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Dating Aggression and Risk Behaviors Among Teenage Girls Seeking Gynecologic Care

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Abstract

Objective—To describe rates of dating aggression, and related high risk behavior among teens presenting to the emergency department seeking gynecologic care compared to those seeking care for other reasons.

Methods—Female patients ages 14–18 presenting to the Emergency Department during the afternoon/evening shift of a large urban teaching hospital over a nineteen month period were approached to participate and self-administered a computerized survey regarding sexual risk behaviors, past year alcohol use, dating aggression and peer aggression. Logistic regression analysis was used to identify factors associated with the evaluation of gynecologic complaint as noted by completion of a pelvic exam.

Results—A total of 949 teens were enrolled (87% response rate), with 148 receiving gynecologic evaluation. Among girls undergoing a gynecologic evaluation, 49% reported past year dating aggression compared to 34% of those who did not undergo gynecologic evaluation (OR 1.81, 1.30–2.62). Logistic regression analysis predicting gynecologic evaluation found statistically significant variables to be older age (OR 1.95, 1.24–3.06), African-American race (OR

1.58, 1.04–2.40), parental public assistance (OR 1.64, 1.10–2.45), alcohol use (OR 2.31, 1.57–3.38), and dating aggression (OR 1.51, 1.03–2.21).

Conclusion—Of the teens undergoing gynecological evaluation in this urban emergency department, 49% report dating aggression. These teens also report higher rates of other risk behaviors compared to their peers. Care providers in urban emergency departments treating all female teens and particularly those seeking gynecologic care, should be aware of this high rate of dating aggression and screen for aggression in dating relationships in this high risk group.

Keywords

Injury Prevention; Adolescents; Emergency Department

Introduction

In an urban population, the Emergency Department (ED) is often the primary source of routine healthcare including gynecologic care for adolescent girls¹. An ED visit for gynecologic care may represent an opportunity to discuss prevention of high risk behaviors including dating violence. Prior studies show that teen girls who are sexually active are at higher risk for violence, substance use and problem behaviors^{2–5}. Multiple studies have demonstrated that the ED is an appropriate setting to evaluate and intervene with adult intimate partner violence (IPV) ^{6, 7} regardless of chief complaint.

Involvement in violent or aggressive behaviors has been shown to be part of a larger clustering of risk behaviors^{2, 8}. According to recent national survey data from high school students, approximately 10–20% of female teens report experiencing sexual or physical dating violence victimization^{2, 9}. Additionally females ages 15–19 are the victims of 5% of all homicides and 16% of non-fatal assaults¹⁰. The rate of dating aggression, or, the rate of teenage girls who committed violence toward their dating partner presenting to the emergency department is unknown. Understanding prevalence of dating aggression is important and will contribute to a more complete understanding of dating violence.

This study examines dating and peer aggressive behaviors among teen girls who undergo gynecological evaluation during their ED stay. Although the focus of this study is on committing aggressive acts in dating and peer relationships, among teen girls there is a close association between dating aggression and dating violence victimization which has been termed reciprocal violence¹¹. Teens who commit violent acts are at risk for victimization and further injury³. It is hypothesized that teenage girls age 14 to 18 years old who undergo gynecologic care may also be engaging in other high risk behaviors and are at risk for a higher incidence of aggression or committing violence in dating relationships, compared to girls who are seeking ED care for other illness or injury.

The primary aims of this study were to examine rates of dating and peer aggression, substance use and related high risk behavior among adolescent females age 14 to 18 seeking care for gynecological complaints as compared to those seeking care for other reasons. Potential risk domains were selected based on theoretical models of clustering of high risk behavior among youth and prior findings¹² and included demographics, alcohol use and related sexual risk behavior.

Methods

Study Design and Population

Female teens between the ages of 14 to 18 years who presented to the emergency department (ED) completed a self-administered, audio-assisted, computer-based survey as part of the recruitment phase of a randomized controlled trial of an ED based alcohol and violence intervention. Participants were recruited during the afternoon and evening shift over nineteen consecutive months (September 2006 through April 2008). The study site, Hurley Medical Center is a 540-bed teaching hospital and a Level 1 trauma center located in Flint, Michigan with an annual ED census of 75,000 patients, with 25,000 of those being pediatric patients. Hurley Medical Center is the only public hospital in the city. Flint is comparable in terms of poverty and crime to other urban centers such as Detroit, Hartford, Camden, St. Louis and Oakland¹³. The population of patients treated at the study hospital is 50–60% African-American¹⁴. The standard of care was that those patients with a gynecologic related complaint (dysuria, lower abdominal pain, vaginal discharge etc) underwent pelvic exam.

Study procedures were approved and conducted in compliance with the Hurley Medical Center and the University of Michigan Institutional Review Boards for Human Subjects guidelines. Potential participants included both medical and injured patients who were able to give informed consent and parental assent. Patients were excluded if they were in police custody (n~9), had unstable vital signs (n~53), were actively suicidal, (n~98) or were being treated for sexual assault (n~27). These numbers are estimates as IRB regulations preclude recording information including gender on patients not in the study. Patients that were intoxicated were approached after no longer intoxicated as noted by the care provider.

Survey Content and Administration

Surveys were administered by audio computer-assisted self-interview (ACASI) to ensure confidentiality, allow for complex skip patterns, and to decrease literacy burden^{15–17}. Participants received a token \$1.00 gift (e.g., notebook, lip balm) for their participation in the screening. In rare cases (<5%) in which participants could not physically complete the survey (e.g., hold the stylus due to a broken arm, etc.), a research assistant administered the survey privately.

All measures were selected or adapted to ensure brevity and keep the time for completion of the screening questionnaire within 15 minutes. The survey was piloted prior to study implementation both for literacy and functionality with audio. The reading level was approximately 5th grade and was facilitated by audio read over of questions. Demographic items (age, race and academic performance) were selected from the National Study of Adolescent Health¹⁸. Studies have shown that violent behavior is linked to poor academic performance¹⁹ thus the academic performance variable was collapsed into two categories depicting failing grades (mostly D's and F's) and all others. Participants were asked 'Do you live with a parent or guardian' to provide information on parental involvement and 'do your parents, or the most important person raising you receive public assistance' to provide information on socioeconomic status.

Sexual Risk Behaviors—Sex risk behaviors were measured with two questions from the National Longitudinal Study of Adolescent Health²⁰. Participants were asked 'have you ever had sexual intercourse' and 'during the past 12 months, how many people did you have sexual intercourse with'.

Alcohol Use—Alcohol use was assessed with questions that have been validated in adolescent samples²⁰. 21 Participants were asked to indicate whether they had consumed alcohol more than two or three times in the past 12 months.¹⁸ For analysis, two dichotomous variables were created to reflect past year alcohol use (yes/no). In addition, the 6-item CRAFFT²², which is a previously validated screening tool used in teen populations to assess for risk for alcohol and substance use problems, was used to screen participants for alcohol consequences. Using a cut-off of 2 or higher, the CRAFFT demonstrates both sensitivity (92%) and specificity (82%) in screening adolescents for substance-related problems, with rates comparable to other lengthier measures²³. For this study, CRAFFT items were revised so that they were alcohol-specific and removed any reference to drug use.

Dating Aggression—Dating aggression was assessed using a collapsed version of the Conflict in Adolescent Dating Relationships Inventory²⁴, which asks about fighting and aggression towards someone you're dating, "going with" or a boyfriend or girlfriend. Physical victimization received from a partner was not assessed. The original four item physical abuse/aggression subscale was collapsed into two items assessing frequency of moderate (e.g., threw something that could hurt, twisted arm or hair, pushed, shoved, grabbed, or slapped) and severe aggression or commission of violence (e.g., punched or hit with something that could hurt, choked, slammed against a wall, beat up, burned or scalded on purpose, kicked, or used a knife or gun on). Note that in order to be parallel to the peer violence response, choices were modified to be identical to the Conflict Tactics Survey (CTS)²⁵: never, 1 time, 2 times, 3–5 times, 6–10 times, 11–20 times, and more than 20 times. The CTS is a scale used predominantly for the measurement of violence in relationships.

Non- Dating Aggression (peer aggression)—Items from the Conflict Tactics Survey²⁵ were used to measure aggression among peers (e.g. strangers, friends) outside of dating relationships. These questions do not include fights with someone you're dating or "going with." Peer violence, or non-dating violence, was identified as moderate (e.g. pushed or shoved, hit or punched, slammed someone into a wall, and slapped someone) or severe (e.g. punched, slammed against a wall, kicked or used a knife or gun on someone) consistent with CTS scoring. The CTS has been shown to be reliable and valid in adolescent samples²⁶. In our sample, Chronbach's alpha for both the moderate and severe violence composites were good (0.85 for moderate violence, 0.86 for severe violence).

Data Analysis

Data were analyzed using SAS Version 9.0 (SAS Institute, Cary, NC). Descriptive statistics of demographics, risk behaviors and aggression were calculated for girls seeking care for gynecologic evaluation. Then, bivariate analyses compared patients who received gynecologic evaluation with those who had not received a gynecologic evaluation. Chi-square tests were used for categorical variables and independent sample t-tests were used for continuous variables. Finally, logistic regression analyses were used to identify factors associated with evaluation of gynecologic complaint using simultaneous entry of independent variables. All statistically significant bivariate variables were used in the multivariate analysis. For this analysis, moderate and severe dating aggression was collapsed into any dating violence. Diagnostics were run on all variables retained in the final regressions and found no evidence for multicollinearity in these analyses.

Results

Overall Characteristics of study population

There were 1287 female teens eligible for the study. A total of 85% of the total eligible participants (n= 1094) were approached by a research assistant. There were 193 (of 1287) potential participants missed by the RA because the RA was busy with another participant (n=155), the patient was discharged before being approached by the RA (n=17), the RA was unable to locate the participant (n=18), and other (n=5). Of those female patients approached, 87% (n=949) completed the survey and 13% (n= 145) declined to participate. The mean time for survey completion was 14 minutes (SD 9 minutes). Of all female teens surveyed, 61% (n=577) were African American, 33% (n=320) were Caucasian and 6% (n=52) were other race. Of the total sample, 31% (n=294) received mostly D's and F's in school, 89% (n=840) lived with at least one parent/guardian, and 56% (n=534) received public assistance. Additionally, 65% (n=618) of all teens enrolled in the study were sexually active, 6% (n=56/949) were pregnant and 29% (n=270) admitted to any alcohol use. With regards to violence, 36% (n=344) engaged in dating aggression (committed violent acts toward their dating partner) while 71% (n=676) engaged in peer aggression (committed violent acts toward a peer). Of the girls presenting to the emergency department within the study enrollment period, 148 patients (16%) underwent gynecologic evaluation, and 801 (84%) did not undergo gynecologic evaluation.

Unadjusted Analysis

Demographics—Teens seeking gynecologic care were more likely to be African-American (OR 1.65, 95% CI 1.12–2.50), have parents who received public assistance (OR 1.53 95% CI 1.07–2.18) and were less likely to live with a parent (OR 0.35, 95% CI 0.17–0.59) than those that did not receive gynecologic evaluation. With regards to academic performance, those that received gynecologic evaluation were more likely to receive mostly D's and F's in school (OR 1.49, 95% CI 1.01–2.24) and there was no difference between the two groups with respect to the percentage of teens currently working.

Sexual risk factors among study sample—The majority of girls (95%, n=140/148) who received gynecologic care reported being sexually active compared to 60% (n=478/801) of girls who did not receive a pelvic exam (OR 11.7, 95% CI 5.6–24.1). Of the sexually active teens who received gynecologic care, 51% (n=72/140) report having one sexual partner, 36% (51/140) report two to three partners and 4% (n=6/140) report more than three partners. 14% (n=20/148) of teens in the group receiving gynecologic evaluation were pregnant. Of the 56 girls who were pregnant within the total study population 43% (n=24) reported past year aggression in dating relationships and 71% (n=40) reported peer aggression.

Alcohol use among study sample—Overall, teens seeking gynecologic care engaged in more alcohol use than those that did not receive gynecologic care. Specifically, nearly half (46%) of the teens who received gynecologic care reported any alcohol use compared to only 25% (n=202/801) of those who did not receive gynecologic care (OR 2.5, 95% CI 1.8–3.7), and these teens were also more likely to binge drink compared to those that did not receive gynecologic care in the emergency department (Table 1).

Characteristics of aggression among study sample—Of the girls seeking gynecological care, 49% (72/148) committed violent acts toward their dating partner (dating aggression). Of those teens that noted dating aggression, 50% (36/72) were involved in severe dating aggression and 50% (36/72) were involved in moderate dating aggression. Teens receiving gynecologic evaluation had higher rates of moderate and severe dating

aggression (OR 1.8, 95% CI 1.3–2.6) than those that did not receive gynecologic care. Of note, there was no statistical difference in the rates of peer aggression between the two groups (Table 1).

Adjusted logistic regression predicting risk factors associated with seeking Gynecological care—Using the significant variables in the crude analysis a multi-variate regression model was created (chi-square = 77.42 and p-value <0.0001). After controlling for other variables in the model, girls seeking gynecologic care in the emergency department were more likely to be older (OR 1.95, 95% CI 1.24–3.06), African American (OR 1.58, 95% CI 1.04–2.40) have parents that receive public assistance (OR 1.64, 95% CI 1.10–2.45), use alcohol (OR 2.31, 95% CI 1.57–3.38), and report dating aggression (OR 1.51, 95% CI 1.03–2.21) than their peers without gynecologic evaluation (Table 2). The Hosmer and Lemeshow chi-square test of goodness of fit to test P-value (0.2970) indicates that the model's estimates fit the data at an acceptable level, and the association of predicted probabilities and observed responses was 70.3% concordant, and 27.3% discordant.

Discussion

Little is known regarding dating violence among adolescents in the emergency department setting. National surveys estimate that 9–20% of adolescents experience physical dating violence in the form of victimization and girls who are sexually active have a higher risk of being victims of dating violence compared to girls who are not sexually active^{2, 27, 28}. A recent survey of high school teens showed 40% of teenage girls involved in dating relationships reported dating aggression which was defined as perpetration of violence²⁹ and girls are more likely than boys to report reciprocal aggression/victimization in dating relationships¹¹. In this study, half (49%) of girls who received gynecologic evaluation in the ED reported dating aggression which exceeds rates noted in previous studies. These high risk youth are less likely to receive services or be screened for violence while in school because of poor attendance and are likely underrepresented in community- and school-based studies. Additionally, the aggression reported in our study population was often “severe” (e.g. choked, slammed against a wall, beat up, burned or scalded on purpose, kicked, or used a knife or gun). Further, the teens seeking ED care for non-gynecologic reasons also experienced significant rates of dating aggression with one third (34%) noting dating aggression in the last year. Regardless of chief complaint, many teens who seek care in an urban ED participate in dating aggression. In adult studies, women who are victims of intimate partner violence are 1.5 times more likely to use the ED than women who are not involved in intimate partner violence³⁰.

It is important to note that these high rates of aggression do not account for victimization and therefore may underestimate true involvement of dating violence among teens in this high risk group. In addition, the context of the aggression is not accounted for and may be a result from the girls attempting to fight back or engage in self-defense. For example, qualitative data show females describe dating aggression as playing, or baiting the male to hit them as a sign of commitment or love³¹ and report over half of aggressive acts are done in response to aggression initiated by their boyfriend.³² A recent study of high school youth in high risk communities showed that adolescents who engage in dating aggression had significantly increased odds of reporting dating victimization compared to adolescents who did not report dating violence aggression.³

Most female teens (70%) seeking ED care, regardless of chief complaint reported involvement in a physical fight in the past year. These rates are substantially higher than other national samples in which 26% of adolescent girls reported involvement in a physical fight within the last year⁹. Additionally, rates of moderate violence and severe violence were

similar between teens evaluated for gynecological complaint compared to other reasons for seeking care. This data highlights that female teens seeking care in urban emergency department settings are at high risk for future injury related to peer violence³³.

Other community and school based studies have shown that adolescent females who engage in sexual risk behavior are at an increased risk of dating violence⁴. Rates of sexual risk behavior were higher in the group of adolescents that received gynecologic evaluation within this study. Approximately 6% of the total study population was pregnant, and 14% of the girls receiving gynecologic evaluation were pregnant. Of all those who were pregnant 43% reported dating aggression. This sub-group was too small to analyze separately, and it is unknown if the violence occurred during the current pregnancy, however pregnancy has been identified as a high risk time for intimate partner violence among adults³⁴. Additionally, homicide is the second leading cause of death among pregnant and postpartum women with women less than 20 years of age having the highest rates of pregnancy associated homicide³⁵. Studies have shown that women who experience intimate partner violence prior to and during pregnancy have higher rates of poor maternal and fetal health outcomes³⁴. Research among adolescents shows that girls who experience dating violence were more likely to become pregnant than their peers who did not experience dating violence.² In addition girls who have been pregnant report higher rates of physical fighting with dating partners.⁴

This study finds that adolescent females who received a gynecologic evaluation in the ED were also more likely to drink alcohol. This is consistent with several studies demonstrating that problem behaviors tend to group together or cluster^{12, 36–39}. The link between alcohol and violent behaviors is well-documented and several studies have shown that adolescents who drink alcohol are more likely to engage in violence^{40, 41}. Additionally, adolescents who drink alcohol are more likely to engage in high risk sexual behaviors⁵ and be victims of dating violence². Other studies have shown that lower parental education and living in a single-parent house versus a dual parent house are associated with increased risk of dating violence⁴². National samples find dating aggression is related to lower SES⁴². Teens from homes where parents receive public aid are more likely to undergo gynecologic evaluation in the emergency department than their counterparts. These girls may have more barriers to accessing primary care clinics⁴³ highlighting the need for prevention resources in the ED. However, race is often confounded by socioeconomic status^{42, 44} which is difficult to reliably measure.

The ED setting is an appropriate place to screen for aggression in this population. Prior studies have shown that a large percentage of adolescents do not have a primary care physician⁴³ or access to outpatient clinics⁴⁵ and use the emergency department for care. Screening in community clinics or pediatric offices will often miss these individuals. These high risk youth are less likely to receive services or be screened for violence while in school settings because of poor attendance/truancy and are likely underrepresented in community and school-based studies. Gynecologic complaints are the second most common reason for adolescent females to access the emergency department¹. ED providers should recognize the high rates of dating violence in all female teens they are treating. In addition ED physicians should recognize the subgroup of adolescents undergoing a gynecologic evaluation as a very high risk group, and use this as a marker to discuss dating aggression and intimate partner violence.

Limitations

Several limitations of this study are worth mentioning. This study took place at a single center urban ED and may not be generalizable to other non urban ED settings. Also, this

study focused on aggression, understanding that the context of the violence (self defense etc) is not described and that the rates of victimization without aggression may be even higher. Patients were excluded from the study if they were in police custody, being treated for sexual assault, or were suicidal which may have altered the rates of dating aggression. Although this data is based on adolescent self-report, recent reviews among adolescents and young adults has concluded that the reliability and validity of self-reported alcohol, tobacco, and other drug use is high^{46–50}, and that validity is impacted by cognitive and situational factors⁵¹. For example adolescents are more likely to report drug use using computerized surveys and when privacy/confidentiality is assured^{17, 46, 52–54}.

Conclusion

This study finds that 36% of all female teens 14–18 seeking ED care for any reason and nearly half (49%) of all girls undergoing a gynecological evaluation report dating aggression. Clinicians treating teens seeking gynecologic care should consider this high rate of dating aggression and screen for dating violence. Additionally female teens who presented with chief complaints requiring a gynecologic evaluation are participating in other high risk behaviors such as alcohol use at much higher rates than their peers seeking care for other reasons. Future studies should concentrate on understanding the context of the aggression, and should guide public health approaches, referrals and interventions with the aim of minimizing future morbidity and mortality from aggression and violence.

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Abbreviations

SD	Standard Deviation
OR	Odds Ratio
CI	Confidence Interval
ED	Emergency Department

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Table 1

Frequency and Odds Ratio of Demographics, Substance Use and Violence

	Gynecologic Evaluation n=148	No Gynecologic Evaluation n = 801	Unadjusted OR with 95% CI
Demographics			
Mean Age	16.9	16.2	1.33 (1.19–1.49)***
% African American	104 (70%)	473 (59%)	1.65 (1.12–2.50)*
Grades, mostly D-F	57(39%)	237 (30%)	1.49 (1.01–2.24) *
Currently Working	39 (26%)	212 (27%)	1.00 (0.67–1.49)
Live with Parent	115 (78%)	725 (91%)	0.35 (0.17–0.59)***
Public assistance (yes)	96 (65%)	438 (54%)	1.53 (1.07–2.18)***
Alcohol Use			
Any alcohol use	68 (46%)	202 (25%)	2.54 (1.76–3.69)***
Binge drinking	31 (21%)	98 (12%)	1.90 (1.18–3.04)**
CRAFT > 2	16 (11%)	51 (6%)	1.78 (1.02–3.18)
Violence			
Any Dating aggression	72 (49%)	272 (34%)	1.81(1.30–2.62)**
Moderate dating aggression	36 (24%)	154 (19%)	1.65 (1.07–2.55)*
Severe Dating Aggression	36 (24%)	118 (14%)	2.15 (1.38–3.36)**
Any Peer Aggression	106 (72%)	570 (71%)	0.99 (0.68–1.51)
Moderate Peer Aggression	23 (16%)	134 (17%)	0.97 (0.56–1.69)
Severe Peer Aggression	83 (56%)	435 (54%)	1.08 (0.72–1.62)

* p<0.05,

** p<0.01,

*** p<0.0001

Table 2

Logistical Regression Predicting ED Visit for Gynecological Evaluation

Demographic and Risk Behaviors	Adjusted OR (CI) N=148
Age 16–18	1.95 (1.24–3.06) **
African American Race	1.58 (1.04–2.40) *
Grades (D-F)	1.04 (0.69–1.58)
Live with parent (yes)	0.54 (0.31–0.94) *
Public Assistance (yes)	1.64 (1.10–2.45) *
alcohol use	2.31 (1.57–3.38) ***
Dating Aggression	1.51 (1.03–2.21) *

Abbreviations: OR = Odds Ratio; C.I. = Confidence Interval

*
p<0.05,

**
p<0.01,

p<0.0001