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Parent-teen concordance of selected adverse childhood experiences in a national sample of teenagers: Findings from National Health Interview Survey – Teen

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Abstract

Background: Parent-reported surveys are commonly used in child health research. However, few national surveys have examined concordance between parent- and teen-reported Adverse Childhood Experiences (ACEs).

Objective: To examine concordance between parent- and teen-reported ACEs among a nationally representative sample of teens and understand sociodemographic correlates of concordance.

Participants and setting: Data were collected as part of the National Health Interview Survey (NHIS), an annual nationally representative survey of the United States, with parent-reported interviews and its follow-back survey, the National Health Interview Survey-Teen (NHIS-Teen), a self-administered web survey of youth aged 12–17 years.

Methods: Parent- and teen-reported ACEs, and several measures of concordance (e.g. weighted Cohen's kappa, prevalence adjusted bias adjusted kappa (PABAK)) are presented. Unadjusted logistic regressions tested associations between sociodemographic characteristics and likelihood of concordance for each ACE.

Results: ACEs prevalence based on parent report were lower compared to teen report (e.g. victim of or witnessed violence in the neighborhood, 6.5 % parent-reported vs. 15.5 %, teen-reported). Weighted Cohen's kappa statistics showed fair to moderate agreement (*k*s ranging from 0.27 to 0.53), with PABAK statistics showing slightly higher levels (*k*s ranging from 0.41 to 0.88).

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Declaration of competing interest

None.

CRediT authorship contribution statement

Amanda E. Ng: Writing – review & editing, Writing – original draft, Visualization, Methodology, Formal analysis, Data curation, Conceptualization. **Elizabeth Swedo:** Writing – review & editing, Writing – original draft, Methodology, Conceptualization.

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The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention (CDC).

Conclusions: There is discordance in ACEs reporting between teens and their parents, with parents less likely to report that their teen experience an ACE than teens are. This emphasizes the importance of collecting information directly from teenagers, which may help inform intervention work.

Keywords

Adolescent health; Adverse childhood experiences; Concordance; National Health Interview Survey; National Health Interview Survey-Teen; Social determinants of health

1. Introduction

Adverse childhood experiences (ACEs), defined as preventable, potentially traumatic events that occur in childhood (0–17 years) (CDC, 2019), are associated with a wide range of lifelong adverse behavioral, health, and social outcomes. These experiences can have significant impacts on adolescents' mental and physical health (Grant et al., 2003; Shonkoff, 2012). In the short-term, ACEs such as childhood physical abuse, assault, and sexual abuse, can cause acute stress reactions, post-traumatic stress disorder, and increase risk for suicidality (Ali et al., 2024; Low et al., 2012; Serafini et al., 2015; Thompson et al., 2023). Longer term, ACEs are associated with a host of negative physical, mental, and behavioral health outcomes, such as cardiovascular disease, cancer, and depression (Bellis et al., 2019; Daniélsdóttir et al., 2024; Felitti et al., 1998; March-Llanes et al., 2017; Petrucci et al., 2019; Serafini et al., 2015).

Assessing ACEs among children and adolescents often relies—at least in part—on parent report (Loveday et al., 2022; Popp et al., 2020; Szilagyi et al., 2016). Parent report is a common and generally accepted approach to collecting data on children's health and experiences, including ACEs. Examples of national parent-report surveys on health and ACEs in the United States include the National Survey of Children's Health (NSCH) (National Survey of Children's Health (NSCH) data query, 2022) and National Health Interview Survey (NHIS) (National Health Interview Survey, 2022 survey description, 2023).

Extant research suggests poor agreement between caregivers' and children's reports of ACEs. Most studies of concordance on violence-related ACEs suggest poor agreement between caregivers' reports and children's self-reports, with caregivers consistently underestimating the violence exposure reported by their child (Richters & Martinez, 1993; Thomson et al., 2002). One study concluded that for children of all ages, caregivers underestimated their child's violence victimization 58 % of the time; and for children 12 years or older, caregivers underestimated this 75 % of the time (Howard et al., 1999). A 2015 study of children, mothers, and fathers completing the Life Incidence of Traumatic Events Questionnaire found that agreement was low across many potentially traumatic events, including non-interpersonal events (Tingskull et al., 2015). A recent web panel study using Cohen's Kappa estimates to examine parent-child concordance on children's ACEs found moderate to substantial agreement between reporters for household challenge-related ACEs (e.g., parental separation/divorce, household substance use), but fair or less agreement

between reporters for ACEs related to violence and neglect (e.g., emotional abuse, contact sexual violence, physical neglect) (Licitis et al., 2024).

Lack of concordance between parents and children on reported ACEs may be, in part, related to children experiencing events outside of the supervision of their caregivers (Thomson et al., 2002). Additional potential contributors include poor relationship or communication between parent and child; fear of disclosure; fear of child welfare involvement; unwillingness to self- or proxy-report on certain behaviors or outcomes; stigma; and informants' unique perspectives, all of which may apply differently to parents versus children (De Los Reyes & Kazdin, 2005; Dirks et al., 2012; Knight et al., 2000).

Little is known about how sociodemographic factors such as race and ethnicity, household income, and parental education influence parent-child concordance on ACEs. A 2022 familial violence study found several sociodemographic factors associated with discordant reports of violence (compared to concordant reports of violence), including Hispanic ethnicity, married parents, and higher household income (Hogan et al., 2023). Licitis et al. (2024) found parent-child pairs with lesbian, gay, bisexual, or another sexual identity; non-Hispanic Black; Hispanic; or non-Hispanic multiracial or another race teens were more likely to be discordant in reporting ACEs compared to parent-child pairs with heterosexual or non-Hispanic White teens. They also found some differences in concordance by household income for some individual ACEs (e.g., witnessing community violence, household substance misuse, emotional neglect).

Quantifying the extent the prevalence of childhood ACEs differs based on type of reporter (parent versus child) and type of ACE is critical for understanding the strengths and limitations of each reporter for research and public health surveillance efforts. Additional studies are also needed to understand sociodemographic factors that may be associated with concordance on reporting of ACEs. The major objectives of the present study are to examine parent-teen concordance of ACEs in a national sample of teens, defined as the level of agreement between parent and teen responses, and to explore sociodemographic predictors of concordance.

2. Methods

2.1. Data source

Data from the National Health Interview Survey (NHIS) and its follow-back survey, National Health Interview Survey-Teen (NHIS-Teen) collected between July 2021 and December 2022 were used. NHIS is an annual nationally representative household survey of noninstitutionalized U.S. civilians conducted by the National Center for Health Statistics (NCHS) (National Health Interview Survey, 2021 Survey Description Document, 2022; National Health Interview Survey, 2022 survey description, 2023). Interviews are typically initiated face-to-face in respondents' homes with follow-ups conducted by telephone as needed. One adult (known as the "Sample Adult") aged 18 and older and one child (known as the "Sample Child") are randomly selected from each household; adults answer questions about themselves, while a knowledgeable adult (a parent, in 94 % of Sample Child interviews) answers questions about the Sample Child. Of eligible households with

completed rosters, 49.9 % completed the Sample Child interview in 2021 (National Health Interview Survey, 2021 Survey Description Document, 2022), and 45.8 % completed the Sample Child interview in 2022 (National Health Interview Survey, 2022 survey description, 2023). If the Sample Child was between 12 and 17 years of age, interviewers asked the child's parent for permission to invite them to participate in NHIS-Teen at the conclusion of the Sample Child interview.

NHIS-Teen is a web-based survey with a subset of non-responders receiving a mailed questionnaire, that collects information directly from teens on a variety of health topics, some of which are included on the NHIS Sample Child interview, and some of which are unique to NHIS-Teen. Thus, NHIS-Teen presents a unique opportunity to examine concordance between parent- and teen-report on topics related to teen health. More detailed information about NHIS-Teen and its methodology have been previously published (Zablotsky et al., 2023). The parent permission rate for NHIS-Teen between July 2021 and December 2022 was 61.2 % and the teen participation rate was 45.9 %, resulting in an overall NHIS-Teen interview rate of 28.1 %. The present analysis included 1137 parent-teen pairs with information on at least one paired variable of interest, out of 1176 potential pairs (3.3 % excluded due to missing data on key outcomes).

Both NHIS and NHIS-Teen were approved by the NCHS Ethics Review Board (ERB). For confidentiality purposes, data used in this analysis are not publicly available but may be requested via the NCHS Research Data Center (<https://www.cdc.gov/rdc/index.htm>).

2.2. Variables of interest

2.2.1. Adverse childhood experiences: NHIS and NHIS-Teen collected information on whether the teen had ever: (1) been a victim of or witnessed violence in the neighborhood; (2) been separated from a parent or guardian because the parent or guardian went to jail, prison, or a detention center (parental incarceration or detention); (3) lived with anyone who was mentally ill or severely depressed (household mental illness); (4) lived with anyone who had a problem with alcohol or drugs (household substance use); (5) lived with a parent or adult who frequently swore at them, insulted them, or put them down (emotional abuse); (6) experienced a time when their basic needs were not met, such as having enough to eat, being able to go to a doctor when they were sick, or having a place to stay (unmet basic needs); or (7) been treated or judged unfairly because of their race or ethnic group (racial discrimination). All items were binary, with yes/no response options and comparable phrasing between parent and teen surveys (Supplementary Table 1). Selected ACEs questions fielded on the NHIS were cognitively tested among parents (Massey et al., 2018). Teen ACEs question wording closely matched ACEs questions developed for the Youth Risk Behavior Survey (YRBS), a self-reported survey of adolescents. All YRBS ACEs questions were cognitively tested for comprehension and performance among youth (Massey & Virkar, 2022).

2.2.2. Sociodemographic characteristics: Sociodemographic characteristics were based on parent report (NHIS Sample Child Interview). These included sex (male vs. female), age group (12–14 vs. 15–17), race and Hispanic origin (Hispanic, Non-Hispanic

White, Non-Hispanic Black, Non-Hispanic Asian, and Non-Hispanic, Another single race or multiple race), family structure (two parents vs. any other family type (e.g. single parental or non-parental care)), and highest level of parents' education (high school diploma/general education development (GED) or less, some college, college degree or higher).

2.2.3. Analytic strategy: All analyses were completed using the NHIS-Teen sampling weight, developed by NCHS (Bramlett et al., 2023). Sampling weights were adjusted to account for parent permission and teen participation, therefore reduce the non-interview bias and resulting estimates are representative and generalizable to the 2021–2022 population of children aged 12–17 years. Weighted percent distributions of parent-reported sociodemographic characteristics were calculated. Weighted estimates of ACEs, using both parent- reported and teen-reported data, were also calculated, and z-tests were used to determine significant differences.

Percent agreement between parent and teen responses was calculated for each ACE. Responses were considered to be in concordance if parents and teens both responded “yes”, or both responded “no”. Responses were considered to be in disagreement if parents answered “yes” while teens responded “no”, or vice versa. Cases where data was missing for either the parent or the teen were not included in analyses.

Parent-teen concordance was examined using weighted Cohen's kappa (Cohen, 1960) and prevalence-adjusted bias-adjusted kappa statistics (PABAK) (Byrt et al., 1993). Values were categorized according to the strength of the kappa value (slight: 0.00–0.20, fair: 0.20–0.40, moderate: 0.40–0.60, substantial: 0.60–0.80, almost perfect: 0.80–1.00) (Warrens, 2015). PABAK was presented alongside Cohen's kappa, as Cohen's kappa may be difficult to interpret when the prevalence of an outcome of interest is small and there is bias in the distribution of responses. Cohen's kappa may also not fully account for biases that are introduced when differing methodologies are used for ascertainment, such as when comparing self-administered versus interviewer-administered surveys (Chen et al., 2009). For these reasons, multiple statistics are presented to enhance interpretation, including prevalence and bias indices. In exploratory analyses, separate logistic regressions were constructed to assess sociodemographic predictors of parent-teen concordance. Model 1 was unadjusted, and Model 2 included all sociodemographic variables within the same model. All estimates shown meet NCHS data presentation standards for proportions (Parker et al., 2017).

3. Results

Table 1 presents the weighted percent distribution of parent-reported sociodemographic characteristics of the study sample. Overall, about half of the teens were male (51.4 %), aged 12–14 years (51.4 %), non-Hispanic White (46.1 %) and had parents with a college degree or more (52.6 %). A large majority of teens lived in two-parent families (82.7 %).

Overall, 27.7 % of parents reported their child had at least one ACE compared to 43.8 % of teens who reported at least one ACE (Fig. 1; Table 2). A lower percentage of parents reported each ACE examined, when compared to their teens (victim of/witnessed violence

in the neighborhood: 6.5 % vs. 15.5 %; parental incarceration or detention: 6.2 % vs. 9.2 %; household mental illness: 11.3 % vs. 21.1 %; household substance use: 9.8 % vs. 16.7 %; experienced emotional abuse: 4.6 % vs. 16.1 %; experienced unmet basic needs: 4.1 % vs. 7.1 %; experienced racism: 6.9 % vs. 18.5 %). Z-tests indicated these differences were significant for every ACE except parental incarceration or detention and experienced unmet basic needs.

Fig. 2 presents percent agreement and disagreement between parents and teens for ACEs. In general, percent agreement between parents and their teens was high, percentages ranging from 83.6 % to 94.2 %. Where disagreement existed, it was more common that parents did not report an ACE when the teen reported it (e.g. household mental illness: parent no/teen yes, 12.7 %).

Weighted Cohen's kappa and PABAK statistics are presented in Table 2. Cohen's kappa showed fair agreement between parent-teen pairs for any ACE ($k = 0.39$), experienced racism ($k = 0.26$), being a victim of or witnessing violence in the neighborhood ($k = 0.27$), experienced emotional abuse ($k = 0.28$), and unmet basic needs ($k = 0.36$). Moderate agreement was shown for household mental illness ($k = 0.41$), parental incarceration or detention ($k = 0.53$) and household substance use ($k = 0.50$).

PABAK values showed higher agreement compared to Cohen's kappa, as anticipated given the low prevalence of several ACEs. Agreement for any ACE was moderate ($k = 0.41$) and substantial for household mental illness ($k = 0.67$) and experienced racism ($k = 0.69$). Agreement was almost perfect (k 's: 0.60–0.80) for all other ACEs (k 's ranging from 0.73 to 0.88).

Prevalence and bias indices are also presented in Table 2 for each ACE. In general, the prevalence index showed that the probability of concordance of a parent and teen both reporting "no" was higher than that of both the parent and teen both reporting "yes". Bias ranged from 0.02 for experienced unmet basic needs and parental incarceration or detention, to 0.17 for any ACE.

3.1. Sociodemographic predictors of concordance

Table 3 presents logistic regression models examining associations between parent-reported sociodemographic characteristics as predictors of parent-teen concordance (yes/yes and no/no). In the adjusted model, parent-teen concordance was more likely among boys compared to girls for household mental illness (AOR: 1.14, 95 % CI: 1.06–1.23), and experiencing emotional abuse (AOR: 1.14, 95 % CI: 1.07–1.22). Younger teenagers were more likely to be concordant with their parents' responses, with the difference reaching statistical significance for household mental illness (AOR: 1.08, 95 % CI: 1.01–1.16), and household substance use (AOR: 1.08, 95 % CI: 1.02–1.15).

Differences in concordance were also observed by race and Hispanic origin. In general, Hispanic teenagers were less likely to be concordant with their parents compared to non-Hispanic White teenagers (e.g. any ACE, AOR: 0.85, 95 % CI: 0.73–0.98). In contrast, non-Hispanic Asian teenagers were more likely to be concordant when reporting being a

victim of or witnessing violence in the neighborhood (AOR: 1.08, 95 % CI: 1.01–1.17) and experiencing unmet basic needs (AOR: 1.05, 95 % CI: 1.01–1.09). Non-Hispanic Black teenagers were more likely to be concordant when reporting household mental illness (AOR: 1.12, 95 % CI: 1.01–1.24) and substance abuse (AOR: 1.11, 95 % CI: 1.04–1.18). When reporting experiencing racism specifically, teenagers of all other racial or ethnic groups were less likely to be concordant with their parents' responses compared to non-Hispanic White teenagers (e.g. non-Hispanic Black, AOR: 0.70, 95 % CI: 0.58–0.85).

For parental incarceration, household mental illness, household substance abuse, and experiencing emotional abuse, parents with lower levels of educational attainment were less likely to be concordant with their teenagers compared to parents with a college degree or higher (e.g. high school diploma, GED, or less, household mental illness, AOR: 0.89, 95 % CI: 0.81–0.99).

4. Discussion

In this large, nationally representative survey of teens, teens were more likely to report ACEs than their parents. Nearly 44 % of adolescents reported any ACE versus 28 % of parents reporting on their child's behalf. These findings are consistent with previous studies, which have found discrepancies between parent and child reports of ACEs, with parents consistently less likely to report ACEs compared to children (Schreier et al., 2005; Stover et al., 2010), particularly for violence- and neglect-related ACEs (Licitis et al., 2024; Tang et al., 2024). Despite this difference in reporting, nationally representative self-reported data from adolescents are limited for most ACEs (Anderson et al., 2022). Parent reported prevalence of individual ACEs in this NHIS-Teen sample was comparable to the subset of parallel items that appear on the NSCH among those aged 12–17 years (e.g., prevalence household substance use was 9.8 % on NHIS, and 11.9 % on NSCH).

The largest relative differences between teen- and parent-reported ACEs were for experiencing any ACE, experiencing emotional abuse, experiencing racism, and household mental illness. The greater level of discordance for these ACEs may reflect parental unawareness for things that may occur outside the home (e.g. racism), or a difference in perception between parents and teens on what may constitutes emotional abuse or mental illness.

Concordance between adolescents and parents ranged from fair–moderate by weighted Cohen's Kappa statistics to substantial–almost perfect when using PABAK. Given the strengths and limitations of different concordance measures, as discussed previously, our study uses both weighted Cohen's Kappa and PABAK to provide a more comprehensive view of concordance. For all ACEs, PABAK values were higher than Cohen's Kappa statistics, suggesting that in part, a portion of discordance observed was due to low prevalence of certain ACEs. These findings are consistent with prior studies (Tang et al., 2024; Licitis et al., 2024) who found differences between parent-reported and child-reported victimization when using Cohen's Kappa, but strong agreement when using PABAK. However, given that some PABAK values still demonstrated lower levels of agreement (e.g. Any ACE, PABAK = 0.41; household mental illness, PABAK = 0.67), these results also

suggest that not all discordance observed was a result of low ACE prevalence (Feinstein et al., 1990; Tingskull et al., 2015).

Our study presents new insight into the likelihood of concordance between adolescents and their parents based on sociodemographic characteristics and the type of ACE. While not significant for all ACEs, concordance tended to be higher among parent-teen pairs when the teen was male, aged 12–14 years, non-Hispanic White, and where the parents' highest level of education was a college degree or higher. This echoes findings from Tang et al. (2024), which found that several community-level and demographic variables were associated with lower odds of concordance in parent-report and child-report of certain social victimization experiences, including parental perception of neighborhood safety, Black/African American race, or Hispanic/Latinx ethnicity. Concordance in reporting experiencing racism was less likely between parents and teens belonging to all other race and Hispanic origin groups compared to non-Hispanic White teens. The reasons for this finding are likely complex and multifactorial, but may include cultural norms (Elliott & Urquiza, 2006) and parents' own experiences with racial discrimination (Holloway & Varner, 2021).

This study is among the first to provide comparisons of parent- and teen-reported information using nationally representative data, which few, if any, prior studies have had the ability to do. Our study adds to the literature highlighting the importance of assessing ACEs via self-report when developmentally appropriate (as with teens) (Anderson et al., 2022; Tingskull et al., 2015). When direct reports from children are not possible, our study helps clarify interpretation of parent-reported findings on ACEs. In addition, because NHIS-Teen collects a comprehensive range of ACEs, some of which are not measured by other nationally representative teen-reported surveys (e.g. racial discrimination), these data are helpful to quantify associations between ACEs and health outcomes.

4.1. Limitations

Despite the strengths of this study, there were limitations. First, while this study is one of the first and largest to look at parent-teen concordance on ACEs at a national scale, the sample size limited the ability to examine associations between ACEs and health outcomes with lower prevalence. Future work may benefit from a larger sample size with sufficient power to examine additional associations between ACEs and health outcomes. Second, this study examined a limited set of ACEs. While this study increases understanding of prevalence of and concordance between parent- and teen-reported ACEs, important ACEs like specific experiences of violence and experiences of discrimination based on sexual orientation, or health condition or disability were not examined, as not all ACEs were asked of both parents and teenagers.

Other ACEs, including physical and sexual abuse, were also not fielded to either the parent or the teenager. It is possible that these types of questions may have different concordance patterns. However, due to sensitivity concerns, these items have also not been previously fielded on other national child-focused surveys and are unlikely to be included given the sensitivity of the information. Parent-reported ACE data on surveys are routinely collected on the NHIS and NSCH; having teen-reported data to help contextualize parent-reported data is helpful. Some items may also be interpreted differently based on the respondent (e.g.

respondents may define having a household substance use “problem” in different ways), which may have affected estimates. Third, while teens and parents were assured that the other party would not be able to access their answers, it is possible that social desirability bias from the parent or teen, as well as survey methodology differences (e.g. mode), may have influenced responses, and led to underreporting of ACEs, particularly for parents who provided responses to an interviewer. As noted previously, in 6 % of cases, a non-parent was reporting on behalf of the child, which may impact the accuracy of the information provided.

In regard to mode differences specifically, previous work has suggested that in-person interviewing may be more vulnerable to social desirability bias compared to web-based data collection (Kreuter et al., 2009); the impact of this difference may be exacerbated with more sensitive items, such as ACEs. It is possible that this mode difference may contribute to the observed differences between parent- and teen-report. Last, ACEs question responses were binary and limited our ability to examine the impact of severity or frequency of ACEs on parent-child concordance. Prior studies examining violence-related items suggest that concordance increases with the severity of exposure (Tang et al., 2024; Thomson et al., 2002); future studies are needed to better understand these nuances.

5. Conclusions

ACEs are prevalent among teens, and teen self-report of experiences are different from parent-report. These findings provide important context for interpreting ACEs data collected from parents. The prevalence of discordance between parent and teen for ACEs, particularly where teens report an ACE and parents did not, highlights the importance of collecting data directly from teens, and may help inform interventions focused on individuals with ACEs.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

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Data availability

The data that has been used is confidential.

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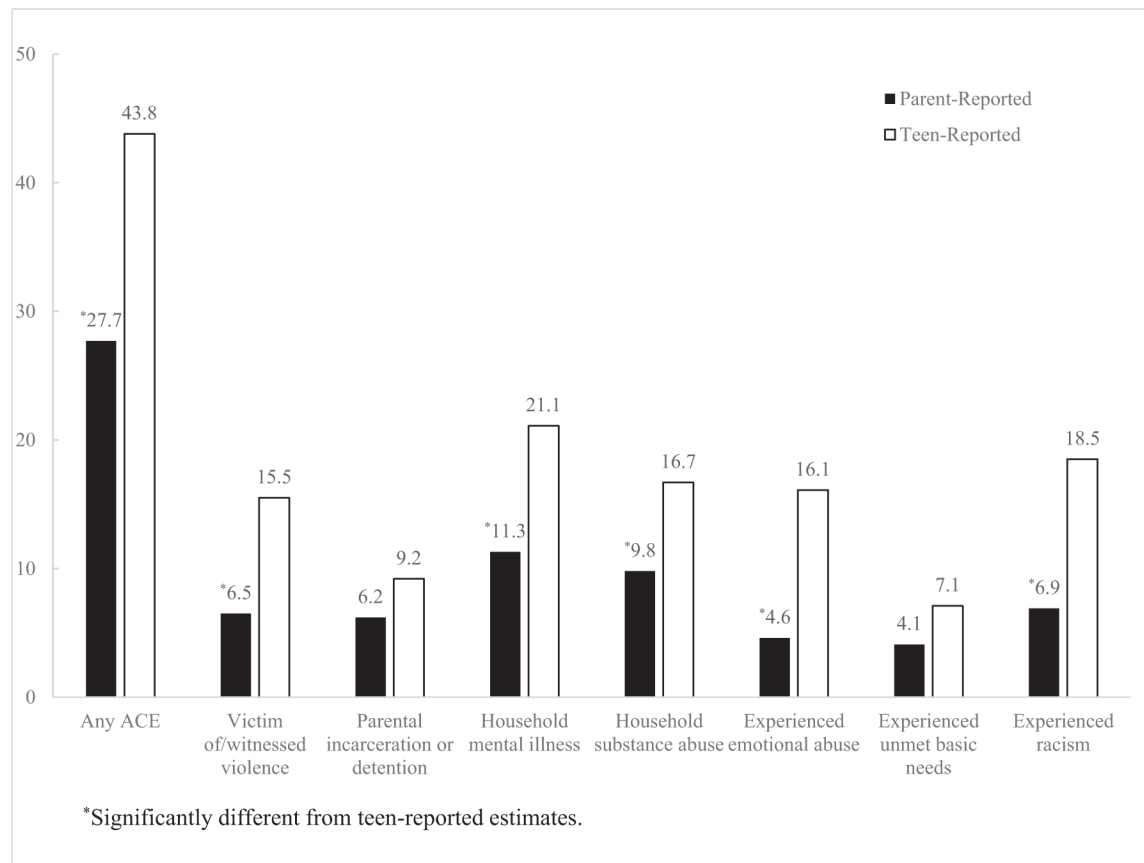


Fig. 1.
Parent- and teen-reported prevalence estimates of Adverse Childhood Experiences.

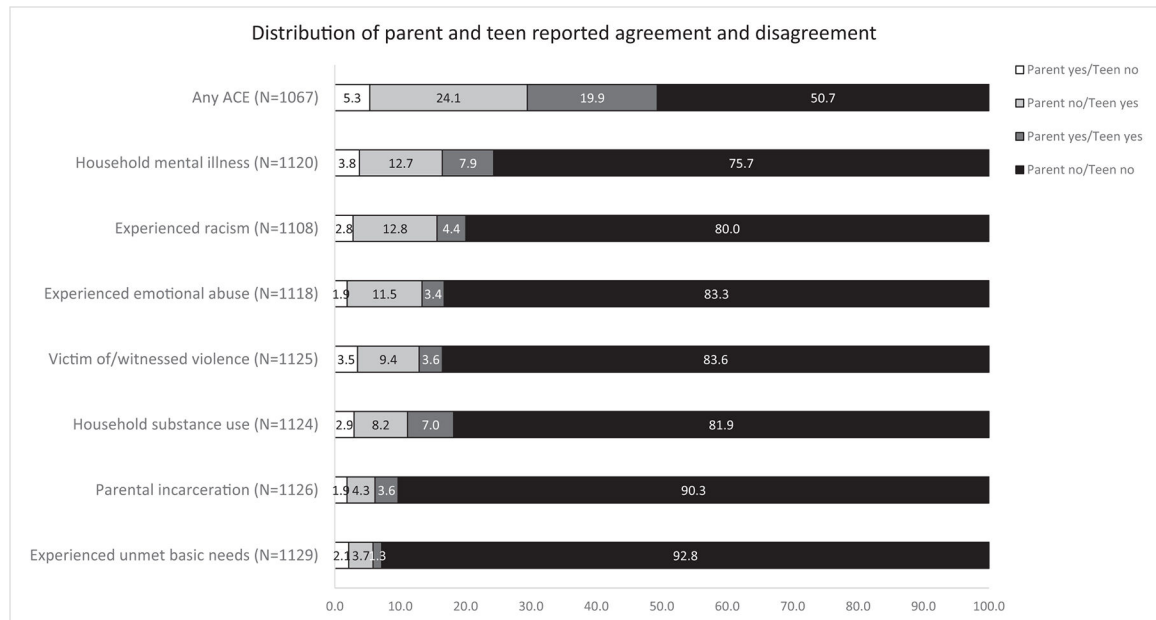


Fig. 2.
Percent distribution of parent-teen agreement and disagreement of Adverse Childhood Experiences.

Table 1

Percent distribution of sociodemographic characteristics: United States, July 2021-December 2022 ($N=1137$).

	Total (%)	(95 % CI)
Sex		
Male	51.4	(46.4, 56.3)
Female	48.6	(43.7, 53.6)
Age		
12–14	51.4	(46.3, 56.6)
15–17	48.6	(43.4, 53.7)
Race and Hispanic Origin		
Hispanic	30.4	(25.8, 35.4)
Non-Hispanic White	46.1	(41.4, 50.9)
Non-Hispanic Black	13.0	(9.6, 17.1)
Non-Hispanic Asian	5.5	(3.9, 7.5)
Non-Hispanic Another single race or multiple race	5.0	(3.0, 7.6)
Family Structure		
Two-parent family	82.7	(78.2, 86.5)
Any other family type ^a	17.3	(13.5, 21.8)
Highest Level of Parents' Education		
High school diploma, GED or less	25.3	(20.6, 30.6)
Some college	22.0	(18.1, 26.3)
College degree or higher	52.6	(47.3, 57.9)

NOTE: All sample characteristics are characterized based on parent-reported Sample Child interview responses and weighted using the NHIS-Teen weight. Teens of Hispanic origin may be of any race.

GED = general educational development.

^a Any other family type includes all families except two-parent families.

Table 2

Weighted estimates, weighted kappas, and prevalence adjusted bias adjusted kappas of parent and teen reported Adverse Childhood Experiences.

Adverse Childhood Experience (ACE)	Parent-Reported Estimates (95 % CI)	Teen-Reported Estimates (95 % CI)	Weighted Cohen's Kappa	Prevalence Adjusted Bias Adjusted Kappa	Prevalence Index	Bias Index
Any ACE (<i>N</i> = 1067)	27.7 (23.0, 32.7)	43.8 (39.0, 48.7)	0.39	0.41	-0.26	0.17
Victim of/witnessed violence in the neighborhood (<i>N</i> = 1125)	6.5 (4.0, 9.9)	15.5 (12.0, 19.6)	0.27	0.74	-0.84	0.07
Parental incarceration or detention (<i>N</i> = 1126)	6.2 (3.6, 9.8)	9.2 (6.1, 13.1)	0.53	0.88	-0.82	0.02
Household mental illness (<i>N</i> = 1120)	11.3 (8.0, 15.2)	21.1 (17.1, 25.6)	0.41	0.67	-0.65	0.08
Household substance use (<i>N</i> = 1124)	9.8 (6.6, 13.7)	16.7 (12.9, 21.1)	0.50	0.78	-0.70	0.05
Experienced emotional abuse (<i>N</i> = 1118)	4.6 (2.6, 7.3)	16.1 (12.4, 20.3)	0.28	0.73	-0.77	0.11
Experienced unmet basic needs (<i>N</i> = 1129)	4.1 (2.0, 7.3)	7.1 (4.2, 10.8)	0.36	0.88	-0.88	0.02
Experienced racism (<i>N</i> = 1108)	6.9 (4.7, 9.7)	18.5 (14.6, 22.8)	0.26	0.69	-0.80	0.12

NOTE: CI = confidence interval. All estimates and kappa statistics use the NHIS-Teen weight. Prevalence adjusted bias adjusted kappa values are not weighted. The prevalence index estimates the difference between the probability of "Yes" and the probability of "No", or (a-d)/N. The prevalence index is 0 when the probability of "Yes" and the probability of "No" are equal, closer to 1 when the probability of "Yes" is greater, and closer to -1 when the probability of "No" is greater. The bias index is equal to the difference in proportions of "Yes" for the two responses, or (a + b)/N-(a + c)/N.

Table 3

Odds ratios and 95 % confidence intervals showing associations between sociodemographic characteristics and parent-teen concordance of Adverse Childhood Experiences.

	Any Adverse Childhood Experience (N = 1067)	Victim of or witnessed violence in the neighborhood (N = 1125)	Parental incarceration (N = 1126)	Household mental illness (N = 1120)	Household substance abuse (N = 1124)	Experienced emotional abuse (N = 1118)	Experienced unmet basic needs (N = 1129)	Experienced racism (N = 1108)
Model 1: Unadjusted								
Sex								
Male	1.06 (0.96, 1.17)	1.03 (0.96, 1.10)	1.01 (0.97, 1.06)	1.12 (1.05, 1.20)	1.01 (0.95, 1.08)	1.16 (1.09, 1.25)	1.03 (0.99, 1.08)	1.08 (1.01, 1.16)
Female	ref	ref	ref	ref	ref	ref	ref	ref
Age								
12–14	1.13 (1.02, 1.25)	1.00 (0.94, 1.07)	1.03 (0.99, 1.08)	1.09 (1.02, 1.17)	1.10 (1.04, 1.17)	1.02 (0.96, 1.09)	1.02 (0.98, 1.07)	1.06 (0.99, 1.14)
15–17	ref	ref	ref	ref	ref	ref	ref	ref
Race and Hispanic Origin								
Hispanic	0.83 (0.72, 0.94)	0.99 (0.92, 1.08)	0.95 (0.90, 1.01)	0.94 (0.86, 1.04)	0.97 (0.91, 1.05)	1.00 (0.93, 1.08)	0.97 (0.91, 1.03)	0.89 (0.81, 0.97)
Non-Hispanic White	ref	ref	ref	ref	ref	ref	ref	ref
Non-Hispanic Black	0.77 (0.61, 0.97)	0.99 (0.89, 1.10)	0.86 (0.76, 0.97)	1.07 (0.96, 1.18)	1.04 (0.95, 1.14)	0.85 (0.73, 0.99)	0.95 (0.87, 1.05)	0.68 (0.56, 0.83)
Non-Hispanic Asian	0.85 (0.70, 1.02)	1.10 (1.03, 1.17)	1.03 (0.998, 1.07)	1.05 (0.95, 1.15)	1.08 (1.02, 1.15)	1.05 (0.98, 1.14)	1.05 (1.02, 1.08)	0.80 (0.69, 0.93)
Another single race or multiple race	0.92 (0.75, 1.12)	0.95 (0.82, 1.11)	0.97 (0.89, 1.07)	0.98 (0.85, 1.14)	0.94 (0.80, 1.11)	0.93 (0.78, 1.10)	1.01 (0.95, 1.07)	0.75 (0.61, 0.92)
Family Structure								
Two- parent family	ref	ref	ref	ref	ref	ref	ref	ref
Any other family type	1.01 (0.88, 1.15)	0.99 (0.90, 1.09)	0.93 (0.86, 1.01)	0.95 (0.85, 1.06)	0.93 (0.85, 1.03)	0.92 (0.83, 1.03)	0.98 (0.91, 1.05)	0.92 (0.81, 1.05)
Highest Level of Parents' Education								
High school diploma, GED or less	0.89 (0.78, 1.03)	0.92 (0.84, 1.00)	0.91 (0.86, 0.97)	0.89 (0.81, 0.99)	0.89 (0.82, 0.96)	0.89 (0.80, 0.98)	0.95 (0.89, 1.01)	0.98 (0.89, 1.07)

	Any Adverse Childhood Experience (N = 1067)	Victim of or witnessed violence in the neighborhood (N = 1125)	Parental incarceration (N = 1126)	Household mental illness (N = 1120)	Household substance abuse (N = 1124)	Experienced emotional abuse (N = 1118)	Experienced unmet basic needs (N = 1129)	Experienced racism (N = 1108)
Some college	0.92 (0.81, 1.06)	0.93 (0.85, 1.01)	0.91 (0.85, 0.97)	0.88 (0.81, 0.96)	0.90 (0.83, 0.97)	0.89 (0.82, 0.97)	0.94 (0.88, 1.00)	0.99 (0.91, 1.08)
College degree or higher	ref	ref	ref	ref	ref	ref	ref	ref
Model 2: Adjusted								
Sex								
Male	1.05 (0.95–1.15)	1.00 (0.94–1.07)	1.00 (0.96–1.04)	1.14 (1.06-1.23)	1.02 (0.96–1.08)	1.14 (1.07-1.22)	1.03 (0.98–1.07)	1.05 (0.98–1.12)
Female	ref	ref	ref	ref	ref	ref	ref	ref
Age								
12–14	1.10 (0.99–1.23)	1.00 (0.94–1.07)	1.01 (0.97–1.05)	1.08 (1.01-1.16)	1.08 (1.02-1.15)	0.99 (0.93–1.05)	1.02 (0.97–1.06)	1.04 (0.97–1.11)
15–17	ref	ref	ref	ref	ref	ref	ref	ref
Race and Hispanic Origin								
Hispanic	0.85 (0.73-0.98)	1.02 (0.93–1.11)	0.97 (0.92–1.03)	0.99 (0.89–1.10)	1.02 (0.95–1.10)	1.06 (0.98–1.14)	0.98 (0.93–1.05)	0.87 (0.79-0.95)
Non-Hispanic White	ref	ref	ref	ref	ref	ref	ref	ref
Non-Hispanic Black	0.80 (0.63–1.00)	1.04 (0.95–1.14)	0.94 (0.87–1.01)	1.12 (1.01-1.24)	1.11 (1.04-1.18)	0.98 (0.87–1.11)	0.97 (0.90–1.05)	0.70 (0.58-0.85)
Non-Hispanic Asian	0.85 (0.71–1.03)	1.08 (1.01-1.17)	1.02 (0.97–1.08)	1.03 (0.92–1.15)	1.08 (1.00–1.16)	1.03 (0.93–1.15)	1.05 (1.01-1.09)	0.80 (0.69-0.92)
Another single race or multiple race	0.95 (0.78–1.16)	0.94 (0.81–1.10)	0.97 (0.87–1.07)	1.00 (0.85–1.17)	0.95 (0.79–1.13)	0.90 (0.74–1.10)	1.01 (0.95–1.08)	0.75 (0.62-0.92)
Family Structure								
Two-parent family	ref	ref	ref	ref	ref	ref	ref	ref
Any other family type	1.04 (0.91–1.19)	1.01 (0.93–1.09)	0.97 (0.91–1.03)	0.94 (0.84–1.05)	0.95 (0.86–1.04)	0.93 (0.83–1.03)	0.99 (0.93–1.05)	0.97 (0.88–1.07)
Highest Level of Parents' Education								
High school diploma,	0.97 (0.84–1.12)	0.91 (0.82–1.10)	0.93 (0.87-0.99)	0.91 (0.82–1.02)	0.89 (0.82-0.97)	0.85 (0.76-0.96)	0.96 (0.90–1.03)	1.03 (0.94–1.13)

	Any Adverse Childhood Experience (N = 1067)	Victim of or witnessed violence in the neighborhood (N = 1125)	Parental incarceration (N = 1126)	Household mental illness (N = 1120)	Household substance abuse (N = 1124)	Experienced emotional abuse (N = 1118)	Experienced unmet basic needs (N = 1129)	Experienced racism (N = 1108)
GED or less								
Some college	0.95 (0.83– 1.09)	0.93 (0.86– 1.01)	0.92 (0.87-0.97)	0.89 (0.81-0.98)	0.90 (0.83-0.97)	0.91 (0.84-0.98)	0.95 (0.89– 1.00)	1.03 (0.95– 1.12)
College degree or higher	ref	ref	ref	ref	ref	ref	ref	ref

NOTE: All sociodemographic characteristics are parent-reported as part of the NHIS Sample Child Interview. Adjusted models include all sociodemographic characteristics in the same model. All analyses use the NHIS-Teen weight. Some confidence intervals may include one due to rounding, but significance at $p < 0.05$ is indicated by bolding. Teens of Hispanic origin may be of any race. Any other family type includes all families except two-parent families. GED = general educational development.

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