

# Dating Violence Among Adolescents Presenting to a Pediatric Emergency Department

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**Objectives:** To determine the prevalence and characteristics of dating violence experienced by adolescents seeking care in a pediatric emergency department and how often adolescents reporting victimization follow up with suggested resources.

**Design:** Cross-sectional survey.

**Setting:** An urban pediatric emergency department.

**Participants:** Of 327 participants, 235 (71.9%) were female and 92 (28.1%) were male, with a mean (SE) age of 18.7 (0.10) years.

**Interventions:** Adolescents aged 13 to 21 years completed a survey including demographic characteristics and a validated measure of dating violence. Those reporting victimization received information about local resources and were contacted 1 month later by telephone to determine their use of local resources.

**Main Outcome Measures:** Dating violence exposure and subsequent use of resources.

**Results:** Among the adolescents, 54.8% reported physical and/or sexual victimization (54.0% of girls vs 56.7% of boys; odds ratio=0.9; 95% CI, 0.6-1.5), and 59.4% reported perpetration of physical and/or sexual violence (62.1% of girls vs 52.3% of boys; odds ratio=1.4; 95% CI, 0.9-2.4). Girls were more likely than boys to perpetrate physical violence (52.2% vs 36.1%, respectively; odds ratio=1.9; 95% CI, 1.2-3.2) but were also more than 5 times as likely to report fear of sustaining serious injury from a partner (16.2% vs 3.1%, respectively; odds ratio=6.0; 95% CI, 1.4- 26.2). Young age, more intimate partners, and a history of a recent physical fight were independently associated with both dating violence victimization and perpetration. Only 4 of the 127 participants with follow-up interviews (3.1%) used any resources provided.

**Conclusion:** Dating violence perpetration and victimization rates for both boys and girls who had at least 1 dating relationship are high in this pediatric emergency department population.

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**I**NTIMATE PARTNER VIOLENCE HAS long been recognized as affecting the health of adult women<sup>1</sup> and leading to substantial numbers of emergency department visits.<sup>2,3</sup> Younger females are disproportionately affected,<sup>4,5</sup> with those aged 16 through 24 years experiencing the highest per capita rates of intimate partner violence, most commonly in the form of teen dating violence (TDV).<sup>6</sup> Pediatric emergency departments (PEDs), which often treat patients through age 21 years, may serve considerable numbers of individuals experiencing TDV.

Teen dating violence includes both victimization and perpetration. While some adolescents have reported either exclusive TDV victimization or perpetration, TDV is frequently reported as mutual, with girls and boys simultaneously reporting TDV victimization and perpetration.<sup>7-9</sup> Although estimates of TDV prevalence are

broad,<sup>10</sup> national data indicate that more than 1 in 6 sexually active girls has been victimized by TDV,<sup>11</sup> and recent PED data indicate that more than 1 in 3 presenting girls had been victimized by TDV.<sup>12</sup> Perpetration rates of TDV are similar to victimization and comparable for both boys and girls.<sup>9,13</sup> Research does, however, document that boys perpetrate more severe forms of violence,<sup>14</sup> with girls being more likely to experience injury from TDV.<sup>15-18</sup> These findings highlight that while girls and boys may report similar rates of both perpetration and victimization, the nature of violence experienced and the resulting consequences may be more significant for girls.

Both TDV perpetration and victimization have been strongly correlated with multiple health risks among adolescents, including substance use, unprotected sex, unplanned pregnancy, more sexual partners, unhealthy weight control behav-

iors, and physical fighting.<sup>11,12,19-22</sup> Many of these issues can lead to PED visits, increasing the likelihood of TDV victims and perpetrators presenting in the PED setting. Correspondingly, adolescents who engage in higher levels of risky behaviors are known to disproportionately use the PED as their usual source of care,<sup>23</sup> again making this site a potentially important setting in which to identify and intervene with individuals involved in TDV.

There are limited data on TDV in the PED setting. The work that has been done, while important in documenting the high rate of TDV and its association with risky behaviors among PED patients, was solely focused on girls and TDV victimization.<sup>12</sup> This study builds on this work by assessing TDV victimization and perpetration among male and female patients in the PED, associations between TDV and behavioral health risks, and subsequent use of TDV services (eg, contacting advocacy groups, hotlines, or shelters) after PED visits.

## METHODS

This study was conducted in a large urban PED with 30 000 annual visits. It is part of a safety net hospital serving low-income and vulnerable populations, including a high proportion of victims of violence within the region. Subjects were recruited from 3 PM to 11 PM, 4 nights a week (on a rotating schedule so that all days of the week were represented) during 3 months, from August 2009 through October 2009. All English-speaking patients aged 13 to 21 years were approached for study participation once they were placed in private examination rooms and clearance was obtained from medical care providers, to ensure that patients were medically appropriate for participation (eg, nonemergent care, normal mental status, adequately controlled pain). Research assistants (RAs), who were educated about TDV and trained in survey data collection through a full-day training session run by the study's principal investigator (B.C.C.) and the hospital's domestic violence program coordinator (Joanne Timmons, MPH), introduced the study to adolescent patients and to any parents or guardians of patients younger than 18 years if present. Any other accompanying individuals were asked to leave prior to introduction of the study. The project was described as a study of health and violence among adolescents, and not of TDV, to reduce the likelihood that the RAs would communicate the nature of the study in a way that could potentially endanger a participant. Subsequent to approval from the participant and any accompanying parent or guardian, the subject was privately screened for eligibility so that potential participants would not be asked to disclose their dating history in the presence of parents or guardians. Eligible patients were those who had prior experience in a dating relationship (ie, "romantic or sexual relationship, or involvement with someone that includes having sex or 'hooking up' on more than 1 occasion"). Medical record numbers were checked to verify no previous participation. Ineligible subjects and those unwilling to be screened or participate were thanked for their time.

Verbal informed consent was obtained from all eligible and willing subjects and from the parent or guardian when appropriate. The RAs described the study by reading from an information sheet that was also made available to subjects and parents. Subjects and parents were informed that the surveys would be anonymous and confidential, with no data or information on survey items being released to anyone outside the research team. This was explicitly stated to encourage honest responses from subjects. Parents were then shown to the waiting room prior to

survey administration. In accordance with recommendations from the Society for Adolescent Medicine,<sup>24</sup> we only pursued parental consent in situations where parents were available, to facilitate inclusion of adolescents with low parental involvement, a group likely experiencing greater risk for TDV victimization and perpetration. After informed consent was obtained, the RAs provided subjects with a self-administered, brief written survey; subjects completed the survey privately but with the RA available to them if they had any questions. Surveys took between 15 and 20 minutes for most participants.

After they completed the survey, participants received written information about local TDV services for adolescents. Participants who reported physical or sexual dating violence victimization were invited to participate in a follow-up telephone interview to occur 1 month after their PED visit. Verbal informed consent was obtained from all eligible and willing participants and from their parents when appropriate. Subjects were informed that they would be mailed a \$20 gift card to a local store on completion of a follow-up telephone interview. The RAs obtained telephone numbers of the participant's choice for follow-up; these numbers were presumed but not confirmed to be mobile numbers. The institutional review board of Boston Medical Center approved these procedures. A certificate of confidentiality was obtained for this study.

## MEASURES

The survey assessed demographic characteristics, including number of intimate partners, engagement in risk behaviors, relationship history, and TDV perpetration and victimization histories (eAppendix 1; <http://www.archpediatrics.com>). History of risk behaviors, including substance use, physical fighting, and contraception use, was determined using items derived from the Youth Risk Behavior Survey based on its validation with broad populations of adolescents.<sup>25</sup> Additional questions were asked to assess subjects' school enrollment, employment status, living situation, and means of financial support. To evaluate TDV, we used the Revised Conflict Tactics Scale, a reliable and valid measure of intimate partner violence perpetration and victimization.<sup>26</sup> The Revised Conflict Tactics Scale includes 5 subscales (36 items) to measure each partner's behavior along dimensions of physical assault, psychological aggression, negotiation, injury, and sexual coercion. Questions assess lifetime occurrence and frequency of each behavior in the prior year. Scales were constructed on ever and past-year TDV perpetration and TDV victimization (ie, 4 TDV scales) using the physical assault, sexual coercion, and injury subscales. For each scale, responses were dichotomized as the following: (1) never vs ever having experienced that form of violence, and (2) having no vs any experience of that form of violence in the past 12 months. Cronbach  $\alpha$  for these scales ranged from .90 to .94.

Once the first 140 surveys were collected and preliminarily reviewed, the high rates of violence reported prompted concerns that the Revised Conflict Tactics Scale was not providing information as to how this violence was being experienced. Therefore, 2 questions were added to the remaining 219 surveys administered to assess experience of fear: "I've felt afraid of being seriously hurt by my partner," and (2) "I think that my partner has felt afraid of being seriously hurt by me." Responses were consistent with the Revised Conflict Tactics Scale, assessing ever vs never and past-year experiences. The overall survey results were similar between participants who completed surveys with and without the added questions.

Scripted follow-up telephone interviews, conducted solely with those reporting TDV victimization, lasted 5 to 10 minutes (eAppendix 2). Subjects were asked whether they had contacted any of the resources provided subsequent to their PED

visit, why they did or did not do so, and, if contacts were made, what their experiences were with the contact. All subjects were additionally asked about what types of resources they might be willing to use to get help with TDV in the future.

## STATISTICAL ANALYSIS

Means (standard errors) and frequencies were used to describe sample characteristics of the 327 adolescents included in this study. Frequencies were calculated and logistic regression analyses were performed to examine differences in the lifetime prevalence of dating violence for both perpetration and victimization between boys and girls. Multivariate logistic regression was used to test for associations between the outcomes (perpetration, victimization, and perpetration and/or victimization) and covariates including age, race/ethnicity, pregnancy, number of intimate relationships, smoking and alcohol use, attending school and/or being employed, and involvement in physical fighting. Covariates were chosen based on previous research documenting their association with TDV.<sup>11,19-22</sup> All analyses were performed using SAS version 9.1 statistical software (SAS Institute, Inc, Cary, North Carolina). Two-sided  $P < .05$  was considered statistically significant.

## RESULTS

Of 562 patients approached, 500 were eligible; those ineligible were non-English speakers ( $n = 34$  [6.0%]) or had never been in a dating relationship ( $n = 28$  [5.0%]). Of the 500 eligible participants, 359 (71.8%) agreed to participate; of this group, 327 subjects (91.1%) provided sufficient data for analysis, such that 65.4% of eligible patients provided data included in study analyses. No data are available from individuals who declined participation. The subjects with insufficient data for analysis ( $n = 32$ ) were similar to those with adequate data with respect to race, ethnicity, and sex but were slightly younger (mean [SE] age, 17.5 [0.48] vs 18.7 [0.10] years, respectively;  $P = .03$ ).

The sample included 235 girls (71.9%) and 92 boys (28.1%) (**Table 1**). The majority were African American (68.7%), and 22.9% were younger than 18 years. The majority were in school (72.6%) and living with parents (55.5%).

Lifetime TDV was reported by 54.8% of the sample, with no significant differences in reporting by sex (54.0% of girls vs 56.7% of boys; odds ratio = 0.9; 95% CI, 0.6-1.5) (**Table 2**). Of the entire sample, 43.2% reported history of physical victimization, 38.2% reported history of sexual victimization, and 21.1% reported ever sustaining injury from a dating partner. Girls were more than 5 times as likely as boys to report having experienced fear of sustaining serious injury from a partner (16.2% of girls vs 3.1% of boys; odds ratio = 6.0; 95% CI, 1.4-26.2). Rates of victimization by type of TDV ever were comparable to those of the past year for both boys and girls.

Perpetration of TDV was reported by 59.4% of the sample, with no significant difference by sex (62.1% of girls vs 52.3% of boys; odds ratio = 1.4; 95% CI, 0.9-2.4) (**Table 3**). Overall, 47.7% reported ever perpetrating physical violence, 33.2% reported ever perpetrating sexual violence, and 18.6% reported ever inflicting injury on a dating partner. Physical violence perpetration ever was

**Table 1. Characteristics of 327 Participants From the Pediatric Emergency Department Sample**

Characteristic	Participants, No. (%)
Age, mean (SE), y	18.7 (0.10)
Sex	
Male	92 (28.1)
Female	235 (71.9)
Race	
White	52 (18.9)
African American or black	189 (68.7)
Asian	7 (2.6)
American Indian	2 (0.7)
Pacific Islander	9 (3.3)
Other	16 (5.8)
Hispanic or Latino ethnicity	88 (27.3)
School or employment	
Attends school	236 (72.6)
Employed full-time	42 (13.0)
Neither attending school nor employed full time	45 (13.9)
Housing	
Parents	181 (55.5)
Foster parents or other relatives	32 (9.8)
Friend or roommate	31 (9.5)
Boyfriend, girlfriend, fiancé, fiancée, or partner	41 (12.6)
Alone	22 (6.8)
Other	19 (5.8)
Financial support	
Parents	145 (45.0)
Foster parents or other relatives	12 (3.7)
Self-supported	111 (34.5)
Boyfriend, girlfriend, fiancé, fiancée, or partner	15 (4.7)
Other	39 (12.1)
Reported pregnancy	
No	202 (62.4)
Yes	122 (37.7)
Smoking	
No	209 (64.3)
Yes	116 (35.7)
Alcohol consumption	
No	149 (45.7)
Yes	177 (54.3)
Intimate partners, No.	
0	40 (12.7)
1-3	114 (36.2)
$\geq 4$	161 (51.1)

significantly more likely for girls than for boys (52.2% vs 36.1%, respectively; odds ratio = 1.9; 95% CI, 1.2-3.2).

Approximately 10% of the sample believed that they had ever made their partners feel afraid of sustaining a significant injury, without significant difference by sex. Additional analyses confirmed that findings were similar between past-year and lifetime TDV perpetration.

Victimization by TDV was significantly associated with having more intimate relationships, drinking alcohol, and being involved in a physical fight during the past 12 months (**Table 4**). Perpetration of TDV was significantly associated with being female, being aged 13 to 15 years, having a history of being or getting someone pregnant, having more intimate relationships, being a smoker, and being involved in a physical fight during the past 12 months.

Of the 212 subjects eligible for follow-up telephone interviews, 207 agreed to participate and 127 (61.4%) were

**Table 2. Prevalence of Dating Violence Victimization Among Female and Male Adolescents Presenting to a Pediatric Emergency Department<sup>a</sup>**

Type of Violence <sup>b</sup>	Lifetime Prevalence				12-mo Prevalence			
	Total, %	Girls, %	Boys, %	Girls vs Boys, OR (95% CI)	Total, %	Girls, %	Boys, %	Girls vs Boys, OR (95% CI)
Physical and/or sexual (n=316)	54.8	54.0	56.7	0.9 (0.6-1.5)	50.9	49.8	53.6	0.9 (0.5-1.4)
Physical (n=310)	43.2	42.9	44.2	0.9 (0.6-1.6)	37.4	36.6	39.2	0.9 (0.5-1.5)
Sexual (n=319)	38.2	37.8	39.3	0.9 (0.6-1.6)	34.1	34.1	34.2	1.0 (0.6-1.7)
Sustaining injury (n=318)	21.1	23.4	15.4	1.7 (0.9-3.2)	16.9	18.3	13.5	1.4 (0.7-2.9)
Experiencing fear (n=218)	12.4	16.2	3.1	6.0 (1.4-26.2)	9.5	12.2	3.1	4.3 (0.97-19.2)

Abbreviation: OR, odds ratio.

<sup>a</sup>Significant differences between girls and boys were estimated using Pearson  $\chi^2$  tests.

<sup>b</sup>Sample sizes differed owing to missing data.

**Table 3. Prevalence of Dating Violence Perpetration Among Female and Male Adolescents Presenting to a Pediatric Emergency Department<sup>a</sup>**

Type of Violence <sup>b</sup>	Lifetime Prevalence				12-mo Prevalence			
	Total, %	Girls, %	Boys, %	Girls vs Boys, OR (95% CI)	Total, %	Girls, %	Boys, %	Girls vs Boys, OR (95% CI)
Physical and/or sexual (n=315)	59.4	62.1	52.3	1.4 (0.9-2.4)	56.0	58.7	49.4	1.5 (0.9-2.4)
Physical (n=310)	47.7	52.2	36.1	1.9 (1.2-3.2)	42.4	46.0	33.7	1.7 (0.98-2.8)
Sexual (n=319)	33.2	30.9	39.3	0.7 (0.4-1.1)	29.9	28.1	34.9	0.7 (0.4-1.2)
Inflicting injury (n=318)	18.6	18.1	19.8	0.9 (0.5-1.7)	13.4	11.9	17.1	0.7 (0.3-1.3)
Causing fear (n=218)	10.1	8.4	14.1	0.6 (0.2-1.4)	6.7	5.4	9.8	0.5 (0.2-1.6)

Abbreviation: OR, odds ratio.

<sup>a</sup>Significant differences between girls and boys were estimated using Pearson  $\chi^2$  tests.

<sup>b</sup>Sample sizes differed owing to missing data.

successfully interviewed by a single RA. Of this group, only 4 (3.1%) reported contacting any resources for help with TDV subsequent to their PED visit. Among those who did not, the most common reason for not doing so was not feeling that help was needed for TDV (n=86 [67.7%]). A few subjects endorsed other reasons, including the following: not believing that the resources provided would be helpful, feeling that contacting resources would be too difficult, and worrying that contacting resources might get someone else in trouble. The majority of subjects stated that they definitely or possibly would use a free hotline (n=40 [31.5%] and n=49 [38.6%], respectively), use a free counselor (n=42 [33.1%] and n=49 [38.6%], respectively), or participate in adolescent groups to address issues relating to dating relationships (n=32 [25.2%] and n=53 [41.7%], respectively) if they felt that they needed help in the future. However, the majority of subjects stated that they probably or definitely would not access an online chat room to talk to a counselor (n=31 [24.4%] and n=40 [31.5%], respectively).

#### COMMENT

This study demonstrates that the majority of adolescents seeking care in a PED report a history of TDV in terms of both perpetration (59.4%) and victimization

(54.8%), with past-year experiences of violence similar to lifetime experiences. The rate of TDV perpetration in this PED sample is higher than that seen in previous studies, which have largely been conducted with school-based samples; in these studies, 15% to 33% of boys and 28% to 66% of girls reported such perpetration behaviors.<sup>18,27</sup> Similarly, our observed rate of TDV victimization is also higher than that reported by boys and girls recruited in US high school settings<sup>11,21,28</sup> as well as higher than rates reported by at-risk girls recruited from urban teen clinics and reproductive health care settings.<sup>29-31</sup> These differences are likely attributable to the PED representing a higher-risk adolescent population and to our restricting our sample to those reporting a history of dating relationships.

This study additionally documents similar rates of TDV perpetration and victimization by sex but higher rates of female physical TDV perpetration. Such findings are consistent with previous work and the growing documentation of female physical TDV perpetration.<sup>32</sup> However, our findings also reveal that girls experience 5 times more fear of sustaining injury than their male counterparts. This finding is consistent with prior work among adolescents demonstrating that TDV may have a greater health effect on girls than on boys.<sup>15-18</sup>

The markedly high levels of TDV found in our sample suggest that the PED may be a good place to identify ado-

**Table 4. Logistic Regression Analyses to Assess the Association Between Adolescent Characteristics and Violence Outcomes Including Perpetration, Victimization, and Both Perpetration and Victimization of Violence<sup>a</sup>**

Adolescent Characteristic	Odds Ratio (95% CI)		
	Victimization (n=315)	Perpetration (n=314)	Perpetration and Victimization (n=313)
Female vs male	1.2 (0.7-2.1)	1.9 (1.1-3.4)	1.8 (0.97-3.3)
Age, y			
13-15	1.8 (0.6-5.5)	5.8 (1.6-21.4)	4.1 (1.1-14.7)
16-17	0.8 (0.4-1.6)	1.6 (0.7-3.4)	1.6 (0.7-3.6)
≥18	1 [Reference]	1 [Reference]	1 [Reference]
Race			
White	1 [Reference]	1 [Reference]	1 [Reference]
Black or African American	0.7 (0.3-1.4)	0.8 (0.4-1.8)	0.6 (0.3-1.5)
Asian, American Indian, Pacific Islander	1.5 (0.4-5.3)	1.7 (0.5-6.4)	2.1 (0.5-8.3)
Hispanic or Latino ethnicity vs not	0.6 (0.3-1.4)	0.8 (0.4-1.9)	0.7 (0.3-1.6)
Being or getting someone pregnant vs no pregnancy	1.5 (0.8-2.7)	2.1 (1.2-3.9)	2.3 (1.2-4.3)
Intimate relationships, No.			
0	1 [Reference]	1 [Reference]	1 [Reference]
1-3	2.8 (1.1-7.0)	6.2 (2.1-17.7)	5.0 (1.9-12.9)
≥4	4.3 (1.7-11.4)	8.8 (2.9-26.7)	7.2 (2.6-19.7)
Smoker vs nonsmoker	1.2 (0.7-2.3)	2.0 (1.03-3.7)	1.8 (0.9-3.5)
Alcohol consumer vs nonconsumer	2.2 (1.3-3.8)	1.3 (0.7-2.4)	1.9 (1.1-3.5)
Not in school and not working vs in school and/or working	0.6 (0.3-1.2)	0.7 (0.3-1.7)	0.5 (0.2-1.1)
Involved in physical fight during past 12 mo vs not	2.4 (1.4-4.2)	2.0 (1.1-3.5)	2.1 (1.1-3.9)

<sup>a</sup>Perpetration and victimization scales include assessment of physical and sexual violence and infliction of injury.

lescents experiencing TDV and to target interventions for both boys and girls. Although efforts to address youth violence in the PED setting and intimate partner violence in the adult emergency department setting have been described,<sup>33-38</sup> the potential to intervene with both TDV victims and perpetrators presenting in the PED remains untapped. Such efforts would likely require more than simple brief education and sharing of referral information as our study involved such an approach and resulted in 3.1% of TDV victims contacting local TDV support services within 30 days of our provision of this information, although it is possible that a greater effect might be observed during a longer follow-up. However, it is both interesting and important to note that most of the adolescents reporting TDV victimization in their initial survey reported that they did not perceive themselves as needing help on follow-up, although they expressed willingness to use multiple types of resources in the future if they ever felt that they did need help. The combined findings of a very high prevalence of TDV but a perception that TDV is not a problem are concerning. While it is unknown what proportion of our subjects were involved in an ongoing abusive relationship at the time of their participation in the study, we would still expect a greater need for services than indicated by the complete lack of service use in this sample.

There are several important limitations to this study. Our findings are based on self-report and thus subject to recall biases and social desirability. Given the nature of the TDV assessment, recall bias is expected to be minimal and social desirability should result in more and not less conservative TDV estimates, although overreport of perpetration is also possible. This work was undertaken in a single urban PED that sees patients through age 21

years and serves a largely low-income and African American population that experiences high rates of peer violence of all types, limiting generalizability of study findings. Additionally, not all eligible participants were willing or able to be found for follow-up telephone interviews, introducing potential bias in these findings. However, even if all of those lost to follow-up did access services, which is unlikely, still only approximately 50% would have used services. Finally, the sample size, while sufficient to assess hypotheses of this study, was too small to allow for more complex analyses on sex differences or type of violence differences in the associations between violence and risky health behaviors and outcomes (eg, alcohol use, pregnancy). Similar investigation at other PEDs and with larger samples will be required to confirm our findings and provide greater insight into these issues by differences in sex and type of TDV.

These findings have important clinical implications. Teen dating violence is extremely prevalent among adolescents presenting to a PED, with girls perpetrating violence at slightly higher rates than boys but feeling much more vulnerable to injury from TDV. Findings indicate that the PED may be an important place in which to initiate prevention programming, if an effective method can be developed for doing so in this venue. Health care providers in the PED should routinely screen male and female adolescents for TDV victimization and perpetration and should be aware of appropriate referrals and resources. However, future work needs to examine alternative ways in which adolescents can be referred for follow-up because this study demonstrates that simply providing written materials suggesting follow-up does not lead to adolescents accessing resources.

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**Author Contributions:** Dr Carroll had full access to all of the data in the study and takes responsibility for the integrity of the data and the accuracy of the data analysis. *Study concept and design:* Carroll and Bauchner. *Acquisition of data:* Carroll and Bauchner. *Analysis and interpretation of data:* Carroll, Raj, and Noel. *Drafting of the manuscript:* Carroll, Raj, Noel, and Bauchner. *Critical revision of the manuscript for important intellectual content:* Carroll, Raj, and Bauchner. *Statistical analysis:* Raj, Noel, and Bauchner. *Obtained funding:* Carroll and Bauchner. *Administrative, technical, and material support:* Carroll. *Study supervision:* Raj and Bauchner.

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