and frequent SA (4).

Latent growth mixture modeling indicated four trajectory class groups: males who engaged in consistently no or low levels of SA (low SA group) across all timepoints, males who increased in their likelihood of perpetration over the timepoints (increasing SA group), males who had perpetrated prior to college but desisted in their perpetration behaviors (decreasing SA group) and males who engaged in consistently high levels of SA both before and during college (high SA group) (4).

Sexual compulsivity—The 10-item Sexual Compulsivity Scale (32) assessed for sexual preoccupations and intrusive thoughts (e.g., “I feel that sexual thoughts and feelings are stronger than I am;” α s = .83 (Wave 1) and .86 (Wave 4)). Items were answered on a 1–4 scale, with higher scores indicating greater sexual compulsivity.

Impulsivity—The 19-item Impulsivity Questionnaire (33) assessed for impulsive behaviors (e.g., “I do and say things without stopping to think;” α s = .79 (Wave 1) and .81 (Wave 4)). Items were answered using a yes (1)/no (0) response format, and higher scores on the summed items indicated more impulsivity.

Hostile attitudes toward women—An 8-item scale adapted from the Hostility Toward Women Scale (34, 35) assessed for hostility toward women. Items were answered on a 1–5 point scale, with higher scores reflecting greater hostility (e.g., “Many times a woman appears to care, but really just wants to use me;” α s = .90 (Wave 1) and .92 (Wave 4)).

Rape supportive beliefs—The Rape Supportive Beliefs Scale (36) assessed for rape supportive attitudes. Items were answered on a 1–5-point scale, with higher mean scores indicating higher levels of rape supportive attitudes (e.g., “When women talk and act sexy, they are inviting rape;” α s = .90 (Wave 1) and .92 (Wave 4)).

Heavy drinking—Five items assessed heavy drinking (37; e.g., how often one drank to get drunk in past 30 days; α s = .92 (Wave 1) and .91 (Wave 4)). Items were standardized and averaged, with higher scores indicating heavier drinking.

Number of sexual partners—Respondents were asked how many people they had had vaginal or anal sex with since the age of 14.

Pornography use—Respondents were asked how many hours a week they looked at sexually explicit material in magazines or on the Internet. Responses ranged from none (0), less than 1 hr (1), 1 to 2 hr (2), 3 to 4 hr (3), to more than 4 hr (4).

Peer approval of forced sex—Six items assessed for perceptions of one’s current set of friends’ approval of forced sex (1; e.g., “Do your friends approve of getting a woman drunk

or high to have sex?” α s = .78 (Wave 1) and .81 (Wave 4)). Items were answered on a 1–4 scale, with higher scores indicating higher levels of perceptions of peers’ approval of various strategies to obtain sex with a woman.

Peer pressure to have sex—Three items assessed perceived peer pressure from friends to have sex with women (38; α s = .76 (Waves 1 and 4). Items were answered on a 1–4 scale, with higher scores reflective of perceived pressure from friends to have sex with women (sample item: “Do your friends lack respect for guys who have never had sex?”).

Data analytic strategy

Repeated measures general linear models were used to determine if means and changes in the risk factor variables corresponded with SA trajectories. The risk factor variables from Waves 1 and 4 served as the within-subject factor, and the trajectory group membership variable served as the between-subject variable. A significant interaction between time (2-level, within-subject factor) and group (4-level, between-subject factor) indicated if changes over time on the risk factors corresponded to membership in the low, increasing, decreasing, or high trajectory group. Significant interactions were followed with posthoc contrasts to determine how the risk factors changed over time depending on trajectory class membership. Contrast coding was used to compare the increasing and decreasing trajectory groups to their respective reference groups (i.e., combined other three groups) in regard to change in each risk factor variable from Wave 1 to 4.

Results

Thompson et al. (4) describe the full process by which men were classified into discrete trajectory groups. They found that 70.9% of the sample was categorized into the trajectory group of college men who generally perpetrated little or no SA either before or during college; 8.1% were categorized in the increasing trajectory, 12.4% in the decreasing trajectory, and 8.6% in the high trajectory.

Trajectory Membership Effects

The between-subject factor for trajectory class was significant in all analyses, indicating that the four trajectory groups varied on all of the risk factors (combined scores across Waves 1 and 4): Sexual compulsivity, $F(3,567) = 16.45, p < .001$; impulsivity, $F(3,567) = 8.82, p < .001$; hostility towards women, $F(3,567) = 27.66, p < .001$; rape supportive beliefs, $F(3,567) = 19.53, p < .001$; heavy drinking, $F(3,567) = 21.26, p < .001$; number of sexual partners, $F(3,566) = 8.28, p < .001$; pornography use, $F(3,563) = 12.98, p < .001$; peer approval of forced sex, $F(3,567) = 56.45, p < .001$; and peer pressure for sexual activity, $F(3,567) = 34.41, p < .001$. Specifically, the high trajectory group had the highest mean scores on all of the risk factors; the low trajectory group had the lowest means on all of the risk factors; the decreasing and increasing trajectories had means that were similar, and both were between the low and high trajectory groups. Means for the risk factor variables across the trajectory groups are shown in Table 1.

Effects of Risk Factor Changes over Time

There also were significant within-subjects effects, indicating that males significantly changed on the risk factor variables across their college years. Specifically, for the sample as a whole, sexual compulsivity, $F(1,567) = 4.60, p < .05$, impulsivity $F(1,567) = 46.35, p < .001$, and rape supportive beliefs, $F(1,567) = 46.14, p < .001$, significantly decreased over time. Conversely, number of sexual partners, $F(1,566) = 103.33, p < .001$, pornography use, $F(1,563) = 30.19, p < .001$, and peer approval of forced sex, $F(1,567) = 34.65, p < .001$, significantly increased over time. Hostility towards women, heavy drinking, and peer pressure did not significantly change over time for the sample as a whole. Means for the risk factor variables across time are shown in Table 1.

Effects of Risk Factor Changes on Sexual Aggression Trajectories

Significant interactions between time and trajectory group indicated that changes on most of the study risk factors corresponded to membership in the different trajectory classes. Specifically, changes in sexual compulsivity, $F(3,567) = 4.95, p < .01$, impulsivity, $F(3,567) = 2.91, p < .05$, hostility towards women, $F(3,567) = 6.33, p < .001$, rape supportive beliefs, $F(3,567) = 2.70, p < .05$, number of sexual partners, $F(3,566) = 2.69, p < .05$, pornography use, $F(1,563) = 2.55, p < .05$, peer approval of forced sex, $F(3,567) = 9.17, p < .001$, and peer pressure for sex, $F(1,567) = 3.61, p < .01$ were significantly associated with SA trajectory membership. There were no significant interactions between heavy drinking and trajectory group membership.

Post hoc analyses examined significant interaction effects. Figure 1 displays the means over time for two of the risk factors, hostility toward women and peer approval of forced sex, which demonstrated the largest interaction effects with trajectory group membership. For impulsivity, the decreasing SA group showed a significantly greater reduction (mean difference = -2.15) compared to the other groups (contrast value [c] = -2.90 , standard error [SE] = $1.43, p < .05$) and the increasing SA group showed a significantly smaller reduction (mean difference = $-.44$) than the other groups ($c = 3.93, SE = 1.61, p < .05$). For hostility toward women, the decreasing SA group showed significantly greater reductions (mean difference = $-.40$) than the other groups ($c = -1.31, SE = .31, p < .001$), yet the increasing SA group showed significantly greater increases in these attitudes (mean difference = $.10$) than the other groups ($c = .69, SE = .35, p < .05$). For rape supportive beliefs, the decreasing SA group showed a significantly greater reduction (mean difference = $-.37$) compared to the other groups ($c = -0.57, SE = .23, p < .01$) and the increasing trajectory showed a significantly smaller reduction (mean difference = $-.08$) than the other groups ($c = .59, SE = .26, p < .05$). For pornography, the decreasing SA group showed significantly smaller increases in use (mean difference = $.12$) than the other groups ($c = -1.23, SE = .52, p < .05$) and the increasing SA group showed significantly larger increases in use (mean difference = $.75$) relative to the other groups ($c = 1.31, SE = .59, p < .05$). For peer approval of forced sex, the decreasing SA group showed a small reduction (mean difference = $-.05$) relative to the other groups ($c = -.86, SE = .18, p < .001$), and the increasing group showed significantly greater increases over time in perceptions (mean difference = $.30$) compared to the other groups ($c = .53, SE = .21, p < .01$). For peer pressure to engage in high levels of sexual activity, the decreasing SA group showed significantly greater reductions (mean

difference = $-.16$) than the other groups ($c = -1.03$, $SE = .29$, $p < .001$) and the increasing SA group showed significantly greater increases (mean difference = $.19$) relative to the other groups ($c = .89$, $SE = .32$, $p < .01$). For sexual compulsivity, the decreasing group showed significantly greater reductions (mean difference = $-.20$) than the other groups ($c = -.58$, $SE = .16$, $p < .001$). Finally, for number of sexual partners, although there was a significant interaction, the contrasts revealed that neither the increasing nor decreasing groups differed significantly from the other groups on changes in number of partners.

Discussion

Findings from this study indicate the likelihood of engaging in SA behaviors can change during emerging adulthood and that as certain risk factors change, SA likelihood correspondingly changes. In general, the decreasing SA group, which consisted of men who came to college with a history of SA but decreased their perpetration likelihood during college, showed concurrent decreases in several risk factors including sexual compulsivity, impulsivity, hostile attitudes toward women, rape supportive beliefs, perceptions of peer approval of forced sex, and perceptions of peer pressure to have sex with many different women. Although the decreasing SA trajectory group increased their pornography use over their college years, this increase was smaller than for the other groups. Conversely, men who increased levels of SA over time demonstrated larger increases in risk factors in comparison to other trajectory groups. These findings provide empirical support for the dynamic nature, and hence malleability, of many risk factors for SA.

Like all studies, this study had some limitations. First, the data are from only one university and thus caution should be exercised when generalizing the findings to other universities. Second, all data were based on self-report only. Third, men with more sexual partners were less likely to complete all waves of data collection, limiting conclusions regarding how changes on this risk factor affect SA trajectories. Fourth, we did not assess protective factors and also were not comprehensive assessing risk factors, especially those at the environmental level. Further, there are other individual and peer-level risk factors for SA perpetration that have been reported in the literature but were not assessed here, including antisocial personality, delinquency, and impersonal sex (5).

Despite these limitations, this work extends the literature base in several ways. First, we accounted for the heterogeneity of perpetrators and took a person-centered approach to classify men into distinct trajectories based on their perpetration behaviors over time. Second, we identified specific risk factors whose levels changed over the course of the college years, thereby elucidating factors that are malleable and hence possible targets for interventions. Third, we were able to determine how changes in these risk factors corresponded with changes in perpetration risk, thereby providing a stronger empirical basis for identifying targets for intervention than cross-sectional studies provide or even prospective studies that examine risk factors at one point in time as predictors of future SA.

The fact that there are heterogeneous trajectories of SA and that these trajectories are differentially related to time-varying risk factors has important implications for prevention programs. A one-size-fits-all prevention strategy may not adequately target each subgroup.

Primary prevention efforts should focus on those risk factors that were associated with the increasing trajectory group, since our results indicate that as these risk factors increased over time, males without a history of SA prior to college generally increased their perpetration likelihood. Reducing hostile attitudes towards women, perceptions of peer approval of forced sex and peer pressure to have casual sex, and pornography exposure could reduce their likelihood of college SA, effectively reducing the number of men in the increasing trajectory group.

Intervention programmers also need to be mindful that some college males come to campus with a history of perpetration. Our data suggest that these men are not necessarily on a path to perpetrate again. Altering their trajectories so that these men become desistors and not consistent perpetrators is possible by focusing on those risk factors that were associated with the decreased SA group. This would include interventions designed to decrease sexual compulsivity, impulsivity, hostile attitudes towards women, rape supportive beliefs, perceptions of peer approval of forced sex, and peer pressure for casual sex, as our data indicate that reductions in these risk factors over time corresponded with desistance, or categorization in the decreasing SA group. One example of prevention programming that could target these risk factors is bystander education. Bystander intervention programs demonstrate promising empirical support, and encourage peer responsibility for violence prevention. These programs involve teaching peers how to intervene in risky sexual situations and how to alter rape supportive social norms (39).

These findings provide further convergent validity for the developmental trajectories first reported by Thompson et al. (4). Several known risk factors for SA differentially predicted trajectory membership, with an intuitive pattern of effects. The current investigation goes beyond Thompson et al.'s (4) findings and the extant literature on SA risk factors to elucidate key constructs that might underlie SA initiation, desistance, and persistence among college men. Study results also suggest that SA is a tractable problem in that not all men who perpetrate will continue to offend. Prevention and intervention programs need to focus on risk factors that not only are amenable to change but also show evidence of altering perpetration likelihood.

Acknowledgements

This research was supported by two grants to the first author from the Eunice Kennedy Shriver National Institute of Child Health and Human Development at the National Institutes of Health (award numbers R03HD053444 and R15HD065568). The content is solely the responsibility of the authors and does not necessarily represent the official views of the Eunice Kennedy Shriver National Institute of Child Health and Human Development or the National Institutes of Health.

References

1. Abbey A, McAuslan P. A longitudinal examination of male college students' perpetration of sexual assault. *J Consult Clin Psychol.* 2004; 72:747–756. [PubMed: 15482033]
2. Hall GCN, DeGarmo DS, Eap S, et al. Initiation, desistance, and persistence of men's sexual coercion. *J Consult Clin Psychol.* 2006; 74:732–742. [PubMed: 16881781]
3. Swartout KM, Swartout AG, Brennan C, White JW. Trajectories of male sexual aggression from adolescence through college: A latent class growth analysis. *Aggress Behav.* in press.

4. Thompson MP, Swartout K, Koss MP. Trajectories and predictors of sexually aggressive behaviors during emerging adulthood. *Psychol Violence*. 2013; 3:247–259. [PubMed: 23914305]
5. Tharp AT, DeGue S, Valle LA, et al. A systematic qualitative review of risk and protective factors for sexual violence perpetration. *Trauma Violence Abuse*. 2012; 14:133–167. (2013). [PubMed: 23275472]
6. Flay BR, Petraitis J, Hu FB. Psychosocial risk and protective factors for adolescent tobacco use. *Nicotine Tob Res*. 1999; 1:S59–S65. [PubMed: 11072406]
7. Fishbein, M. Readings in attitude theory and management. New York, NY: Wiley; 1967.
8. Abbey A, Jacques-Tiura AJ, LeBreton JM. Risk factors for sexual aggression in young men: An expansion of the confluence model. *Aggress Behav*. 2011; 37:450–464. [PubMed: 21678429]
9. Malamuth NM, Linz D, Heavey C, Barnes G. Using the confluence model of sexual aggression to predict men's conflict with women: A 10-year follow-up study. *J Pers Soc Psychol*. 1995; 69:353–369. [PubMed: 7643309]
10. Swartout KM. The company they keep: How peer networks influence male sexual aggression. *Psychol Violence*. 2013; 3:157–171.
11. Kingree JB, Thompson MP. Fraternity membership and sexual aggression: An examination of mediators of the association. *J Am Coll Health*. 2013; 61:213–21. [PubMed: 23663125]
12. Swartout KM, Thompson MP, Koss MP, Su N. What is the best way to analyze less frequent forms of violence? The case of sexual aggression. *Psychol Violence*. in press.
13. Thompson MP, Kingree JB, Koss MP, et al. A prospective mediational model of male sexual aggression among college men. *J Interpers Violence*. 2011; 26:2716–2734.
14. Thompson MP, Morrison D. Prospective predictors of technology-based sexual coercion by college males. *Psychol Violence*. 2013; 3:233–246. [PubMed: 24073356]
15. Zinzow HM, Thompson MP. A longitudinal examination of risk factors for repeated sexual aggression in college men. *Arch Sex Behav*. 2015; 44:213–222. [PubMed: 24567167]
16. Zinzow HM, Thompson MP. Factors associated with use of verbally coercive, incapacitated, and forcible sexual assault tactics in a longitudinal study of college men. *Aggress Behav*. 2015; 41:34–43.
17. Harris AJR, Hanson RK. Clinical, actuarial and dynamic risk assessment of sexual offenders: Why do things keep changing? *J Sex Aggress*. 2010; 16:296–310.
18. Knight RA, Sims-Knight JE. The developmental antecedents of sexual coercion against women: Testing alternative hypotheses with structural equation modeling. *Ann N Y Acad Sci*. 2003; 989:72–85. [PubMed: 12839887]
19. Knight RA, Sims-Knight JE. Testing an etiological model for male juvenile sexual offending against females. *J Child Sex Abus*. 2004; 13:33–55. [PubMed: 15914389]
20. Abbey A. Alcohol-related sexual assault: A common problem among college students. *J Stud Alcohol Suppl*. 2002; 14:118–128. [PubMed: 12022717]
21. Giancola PR. Alcohol-related aggression during the college years: Theories, risk factors, and policy implications. *J Stud Alcohol Suppl*. 2002; 14:129–139. [PubMed: 12022718]
22. Koss MP, Dinero TE. Discriminant Analysis of risk factors for sexual victimization among a national sample of college women. *J Consult Clin Psychol*. 1989; 57:242–250. [PubMed: 2708612]
23. Abbey A, McAuslan P, Zawicki T, et al. Attitudinal, experiential, and situational predictors of sexual assault perpetration. *J Interpers Violence*. 2001; 16:784–807. [PubMed: 26435575]
24. Calhoun KS, Bernat JA, Clum GA et al. Sexual coercion and attraction to sexual aggression in a community sample of young men. *J Interpers Violence*. 1997; 12:392–406.
25. Malamuth NM, Sockloskie R, Koss MP, Tanaka J. The characteristics of aggressors against women: Testing a model using a national sample of college students. *J Consult Clin Psychol*. 1991; 59:670–681. [PubMed: 1955602]
26. Burt MR. Cultural myths and supports for rape. *J Pers Soc Psychol*. 1980; 38:217–230. [PubMed: 7373511]
27. Check JV, Malamuth NM. Sex role stereotyping and reactions to depictions of stranger versus acquaintance rape. *J Pers Soc Psychol*. 1983; 45:344–356.

28. Foshee VA, Linder F, MacDougall JE, Bangdiwala S. Gender differences in the longitudinal predictors of adolescent dating violence. *Prev Med.* 2001; 32:128–141. [PubMed: 11162338]
29. Davis KC, Norris J, George WH, et al. Men's likelihood of sexual aggression: The influence of alcohol, sexual arousal, and violent pornography. *Aggress Behav.* 2006; 32:581–589.
30. Malamuth NM, Addison T, Koss MP. Pornography and sexual aggression: Are there reliable effects and can we understand them? *Ann Rev Sex Research.* 2000; 11:26–91. [PubMed: 11351835]
31. Koss MP, Abbey A, Campbell R, et al. Revising the SES: A collaborative process to improve assessment of sexual aggression and victimization. *Psychol Women Q.* 2007; 31:357–370.
32. Kalichman SC, Rompa D. The Sexual Compulsivity Scale: Further development and use with HIV-positive persons. *J Pers Assess.* 2001; 76:379–395. [PubMed: 11499453]
33. Eysenck SBG, Pearson PR, Easting G, Allsopp JF. Age norms for impulsiveness, venturesomeness and empathy in adults. *Pers Individ Dif.* 1985; 6:613–619.
34. Koss MP, Gaines JA. The prediction of sexual aggression by alcohol use, athletic participation, and fraternity affiliation. *J Interpers Violence.* 1993; 8:94–108.
35. Check JV, Malamuth NM, Elias B, Burton SA. On hostile ground. *Psychology Today.* 1985; 19:56–61.
36. Lonsway KA, Fitzgerald LF. Attitudinal antecedents of rape myth acceptance: A theoretical and empirical reexamination. *J Pers Soc Psychol.* 1995; 68:704–711.
37. Dawson DA, Room R. Towards agreement on ways to measure and report drinking patterns and alcohol-related problems in adult general population surveys: The Skarpo Conference overview. *J Subst Abuse.* 2000; 12:1–21. [PubMed: 11288465]
38. Kanin EJ. Date rapists: Differential sexual socialization and relative deprivation. *Arch Sex Behav.* 1985; 14:219–231. [PubMed: 4004546]
39. Banyard VL, Moynihan MM, Plante EG. Sexual violence prevention through bystander education: an experimental evaluation. *J Community Psychol.* 2007; 35:463–481.

Implications and Contribution

This study elucidates key constructs that underlie sexual aggression (SA) initiation, desistance, and persistence among college men. Results suggest that SA is a tractable problem; not all men who perpetrate will continue to do so. Intervention programs should focus on malleable risk factors that are associated with changes in perpetration likelihood.

Figure 1.
Plots of marginal means for hostility toward women and peer approval of forced sex over time by trajectory group membership.

Table 1

Means on risk factors at Waves 1 and 4 for the sexual aggression (SA) trajectory groups.

Risk factors	Low SA group	Decreasing SA group	Increasing SA group	High SA group	Full Sample
Sexual compulsivity (pooled)	1.35	1.45	1.53	1.64	
Wave 1	1.35	1.55	1.52	1.65	1.52
Wave 4	1.34	1.35	1.54	1.64	1.47
Impulsivity (pooled)	5.30	5.80	6.45	7.83	
Wave 1	5.92	6.88	6.67	8.77	7.06
Wave 4	4.68	4.73	6.23	6.89	5.63
HTW (pooled)	2.37	2.73	2.74	3.22	
Wave 1	2.42	2.93	2.69	3.15	2.80
Wave 4	2.31	2.53	2.79	3.29	2.73
Rape supportive beliefs (pooled)	2.05	2.28	2.28	2.60	
Wave 1	2.16	2.47	2.32	2.72	2.42
Wave 4	1.93	2.10	2.24	2.49	2.19
Heavy drinking (pooled)	-0.18	0.32	0.32	0.55	
Wave 1	-0.22	0.36	0.34	0.60	0.27
Wave 4	-0.15	0.27	0.31	0.51	0.24
Number of partners (pooled)	2.89	4.51	4.25	6.29	
Wave 1	1.49	2.47	1.85	3.89	2.43
Wave 4	4.28	6.55	6.65	8.68	6.54
Peer approval of forced sex (pooled)	1.52	1.97	1.46	1.82	
Wave 1	1.17	1.50	1.31	1.66	1.41
Wave 4	1.27	1.45	1.61	1.97	1.57
Peer pressure (pooled)	1.50	1.93	1.89	2.17	
Wave 1	1.52	2.05	1.80	2.11	1.87
Wave 4	1.52	1.89	1.99	2.23	1.91
Pornography (pooled)	1.22	1.51	1.67	2.04	
Wave 1	1.01	1.46	1.29	1.85	1.40

Author Manuscript

Author Manuscript

Author Manuscript

Author Manuscript

Risk factors	Low SA group	Decreasing SA group	Increasing SA group	Hhigh SA group	Full Sample
Wave 4	1.43	1.58	2.04	2.24	1.82