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Document Title: **Development of a New Measure of Adolescent Dating Aggression: National Norms with a Focus on Marginalized Youth**

Author(s): **Emily F. Rothman, ScD, Carlos A. Cuevas, Ph.D., Elizabeth Mumford, Ph.D., Bruce Taylor, Ph.D., Megan Bair-Merritt, MD, MSCE, Julia Campbell, MPH**

Document Number: **304976**

Date Received: **July 2022**

Award Number: **2016-IJ-CX-0006**

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FINAL SUMMARY OVERVIEW

Development of a New Measure of Adolescent Dating Aggression: National Norms with a Focus on Marginalized Youth

Grant No: 2016-IJ-CX-0006
Award Period: 1/1/17-12/31/21
Award amount: \$499,988

Submitted by:

Emily F. Rothman, ScD;¹ Principal Investigator
Carlos A. Cuevas, PhD;² Co-Investigator
Elizabeth Mumford, PhD;³ Co-Investigator
Bruce Taylor, PhD;³ Co-Investigator
Megan Bair-Merritt, MD, MSCE;⁴ Co-Investigator
and
Julia Campbell, MPH,¹ Research Assistant

¹ Boston University School of Public Health
Department of Community Health Sciences
801 Mass Ave., Floor 4
Boston, MA 02118
erothman@bu.edu

² Violence and Justice Research Laboratory
School of Criminology and Criminal Justice
Northeastern University

³ NORC at the University of Chicago
4350 East West Highway, 8th Floor, Bethesda MD 20814

⁴ Boston University School of Medicine, Boston, MA

Date submitted: July 30, 2021

This project was supported by Grant No. 2016-IJ-CX-0006 awarded by the National Institute of Justice, Office of Justice Programs, U.S. Department of Justice. Points of view in this document are those of the authors and do not necessarily represent the official position or policies of the U.S. Department of Justice.

INTRODUCTION

Adolescent dating abuse (ADA) is a prevalent and consequential public health and criminal justice problem in the US (NB: ADA is also called teen dating violence, teen dating abuse, adolescent dating aggression, and intimate partner violence). Nationally representative data collected from high school-youth in the US suggest that as many as 1 in 11 girls and 1 in 15 boys experience physical and/or sexual assault by a dating partner in the past year (Kann et al., 2018). Perpetration of ADA is also prevalent. Approximately 12% of U.S. adolescents ages 10–18 years old report perpetrating physical or sexual abuse in their dating relationships, and two-thirds report perpetrating psychological abuse (Taylor & Mumford, 2016).

Victims of ADA are at increased risk for a range of subsequent physical and mental health problems including depression, anxiety, post-traumatic stress disorder symptoms, self-harm, disordered eating, sexually transmitted infections, unplanned pregnancy, academic problems, injuries, and death (Ackard et al., 2007; Barakat & White, 2018; Coker et al., 2000; Exner-Cortens et al., 2013; Smith, 2013). The results of longitudinal studies suggest that survivors are also at increased risk for subsequent victimization (Duerksen & Woodin, 2019; Exner-Cortens et al., 2013; Hébert et al., 2019; Taylor et al., 2019). Therefore, conducting rigorous studies of ADA remains a priority.

For the past decade or more, a problem in the field of ADA research has been that dating behaviors and norms have changed and existing measures of dating abuse have become outdated. For example, some adolescents now meet their partners, communicate, spend time together, and even exchange intimacies, online and through social media. Measures of ADA that were first developed in the 1970s-1990s, such as the Conflict Tactics Scales (CTS) and other measures derived from it, are decreasingly likely to produce valid estimates of dating abuse because they

no longer assess dating behaviors comprehensively. Researchers have been creating new instruments to address the shortcomings of existing tools. A 2015 review of behavioral measures of ADA identified 48 measures in use in the field, although many lacked published psychometrics (Smith et al., 2015). Subsequently, a 2016 review of ADA measures with published psychometric properties found that, despite the multitude of instruments available, 95% of ADA research studies used only one of two measures—the CTS or the Conflict in Adolescent Dating Relationships Inventory (CADRI) (Exner-Cortens et al., 2016). This is problematic because the CTS was developed more than two decades ago to measure adult partner violence, and the CADRI does not ask questions specific to online or social media behaviors. As a result, these measures are potentially missing behaviors that are most relevant for adolescents today. Moreover, existing ADA instruments have been criticized for failing to capture the context in which the acts took place – for example, overlooking whether acts were perpetrated as a joke, or with an intention to scare or harm (Follingstad & Bush, 2014; Hamby, 2014).

The need for a new, comprehensive measure of ADA was identified in 2015 when the National Institute of Justice (NIJ) convened a meeting of 18 research experts to discuss the state of the science in teen dating violence measurement (National Institute of Justice, 2015). There was consensus that new measures of ADA were needed for several reasons, including the following: (a) adolescents' conceptual definition of "dating" had changed since the gold standard measures of ADA were first created (e.g., CADRI); (b) many youth have multiple partners, are in nonexclusive dating partnerships, or do not label their romantic partnerships as "dating" relationships, and thus measures with lead-in text that reference boyfriends/girlfriends or dating partners may bias results; (c) sexual and reproductive coercion items should be included in measures of ADA; (d) better assessment of psychological abuse were needed; and (e) more

attention to an optimal timeframe for recall (e.g., past year vs. lifetime) should be considered (National Institute of Justice, 2015). The need for ADA measures that were developed with formative participation from culturally, racially and ethnically diverse individuals was also raised as a priority (National Institute of Justice, 2015).

Summary of the project

The present project was designed in response to the NIJ call for the development of a new measure of ADA. The project comprised three studies designed to answer the following Key Study Questions:

Key Study Goals

1. To establish which acts of ADA historically marginalized youth, including Black, Hispanic/Latino/a, Indigenous/Native American, and Multiracial youth, consider important to include on a comprehensive measure of ADA.
 2. To establish psychometric properties of a new comprehensive measure of ADA using a population based, nationally representative sample of US youth ages 11 – 21 years old. Including evaluating factor structure, reliability, and validity.
 3. To determine the sensitivity and specificity of a 3-item short form of the comprehensive measure that can be used in clinical settings to screen youth for ADA victimization.
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DESIGN AND METHODS

This project comprised three sub-studies, herein referred to as Study 1, Study 2, and Study 3. Study 1 was a qualitative, focus group study involving 48 youth designed to generate rich information about how specific subgroups of youth perceived ADA acts in order to inform the development of a comprehensive survey measure (Rothman et al., 2020). Study 2 was a quantitative, population-based cross-sectional survey study that collected data from N=1,257 youth ages 11-21 years old in order to establish the psychometric properties of a new, comprehensive ADA measurement instrument (Rothman et al., 2021). Study 3 collected data via an online survey from 220 youth, ages 11-21 years old, in order to develop a three-item, clinical

screening tool for ADA victimization (Rothman et al., under review). For each study, procedures were approved by the PI's institutional review board (IRB), and a privacy certificate was obtained from the NIJ.

Study 1: Design and methods

Study 1 was a formative research study designed to collect opinion data from adolescents historically underrepresented in ADA research measure development (Rothman et al., 2020). We collected data from 48 US youth, ages 11-20 years old, through eight in-person focus groups, and seven telephone-based one-on-one interviews (*NB:* For descriptive statistics, see section below). Data collection took place in 2017. Inclusion criteria were being 11-21 years old and identifying as belonging to one or more of the subgroups of interest, which included Native American/Indian youth, Latine youth, Black and Multiracial youth, and lesbian, gay, bisexual, transgender, and other queer youth (LGBTQ+). We conducted two focus groups with Native American/American Indian youth (in Oregon), two focus groups with Latine youth (in Texas), and four focus groups with Black and Multiracial youth (in Massachusetts). Due to difficulty recruiting LGBTQ+ youth to attend an in-person focus group, because interested youth were located geographically distant from each other, we recruited seven LGBTQ+ youth to participate in one-on-one telephone-based interviews. All research participants received \$15 gift cards as remuneration for their time.

Focus group participants and interview subjects were asked the same 11 questions from a semi-structured focus group question guide. Five questions were on the topic of dating behaviors in general. In addition, six questions asked for reactions to a paper-based list of 75 abusive acts. A content-based analysis approach was used. Data were coded by two independent coders to highlight chunks of text that related to each of three primary themes: (1) new ADA acts, (2)

problems with ADA items already on the list of proposed items, and (3) how ADA may be specific to a subgroup.

Study 2: Design and methods

Study 2 collected data from N=1,257 US youth ages 11-21 through a cross-sectional, self-report survey in 2019 using our comprehensive measure of ADA. Inclusion criteria were being a member of the online AmeriSpeak survey panel (NORC, 2019), English-speaking, and in the desired age group. Participants received AmeriPoints worth \$20 as remuneration. For youth ages 11-17 years old, parents provided informed consent and youth provided assent. Adults ages 18+ years old provided informed consent.

All data were collected online via a self-administered survey. Participants answered demographic questions and completed a full-length version of the new instrument which was named the Measure of Adolescent Relationship Harassment and Abuse (MARSHA). The MARSHA included 39 victimization and 39 perpetration items. Participants also completed the 70-item CADRI, a 12-item version of the Juvenile Victimization Questionnaire, 13 items from the Frequency of Delinquency Behavior scale, 16 items from the Brief Symptom Inventory, and 14 ego-resiliency items.

As outlined in our published paper that describe results (see Rothman et al., 2021), we conducted an Exploratory Factor Analysis (EFA). The Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy for victimization and perpetration was close to 1 (KMO = 0.95 for victimization and 0.93 for perpetration) and Bartlett's test of sphericity was significant ($p < .001$ for victimization and perpetration), indicating that the data were suitable for factor analysis. Additionally, reliability and validity metrics were calculated on the final set of MARSHA items.

Study 3: Design and methods

Study 3 was a quantitative, cross-sectional survey study. This study enrolled 220 US youth ages 11-21 years old. Youth completed an online survey that asked 36 ADA victimization question from the MARSHA.

This study was originally planned to occur in a pediatric clinical setting in-person. However, pediatric care in the US in 2020 was often provided online due to the COVID-19 pandemic. As such, this research pivoted to online data collection with the idea that results could inform both in-person and online clinical encounters in the future. Subjects were recruited May-December 2020 through flyers posted in the pediatric emergency department at a large urban medical center in the Northeast, through Facebook advertisements, and emailed to undergraduates at a university in an urban setting in the Northeast. Flyers, emails, and online advertisements informed viewers that youth ages 11-21 years old with dating experience had the opportunity to participate in an online survey that would take 10 minutes. A link to the survey was provided and interested youth who clicked the link were directed to the eligibility survey. Eligible youth were those 11-21 years old, who could read and write in English, lived in the US, and reported that they were dating, hooking up, or in a romantic relationship in the past year. Eligible youth then viewed a consent statement (or an assent statement if they were younger than 18 years old). Parental consent was not required by the PI's IRB because risks to youth were low, the survey was anonymous, and participants could skip any questions that they did not want to answer. Those who consented advanced to the survey.

Participating youth completed the online survey which included not only the 36 MARSHA victimization questions, but 5 open-ended questions about dating abuse, and 39 MARHSA perpetration questions. Seventy-five of the closed-ended survey items had the same instructions and response options, and thus were easy to complete quickly. On average, it took

youth 10 minutes to complete the survey. After completing the survey, participants were directed to a separate survey (to maintain the anonymity of their substantive responses) that collected their email address for the project team to provide a \$5 Amazon.com gift card as remuneration. The sensitivity, specificity, positive predictive value, negative predictive value, and accuracy of the MARSHA-C to identify victims of DA was calculated.

RESULTS AND FINDINGS

Study 1: Participant demographics and project findings

As reported in our published paper, participants' ages ranged from 11 to 20 years, and the average age of the 48 participants was $16.4 \text{ years} \pm 2.09 \text{ years}$. The majority of participants were female (n=28, 58%), and 40% identified their sexual orientation as lesbian, gay, bisexual or another category other than heterosexual. Over half (56%) identified as Latine, 23% as Native American/Native Alaskan/Native Hawaiian, 13% identified as Black/African American, and 9% identified as Multiracial. One-third (33%) were native Spanish speakers. Approximately 63% reported that they had been in a dating relationship in the past year, and 84% reported that they had been in a dating relationship in their lifetime (Rothman et al., 2020).

Youth generated ideas for 10 new possible cyber-ADA items and 14 emotionally abusive items for inclusion on the ADA measurement instrument. They did not generate any new physical or sexual ADA items. Youth identified 14 acts that they felt should not be on the measure because the acts were not abusive, too common, because they couldn't understand the item, or because in their opinion it wasn't an abusive act (Rothman et al., 2020).

Study 2: Participant demographics and project findings

Participants (n=1,257) were 58% female, 47% White, 24% Latine, 30% Black, 8% Asian, 3% American Indian/Alaskan Native, and 4% another race (*NB*: participants could select more

than one race). The mean age was 18 years old ($SD = 2.9$). Approximately one-fifth (19%) reported gay, lesbian, or bisexual sexual orientation. Respondents were generally evenly distributed across the United States, and 60% had parents whose income was below the U.S. median.

The factor analysis resulted in the following decisions about the MARSHA instrument. Five victimization items were dropped because they did not load well on any factor in the victimization scale. The remaining 34 victimization items resulted in five factors, which were characterized as Privacy Control, Social Control, Physical Abuse, Sexual Abuse, and Intimidation. The item count for subscales ranged from four (Intimidation) to 10 (Privacy Control). One perpetration item was dropped because it did not load on any factor, and one perpetration item was dropped because it did not fit conceptually with the other items in the factor it loaded on. Six items loaded on more than one factor. These were retained with the factor on which they loaded more highly which was also consistent with face validity. The EFA on the remaining 37 perpetration items resulted in six factors which were labeled Social Control, Physical Abuse, Sexual Abuse, Isolation, Cyber Control, and Intimidation. The item count for the subscales ranged from six (Isolation) to nine (Social Control).

The study produced: the MARSHA victimization scale (34 items, with 3 supplemental items for youth ages 16-21 years old), and the MARSHA perpetration scale (37 items, with 3 supplemental items for youth ages 16-21 years old). The measures are prefaced with the same instructions, which read: “Think about all of the people you were dating, hooking up with or in a romantic relationship within the past year. Answer the following questions thinking about these people. How many times did the following things happen, not for fun or as a joke? Your best guess about the number of times is OK.” The response options are 0 times, 1-3 times, 4-10 times,

and more than 10 times for each item. Scoring instructions are provided on the copies of the instrument, which are freely available online here: <http://sites.bu.edu/rothmanlab/dating-abuse-perpetration-acts-scale/>. Given that the EFA showed that the MARSHA is a multidimensional scale, internal consistency using Cronbach's alpha was evaluated for each individual subscales. The reliability coefficients for the victimization items ($\alpha = 0.79$ to 0.90) and the perpetration items ($\alpha = 0.68$ to 0.86) were all in , the acceptable range (Rothman et al., 2021). The psychometric analysis also indicated strong validity support for the MARSHA.

Study 3: Participant demographics and project findings

The majority of participants (78.2%) were 17-21 years old, and the mean age was 18.6 (SD 2.4) years. The sample was 75% female, 22% male, and 3% non-binary or other gender, 41% white, 20% Asian, 18% Hispanic or Latino/a, 11% Black or African American, 8% Multiracial and 3% other race.

The receiver operator characteristic (ROC) curve demonstrated that a MARSHA-C score of 1 is the optimal cutpoint for detecting ADA victimization. This cutpoint has a sensitivity of 77.1% and a specificity of 81.0%. Using a MARSHA-C cutpoint of 1, we investigated accuracy of the test for the overall sample. Next, on an exploratory basis, we investigated sensitivity, specificity, and accuracy by subgroups of interest, including by gender, age, sexual orientation and race. Subgroup analyses for females (n=169), older adolescents (n=172), and heterosexual youth (n=155) were sufficiently powered to be considered non-exploratory, whereas subgroup analyses on males, younger adolescents and lesbian, gay and bisexual youth were exploratory. The subgroup analyses found that sensitivity, specificity, and accuracy did not vary widely by demographic subgroup. The accuracy of a screening test is the number of true positives and true negatives divided by the sample size. Using the whole sample, the MARSHA-C had an accuracy

of 80%. Accuracy was approximately equivalent for females and males, and heterosexual and sexual orientation minority youth.

The MARSHA-C ADA victimization screening test is prefaced with the following instruction: “Think about all of the people you were dating, hooking up with or in a romantic relationship with in the past year. Answer the following questions thinking about these people. Did the following things happen? (Do not count times when these things happened for fun or as a joke).” The three MARSHA-C questions are: “They yelled, screamed or swore at me,” “They slapped, pushed, shoved, or shook me,” and “They made me feel like I could not break up with them or get out of the relationship.” Response options for each are “yes” or “no.” Respondents are assigned one point for each “yes” answer. Total scores on the MARSHA-C range from zero to three. A score of one or more indicates likely presence of ADA victimization.

Expected applicability of the research

The overarching goal of this project was to improve available options for assessing and measuring ADA in US youth ages 11-21 years old, for both researchers and for practitioners. The research conducted resulted in three products that advance the field. First, we produced two new valid, reliable, psychometrically sound measures (i.e., survey instruments) of ADA victimization and ADA perpetration, which we call the MARSHA. These are now freely available to any researcher or practitioner that would like to use them. Second, we produced a three-item short version of the MARSHA victimization called the MARSHA-C. The MARSHA-C has acceptable sensitivity and specificity, and can be used in clinical or direct service environments as a rapid screener to determine if a youth may be experiencing ADA victimization. The improved capacity to measure ADA, in both research and practice settings,

should enhance our knowledge about the prevalence of ADA and our ability to respond to those who experience ADA.

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