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Document Title: Longitudinal Follow-up in the National Survey of Teen Relationships and Intimate Violence (STRiV)

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Document Number: 304988

Date Received: July 2022

Award Number: 2017-MU-CX-0031

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Final Summary Overview

Longitudinal Follow-up in the National Survey of Teen Relationships and Intimate Violence (STRiV)*

November 23, 2021

Report submitted to the National Institute of Justice
Grant # 2017-MU-CX-0031

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Acknowledgements: Points of views 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 or any other organization. This study was funded by the National Institute of Justice (Grant # 2017-MU-CX-0031) and we are grateful for this funding that allowed continued follow-up of the STRiV cohort of adolescents. We thank our Senior Grants Management Specialists Laurie Bright and Jessica Highland for their support. We would like to express our sincere gratitude to all youths and their parents who participated in this research. We would like to thank the academic experts who collaborated on the development of the new measures of relationship dynamics (Drs. Michele Cascardi, Anne DePrince, Pamela Orpinas, Emily Rothman, and Jeffrey R. Temple) as well as NORC staff Hannah Joseph, Mehera Baugher, Anne Limowski, Maria Bohri, Eva Bahrami, and Kai MacLean. Thanks also to the Knowledge Panel team for their collaboration recruiting and retaining the cohort from the probability-based KnowledgePanel.

Conflict of Interest: The authors have no conflicts of interest to disclose.

Financial Disclosure: The authors have no financial relationships relevant to this study to disclose.

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INTRODUCTION

With funding from the U.S. Department of Justice's National Institute of Justice,¹ we launched the National Survey on Teen Relationships and Intimate Violence (STRiV) in October 2013 as the first comprehensive national household survey specifically dedicated to gathering data about the issue of teens experiencing adolescent relationship abuse (ARA^a).^{2,3} From the outset, STRiV was also designed to collect data from a parent or caregiver (PCG) of participating STRiV youth (ages 10-18 at baseline). Baseline youth respondents were invited to participate in the wave 2 survey in October 2014. With continued NIJ support,⁴ we recontacted each household (the cohort of youth and one parent/caregiver) to collect STRiV waves 3 and 4, which were designed to capture developments in ARA from earlier adolescence to young adulthood and to identify ARA risk factors informing intervention efforts sensitive to gender, developmental, and contextual characteristics. Analyses of neighborhood effects on individual-level STRiV measures were made possible with the addition of tract-level geocodes with additional NIJ funding.⁵

The current STRiV project was designed, first, to develop a set of relationship dynamics (RDs) measures that serve as either positive or negative risk factors for ARA, and to measure RDs in this age group through STRiV waves 5 and 6.⁶ Within this objective, we sought to determine if there were coherent factors in the new RD scale that distinguished constructs describing a dating relationship in terms of strengths and vulnerabilities, in the context of extant (waves 1-4) measures of STRiV relationship qualities (RQs).^{7,8} From there, this study investigated whether there are distinct profiles of the interplay between RD strengths and vulnerabilities and whether these profiles could be distinguished by individual and familial characteristics. Additionally, we designed the updated instrumentation to allow for the study of the role of dating relationship dynamics and youth emotional regulation capacity in the longitudinal development of ARA victimization and perpetration. Building on the linked PCG data over time, the current project also aimed to investigate the role of new measures of parent/caregiver attitudes and communications with the study youth.

^a We define ARA to be inclusive of physical, emotional, verbal, psychological, or sexual abuse perpetrated by an adolescent against another adolescent with whom they are in a dating/romantic relationship (see Offenauer and Buchalter, 2011; see reference #2). Other terms used in the field and in our own research (in response to reviewer requests) are teen dating violence (TDV), adolescent dating abuse (ADA), and adolescent intimate partner violence (IPV). Following Arnett (2000; see reference #3), adolescence is considered by some to continue through emerging adulthood (often up to age 24).

METHODS

RD Measurement Development Study

To prepare for STRiV waves 5 and 6, we developed and pilot-tested a new set of RD measures building on prior research,^{9, 10} three rounds of testing, analyses to assess construct structure and validity, and the iterative review and input of a panel of ARA experts (see Acknowledgements). This iterative approach informed adjustments in each step of the pilot research. We conducted two pre-tests in sequential samples (recruited via Toluna's online opt-in panel) of daters (per pre-screen self-report) aged 15-24, with approximately 200 respondents in each pre-test. We then launched the pilot data collection effort in a national Toluna sample of n= 1,000 daters aged 15-24. In each of these data collections, we monitored the response rates for males and females, and for those ages 15-17 versus 18-24 to ensure distribution and representativeness across key subpopulations.

Nationally Representative Data Source

STRiV participants were recruited from the Knowledge Panel^b, a national household address-based probability sample (50,000+ members ages 18 and older) covering approximately 97% of U.S. households.^{11, 12} The Final Report describing STRiV waves 1 and 2 provide more details about Panel recruitment and methods.¹³ Each STRiV survey wave was conducted via web-based survey. After each wave of data collection, we applied the KnowledgePanel statistical weights¹⁴ (provided in the archived dataset) to assure national representativeness. The panel base weight takes into account a range of sampling and non-sampling error (e.g., non-response to panel recruitment and panel attrition), and was employed in a probability proportional to size (PPS) selection method for drawing sub-samples from KnowledgePanel. Using U.S. Census demographic and geographic distributions, Knowledge Panel staff conducted a sample-specific post-stratification process (applying an iterative raking procedure) to adjust for survey nonresponse and elements related to the study-specific sample design (oversampling

^b While data collection during waves 5 and 6 recruited the original cohort of STRiV respondents from the Knowledge Panel, a corporate change in management should be noted. During the planning stage for wave 5, GfK sold the Knowledge Panel section of their business to Ipsos, who administered the wave 5-6 data collection. Notably, there was continuity in Knowledge Panel senior project management for STRiV data collection from baseline through wave 6. However, it should be noted that references to the ownership of the Knowledge Panel and thus the STRiV cohort over the six waves of data collection shift from 'Knowledge Networks' to 'GfK' to 'Ipsos.'

households with youth), resulting in a weighted sample distribution at baseline (wave 1) that approximates the 2010 U.S. Census estimates, and adjusts for nonresponse at each subsequent wave.

Per approved IRB protocols, STRiV respondents were informed in advance and within the online survey that they could refuse to answer any questions or choose to opt out of the study at any time. If the recipient PCG consented to participate at baseline, an algorithm randomly chose an eligible household child to participate in the study (or if there was only one eligible child, that child was selected). Next, the participating PCG-child dyad received invitations by e-mail to complete the surveys (offered in English and Spanish), which were presented sequentially with child assent required prior to child participation. Phone calls were also made to non-responding participants. We used an at-risk protocol to aid any respondents who requested a referral for help.

STRiV Cohort Study Population – Waves 5 and 6

STRiV baseline recruitment was conducted from October 2013 to January 2014 from a nationally representative sample of 5,105 households with at least one resident youth (ages 10 to 18). Households were ineligible if the expected youth did not reside in the home (ineligible rate of about 7%). Participating households were asked to complete a PCG baseline survey (consent rate of 82.6%) and a separate youth (ages 10 to 18; assent rate of 98.3%) survey (completed privately) online. The final weighted baseline dyadic sample (both PCG and youth) response rate was 50% (PCG sample n= 2,645 for RR= 56%; youth sample n= 2,354), exceeding typical industry response rates.¹⁵ Subsequent waves of data collection were launched in October of 2014 (wave 2), 2015 (wave 3), and 2016 (wave 4).

Unlike the intervals between waves 1-4, there was a two-year gap before wave 5 to accommodate pilot RD measure development. Thus, we first contacted the STRiV cohort with a request that they update their contact information for the upcoming wave 5 survey. Second, we conducted a “re-contact survey” with the full baseline STRiV cohort to gather updated contact information. Since the STRiV cohort includes both active Knowledge Panelists and those who have withdrawn from the Knowledge Panel (i.e., not accepting new studies, but still eligible to participate in the STRiV study), we put special emphasis on reaching the latter group. Respondents who had withdrawn permanently from the KnowledgePanel and all ongoing studies were lost to follow-up (n=213 in wave 5 and n=278 in wave 6). Households were initially offered a \$20 incentive for completing each survey wave; the

incentive increased by increments of \$10 throughout the fielding period to encourage participation amongst hard-to-reach populations to a cap of \$60 for active members and \$70 for inactive members of the panel.

Wave 5 of data collection (October 2018 – September 2019) sent invitations to n=2,141 STRiV households (the participating PCG and youth were identified in the invitations). The completed wave 5 data collection resulted in a weighted n= 1,283 PCG surveys (53 completed in Spanish) and a weighted n= 1,319 youth surveys (48 completed in Spanish). The response rate (calculated from the total number of child full completes divided by the total invitations sent) was 61.3%. The wave 6 data collection (December 2019 – November 2020) sent invitations to n=2,076 STRiV households. The completed wave 6 data collection resulted in a weighted n= 1,447 PCG surveys (70 completed in Spanish) and a weighted n= 1,412 youth surveys (32 completed in Spanish). The wave 6 response rate of youth baseline respondents was 67.6%.

In wave 5, most of the STRiV youth cohort respondents were White (57%) or Hispanic (22%); 50.3% were male; and the average youth respondent was 19.0 years old. The wave 6 distribution by race and ethnicity was similar to wave 5. The average age of youth respondents in wave 6 was 20.5 years old, and the sample was 51.1% male. The median household income in wave 5 was \$92,500, and the median in wave 6 was \$112,500. Additional background household characteristics are featured in Appendix Table 1.

Measures

STRiV instrumentation is reviewed prior to each wave to include consistent measures for longitudinal analyses and to add new measures reflecting the developments of the field. Using the theoretical model of Bell and Naugle as a framework,¹⁶ STRiV measures may be categorized as *proximal antecedents* (mental health, emotional regulation and selected traits, delinquency, drug/alcohol use); *distal antecedents* (parental relationship quality, critical parenting, parental anger trait, parent's report on the youth's temperament, dating relationship quality for youth daters [RDs], peer network characteristics, adolescent financial literacy, finance in relationships, youth's exposure to violence, parent-youth relationship quality, adverse childhood experiences, and youth dating history); *immediate context* (items on alcohol/drug use at time of the incident and the events occurring prior to victimization incident such as hitting partner, yelling, etc.); and *verbal rules* (parental world views and attitudes about domestic violence, parent dating

rules, parents' communications about relationship qualities, youth conditional attitudes about violence, and youth's gender stereotypes/ mistrust, and gender roles). The key outcomes of interest were *adolescent relationship abuse (ARA)*, *sexual harassment (SH)*, and *sexual assault (SA) experiences*.

Relationship Dynamics. The final RDs constructs fielded in STRiV waves 5 and 6 included 68 items that were initially drawn from the literature and further developed in the RD measurement study described above.^{10, 17-19} These measures covered intimate self-disclosure, controlling behaviors, awkward communications, love and closeness, cheating behaviors, negative feelings, positive feelings, social benefit, social liability, and experiences with jealousy (see Results for more details). Most items queried respondents' own feelings, whereas the measures of controlling behaviors, jealousy, and cheating also asked respondents to comment on their partner's feelings and/or behavior.

ARA Outcomes. A key outcome measure throughout the STRiV study is ARA, which we measured through a modified version of the CADRI (Conflict in Adolescent Dating Relationships Inventory) to gauge the *prevalence, type,* and *frequency* of ARA victimization and perpetration in the subpopulation of daters. Our modified 62-item self-report scale measures overt and covert forms of violence both as a victim and a perpetrator, intimidation, and positive communication both expressed and experienced in dating relationships.²⁰ The instrument includes measures from Taylor et al.,²¹ Baum et al.,²² NCVS's Supplemental Victimization Survey (SVS), and the American Association of University Women²³ to assess sexual harassment and sexual assault.

Measures consistent with prior STRiV instruments. Measures that were fielded in prior STRiV waves included conditional tolerance/attitudes regarding when it is acceptable for violence to be perpetrated by males and/or females,^{24, 25} romantic partner characteristics (e.g. gender, age, school attendance/level), relationship characteristics, dating history, financial literacy, the role of finances in a romantic relationship, and youth exposure to violence. Other respondent characteristics that were measured included as well as youth psychological well-being via the MHI-5 scale,²⁶ substance use,^{27, 28} dispositional traits (aggression),²⁹ and sociodemographic characteristics.

New measures added in waves 5-6. New measures included problem behaviors (selling drugs, arrests, threatening or actually attacking another, stealing),³⁰⁻³² adverse childhood experiences (ACEs),³³ emotional regulation,³⁴ suicidality,³⁵ loneliness,³⁶ optimism,³⁷ self-control,³⁸ street code³⁹ (i.e., showing force or aggression in order to earn respect), sexual abuse^{40, 41} (with distinct questions of this construct asked to daters versus the general

population), and sexual assault victimization⁴² (general population, rather than limited to the dating sample).

PCG measures. From wave 1 through wave 6, we collected a set of variables in the PCG survey to capture demographic attributes (race, age, level of education, gender, employment status); household characteristics (whether the parent was the household head, household size, housing type, marital status, household income, and presence of household members); and geographical identifiers (state, rural/urban residency, and region). Waves 5 and 6 continued to gauge parental dating and marriage history, parent relationship quality,^{28, 43} parent intimate partner violence (IPV), and parental monitoring.^{28, 44} Wave 5 added new measures related to parental world views⁴⁵ and parental perception of RDs,⁴⁶ and wave 6 introduced measures of PCGs' own ACEs.³³

DATA ANALYSIS

The STRiV data were checked, cleaned, and recoded using SPSS 24.0 statistical software. The data underwent standard cleaning procedures, using SPSS to check for data completeness and to verify that the data values were correct and conformed to the original instruments. The statistical software packages used in our analyses (SPSS 24.0, Mplus 7.0, and Stata 15) allow for the use of sampling weights, adjust for complex sampling, and handle missing data. Stata and Mplus can also address highly imbalanced dichotomous outcomes (e.g., % of youth/young adults reporting any ARA), as well as manifest indicators of varying levels of measurement (i.e., nominal to continuous data). Knowledge Panel demographic post-stratification weights were applied to adjust both for non-coverage of the U.S. population as well as participant non-response.

For each wave of data, and for each analytic sample, we examined the distribution of our data with and without statistical weights and ran frequencies, measures of central tendency, and measures of dispersion with all the study variables. Bivariate associations and multi-collinearity were investigated with cross-tabulations, comparison of means, and correlation matrices. Multivariable analytic models were selected to address each research question as appropriate. Appropriate methods for continuous and dichotomous outcomes were applied in both cross-sectional and longitudinal models. Applying person-centered methods, latent class models were estimated to understand the profiles of RD constructs as well as to investigate the co-occurrence of sexual harassment victimization experiences, and youth reports of exposures to adverse childhood events, and distal outcomes.

RESULTS

Prior STRIV research has been reported in 17 peer-reviewed papers.^{9, 17, 47-61} Additional analyses under the current grant include the following six studies. First, the pilot research (see Methods above) resulted in a set of 68 RD measures fielded in the wave 5 data collection. Focusing on the dating RDs reported by the STRIV cohort, we estimated latent classes of four positive dynamics, six problematic dynamics, and three scales of adolescent relationship abuse (ARA). These analyses built on our prior research⁵² and, despite the developmental growth in the sample and methodological differences, found similar latent classes of Intense, Disengaged, Unhealthy, and Healthy RD profiles. In addition to developmental age, baseline emotional health is key to Healthy RD profiles. This manuscript is currently in peer review.

Second, based on our analyses that youth emotional health is a significant input to healthy dating relationships, we conducted analyses of youth respondents' exposure to ACEs and subsequent mental health and emotional traits as outcomes. These analyses are informed by input from developmental theories about attachment⁶² as well as neurobiological theory about neurodevelopment and inflammatory responses to early adversity.⁶³ Early adversities are linked to diminished social and emotional regulation skills,⁶⁴ poor coping strategies, and mood disorder.⁶⁵ The completed manuscript, which focuses on adolescent optimism and loneliness, will be submitted for peer review.

Third, we investigated the mechanism through which parental communication may affect the propensity to engage in ARA, per prior research,⁶⁶ by examining the connection between parental communication and youths' conditional tolerance for dating violence (CT).^{67, 68} Applying latent class analysis to assess patterns of how parents communicate with their adolescent children about relationship dynamics, we identified three distinct classes of parental communication on relationship dynamics (PCRD): Highly communicative, Communicative about partner qualities, and Non-communicative. We find that the probability of any CT is significantly lower among adolescents whose parents are highly communicative, when compared to youth whose parents communicate only about partner qualities. The next steps are to assess how PCRD is associated with ARA. These results, which will be submitted for peer review, illuminate a potential avenue to target for dating violence prevention strategies.

Fourth, drawing on the strengths of the STRIV design, we also examined how parent perspectives are related to youth delinquency outcomes. Recent theorizing and related analyses suggest that noncriminal attitudes and

associated behaviors (as well as direct modeling of antisocial behaviors or the transmission of criminogenic attitudes) are critical to understanding intergenerational processes.⁶⁹ We explored associations between parental attitudes/worldviews across domains such as gender socialization and relationship conduct, youth's own developing attitudes, and within-individual variability in self-reported delinquency/crime across the adolescent to young adult transition period. Our findings, which will be submitted for peer review, provide empirical support for the notion that parents' and children's interaction and communication matter for youths' attitudinal and delinquent development and, furthermore, suggest that additional research is needed on this wider arena of noncriminal attitudes.

Fifth, we examined the longitudinal relationship between SH and SA in the full cohort, regardless of dating status (this design also allows for a methodological investigation of individual perceptions of what constitutes SA within dating relationships). Using latent class analyses of seven indicators of SH victimization, we estimated a three-class model distinguishing a high level of SH, a class of verbal/visual SH, and a minimal or no experience of SH. Subsequently, we found a longitudinal association between the verbal/visual SH profiles and subsequent SA perpetration, four years later. Respondent characteristics associated with the SH profiles were as expected, with violence exposure associated with increased likelihood of being in the verbal/visual and high SH classes, thinking it was acceptable to hit a boyfriend associated with increased likelihood of being in the verbal/visual SH class, and higher emotional wellbeing associated with decreased likelihood of being in the high SH class. Once completed, we will submit the manuscript for peer review.

Finally, middle school boys are more likely to report experiencing electronic TDV victimization than middle school girls.⁷⁰ However, victimization rates for boys decrease across middle school, while they do not for girls.⁷⁰ We extend this limited body of longitudinal research by examining how electronic TDV and online sexual harassment (OSH), in early-mid adolescence, predict in-person SA victimization, in mid-late adolescence. Building on past STRIV research,⁶⁰ we examine how teens' history of sexual activity, current dating status, and their interaction, increase teens' risk for online TDV and OSH in early-mid adolescence, and further, how these factors longitudinally predict SA victimization in mid-late adolescence. OSH in Wave 1 was most often perpetrated by friends and same-age acquaintances, followed by dating partners or former partners. Individuals who had been asked to do something sexual online when they didn't want to, in early-mid adolescence, women, and sexually active teens in dating

relationships (may not be having sex with that specific partner), were at increased risk for SA victimization in mid-late adolescence.

DISCUSSION

The nationally representative STRiV dataset, both youth/young adults and an adult parent/caregiver from their household, consists of six annual waves of data, with geocodes available matched to waves 1-4. A key goal of this longitudinal research program has been to examine the prevalence of abuse in data relationships and associated risk and protective factors. Thus, STRiV longitudinal data are a unique source of dating behavior over time in an adolescent cohort with the consistent measurement of ARA perpetration among respondents ages 10-18 at baseline, as well as victimization, representing a significant contribution to the field. STRiV is also one of the few ARA data sources with dyadic data from parents/caregivers. Since STRiV was launched, there has been growing awareness of the need to measure perpetration, and to understand the correlates of perpetration, for the prevention of ARA from a public health perspective.⁷¹ Moreover, using the full sample, researchers can analyze attitudes about physical dating violence, SH experiences in person and online, sexual assault, bullying, and measures of juvenile delinquency. Consistent with the theoretical foundations of the longitudinal STRiV measurement, the data support analyses regarding proximal and distal predictors of ARA, peer relationships and behaviors, parental communications and behaviors, neighborhood factors, and individual characteristics.

Centrally, the current project extended prior STRiV measurement of the positive and problematic qualities of a given dating relationship through the development of a broad scale of relationship dynamics reflective of the input of youth, parents, and caregivers.¹⁰ These subscales reflect not only the dyadic dynamics of a dating relationship, but also the reality that youth may assess their dating partner in the context of family and peer perspectives, and that dating partners may have positive or negative familial and social benefits. Expanding our understanding of dating relationship qualities to include these nuanced interpretations can inform more nuanced ARA, IPV, and sexual violence prevention interventions. As noted in a recent systematic review,⁷¹ interventions with favorable results in terms of reducing or preventing these abuses all have a component about teaching about healthy relationships; knowing how the nationally representative STRiV adolescent cohort sees their own dating relationships can inform

the scale of youth relationship problems and provide a more palatable educational approach to shifting norms on healthy relationships.

The current study expanded available data on the social ecology of adolescent and young adult dating relationships through deeper investigation regarding relationship dynamics, perceptions of parental and peer perspectives, the nature of parental communications and world views, and a more detailed individual emotional landscape. With six waves of data, prior STRiV research has examined patterns of ARA,^{61, 72} conditional tolerance for hitting a dating partner,⁷³ briefer scales of relationship dynamics,^{74, 75} the role of adolescent financial behaviors in their dating relationship,^{17, 76} and the role played by the attitudes and behavior of parents/caregivers.^{48, 77} Results of STRiV analyses also point to the association between SH and ARA⁷⁸ and ecological analyses of how SH perpetration,⁵³ ARA victimization,⁵⁶ and dating abuse-related stalking and harassment⁵⁸ vary based on neighborhood census characteristics and FBI crime statistics. However, further research is warranted regarding the interplay of multiple levels of the social ecology, made possible through the archived STRiV data.

Key limitations to the STRiV data have been noted in prior reports.⁷⁹ First, although we used standard instrumentation to measure ARA experiences within a current or past-year dating relationship (more conservative than other lifetime measures of ARA), the STRiV data are subject to the usual limitations of self-report surveys (e.g., telescoping of problems, recall bias, and under-reporting of certain behaviors). Second, the measurement of sexual abuse was limited to four items due to the sensitivity of these items and the wide adolescent age range completing the STRiV surveys. Third, the self-administered national survey format did not allow for collection of detailed contextual information that might elucidate ARA acts of offense or defense, nor do the act-based CADRI measures capture intensity of or motivations for specific incidents. Fourth, the sampling frame was a household sample, such that the results are not necessarily representative of incarcerated youth, homeless youth or youth in foster care.

In conclusion, while there is beginning to be promising evidence of effective programs to prevent ARA, IPV, and sexual violence,⁷¹ preventing violence is an effort shared by parents, school administrators, clinicians and prevention scientists seeking to improve individual and public health. Results from STRiV analyses to date and the ongoing potential for further research using the six waves of STRiV data accessed through the publicly available archive⁸⁰ provide concrete value in support of this goal in this nationally representative study of ARA.

APPENDIX TABLE 1.

Appendix Table 1. STRiV youth sample description, STRiV 2018-2020, weighted*

	Wave 5		Wave 6	
	n	% / mean (S.D.)	n	% / mean (S.D.)
Age of youth	1319	19.0 (2.63)	1213	20.5 (2.70)
Gender of youth				
Female	656	49.7%	594	48.9%
Male	663	50.3%	621	51.1%
Race/ethnicity of Parents				
White	733	57.2%	709	57.5%
Black	148	11.6%	166	13.5%
Hispanic	280	21.9%	245	19.8%
Other	121	9.4%	113	9.2%
Household characteristics				
Median household income		\$92,500		\$112,500
Household size (mean & median)		3.72 & 4.0		3.78 & 4.0
Household income \$100,000+	627	48.8%	558	53.4%
Parents Education				
Never graduated high school	128	10.0%	121	9.8%
High school	334	26.0%	334	27.1%
Some college	351	27.4%	368	29.9%
4-year college degree or >	470	36.6%	409	33.2%
Location of residence				
South	465	36.2%	445	36.1%
West	307	23.9%	296	24.0%
Midwest	278	21.6%	255	20.7%
Northeast	234	18.2%	236	19.2%
Urban	1126	87.7%	1100	89.3%
Non-urban	157	12.3%	132	10.7%

*Out of a weighted baseline (wave 1) sample of n=2,354 youth respondents

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