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Mental Health Problems in Teens Investigated by U.S. Child Welfare Agencies

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 A B S T R A C T

Purpose: To examine prevalence and correlates of five mental health (MH) problems among 12–17.5 year olds investigated by child welfare.

Methods: Data from the National Survey on Child and Adolescent Well-being (NSCAW II) were analyzed to examine depression, anxiety, substance use/abuse, suicidality, and attention deficit hyperactivity disorder (ADHD) as reported by teens and their caregivers. In a sample of 815 adolescents, prevalence for each MH problem and correlates (e.g., age, placement location) were identified using bivariate and multivariable logistic analyses.

Results: After investigation for maltreatment, 42.7% of teens reported at least one MH problem, regardless of placement. Nine percent reported depression, 13.9% reported suicidality, 23% had substance use/abuse, 13.5% reported anxiety, and 18.6% had ADHD. Of 332 teens with any MH problem, 52.1% reported only one problem, 28.3% had two problems, and 19.6% had \geq three problems. Teens with prior out-of-home placement had odds 2.29 times higher of reporting a MH problem and odds 2.12 times higher of reporting substance use/abuse. Males were significantly less likely to report depression. Older teens were more likely to report substance use/abuse. Black teens were significantly less likely to report suicidality and ADHD and almost half as likely to report anxiety. Teens with a chronic health condition and teens whose caregiver reported depression had more than twice the odds of reporting anxiety.

Conclusions: This study highlights high rates of MH problems in teens of all ages and placement locations and suggests that all teens involved with child welfare should be screened for MH problems, regardless of initial placement status.

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 IMPLICATIONS AND
 CONTRIBUTION

Using data from the National Survey on Child and Adolescent Well-being (NSCAW II), we expand on prior studies by reporting prevalence and correlates of mental health (MH) problems in adolescents across varied initial placements, using the full range of adolescent ages, and considering the time frame of ascertainment for each MH problem.

Adolescents experience high rates of mental health (MH) problems, such as depression, anxiety, and substance abuse. National prevalence estimates of MH disorders among teens are

40.3% over 12 months and 23.4% over the past 30 days [1]. Teens investigated for alleged maltreatment are at particularly high risk for MH problems [2–4]. Identifying and treating these adolescents is critically important because data from the Adverse Childhood Experiences (ACE) study point to childhood abuse and neglect as precursors for adult physical and MH problems, including substance abuse, sexually transmitted diseases, and criminal behavior [5].

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Teens investigated for child maltreatment are more likely to remain at home following investigation than younger children [6]. Despite this, most studies examining MH problems for teens involved with child welfare focus on those in foster care and suggest that rates of MH problems range from 40% to 80% [7,8], depending on the population studied and methods of identification. Data from the 2000 National Household Survey on Drug Abuse suggest that adolescents aged 12–17 years who had ever been in foster care had a higher prevalence of psychiatric symptoms, drug use disorders, and suicide attempts than those never placed in foster care [9]. Among older teens in foster care in three Midwestern states, rates of post-traumatic stress disorder, substance abuse, and depression were 15.1%, 14.1%, and 10.5% respectively [10]. McMillen et al. examined 373 17-year-olds in the foster care system in Missouri and found that 61% had at least one psychiatric disorder in their lifetime, with 62% having their earliest presentation prior to entering foster care [11].

Only one prior study, the National Survey on Child and Adolescent Well-Being (NSCAW I), a nationally representative, longitudinal study of children ages birth to 15 years, provided an opportunity to examine MH problems in teens referred to child welfare, regardless of their initial placement. Using these data, Leslie et al. found that almost half of the 11- to 15-year-olds indicated >1 MH problem, with 30-day rates of depression, suicidality, and alcohol abuse of 13%, 7.9%, and 16.1% respectively [12]. While this study evaluated children living in both out-of-home and in-home placements, only younger teens were included in the NSCAW I cohort. Similar prevalence for MH problems was reported by Orton et al. using NSCAW I data, who also noted that 87% of teens remained at home [13].

Previous studies have not consistently examined MH problems across the range of placement locations (e.g., in-home, foster care, kinship care) through both early and late adolescence. The time frame for ascertainment has varied across studies, ranging from 2 weeks to 12 months. Although all prior rates of teen MH problems are high, comparisons across age groups and placement settings remain challenging, yet a second National Survey on Child and Adolescent Well-being (NSCAW II) provides data on a nationally representative sample of children who have been investigated for maltreatment up to age 17.5 years. Teens in this sample, especially those who remain at home, are an at-risk population that has not been extensively studied in previous reports. Using data from this national cohort, we examine the prevalence and associated correlates of MH disorders in teens who remain at home or are placed in foster care. These analyses expand beyond prior studies of teens in foster care by allowing comparisons of the prevalence and correlates of MH problems of adolescents across a spectrum of initial placements and the full adolescent-age range.

Methods

Design and analytic sample

We used data from NSCAW II, a 3-year longitudinal study of 5,872 youth ages 0–17.5 years referred to U.S. child welfare agencies, for whom an investigation of alleged maltreatment was completed during the sampling period (February 2008 to April 2009). The study excluded agencies in eight states in which law required first contact of a caregiver by agency staff rather than by study staff [14]. Data from the initial interviews were collected within approximately 4 months of completed child welfare

investigations. NSCAW II, like its predecessor NSCAW I, employed a two-stage stratified sample design. The first stage selected geographic areas containing a population served by a single child welfare agency. These primary sampling units (PSUs), typically counties, served as the basis from which a sample of children was drawn. NSCAW II used NSCAW I PSUs whenever possible. Seventy-one of the 92 PSUs in NSCAW I were eligible and agreed to participate in NSCAW II and 10 additional PSUs were added to replace the PSUs not participating. This sample was constructed to be representative of all children in the U.S. who were subjects of agencies' investigations for alleged maltreatment during the sampling period [15]. Data for these analyses come from the baseline interviews completed between March 2008 and September 2009. Because this study focuses on MH problems in teens, analyses reported in this manuscript used data only for children ≥ 12 years of age at the time of the baseline interview ($N = 815$) and their caregivers. All procedures for NSCAW II were approved by the Research Triangle Institute's Institutional Review Board and all analytic work on the NSCAW II de-identified data by the Rady Children's Hospital Institutional Review Board.

Analysis weights

Analysis weights were constructed in stages corresponding to the stages of the sample design, accounting for the probability of county selection and the probability of each child's selection within a county, given the youth's county of residence. Weights were further adjusted to account for population differences from those expected on the frame, small deviations from the original plan that occurred during sampling, and for nonresponse patterns and replacement PSUs. The weighting process for NSCAW II was more complex than for NSCAW I [14]. All analyses presented utilized weighting in analyses. Nonweighted cell sizes are presented for some analyses to provide detail about the amount of data upon which analyses are based. All variables were generated using these weights and can be inferred to the U.S. child welfare population [14].

Survey design and assessment procedures

Measures. Sociodemographic variables included child's age, sex, and race; child-welfare-related variables including location of placement, type of maltreatment, and prior history of involvement with child welfare. Placement location was characterized as in-home with child protective services, in-home without child protective services, nonrelative foster care, or kinship care (formal and informal). Adolescents who were placed in group or residential settings were excluded in these analyses because of small numbers and the fact that such settings are often intentionally therapeutic for the outcomes examined in this study.

The presence of a chronic physical health condition was assessed during baseline interviews by asking about the presence/absence of any of nine chronic health problems; it is well-documented that chronic physical health conditions and MH problems often co-occur in children [16–18]. The following chronic conditions were included: asthma, autism, Down syndrome, mental retardation or developmental delay, diabetes, cystic fibrosis, cerebral palsy, muscular dystrophy, and human immunodeficiency virus/acquired immune deficiency syndrome (HIV/AIDS).

Caregiver depression (anhedonia/dysphoria) was measured using the Composite International Diagnostic Interview Short-Form. This brief self-administered questionnaire was modified

Table 1
Mental health problems by teen sociodemographic, placement and caregiver characteristics

	Total N = 815	Any of the 5 problems N = 332 (42.7%)	Depression N = 69 (8.9%)	Suicidality N = 91 (13.9%)	Substance use/ abuse N = 169 (23%)	Anxiety N = 103 (13.5%)	ADHD N = 136 (18.6%)
	% (SE)	% (SE)	% (SE)	% (SE)	% (SE)	% (SE)	% (SE)
Child age					**		
12–14	58 (3)	39.1 (3.8)	8.4 (1.8)	15.9 (2.9)	15.6 (2.8)	13.1 (2.8)	19.1 (3.2)
15–18	42 (3)	47.8 (5.5)	9.5 (2.3)	11.3 (3.1)	33.0 (5)	13.2 (2.6)	17.9 (3.3)
Child sex			***	**			
Male	40.1 (2.9)	37.1 (4.9)	1.9 (.7)	6.4 (2.1)	21.5 (4.3)	11.2 (2.8)	15.5 (2.9)
Female	59.9 (2.9)	46.5 (3.8)	13.6 (2.3)	19.0 (3.3)	24.0 (3.2)	15.1 (2.5)	20.7 (2.9)
Child race				*		*	**
Black	18 (2.7)	32.2 (6.2)	6.4 (2.8)	5 (2)	22.8 (6.4)	5.4 (1.8)	5.8 (2.4)
White	44.4 (4.5)	43.1 (4.2)	8.8 (2.1)	12.9 (2.8)	20.4 (3.4)	14.1 (3)	25.0 (3.6)
Hispanic	28.2 (3.9)	48.7 (5.8)	10.2 (2.9)	18.5 (5.3)	25.5 (5.4)	18.2 (5.2)	18.7 (4.1)
Other	9.4 (1.5)	46.5 (9.5)	11.1 (5)	23.3 (9.6)	30.2 (9.5)	13.2 (5.6)	13.7 (5.3)
Maltreatment, primary type			*	*			
Physical/sexual abuse	37.1 (3.6)	45.6 (5.1)	15.4 (3.5)	21.5 (4.5)	25.8 (4.3)	15.5 (3.6)	22.3 (3.6)
Neglect	26.3 (2.8)	35.2 (5.1)	5.6 (1.9)	10.4 (3.2)	15 (3.8)	9.1 (2.6)	16.5 (4.3)
Other abuse	36.6 (3.3)	44.3 (5.3)	6.2 (2)	7.9 (2.1)	23.3 (5.1)	20.3 (4.7)	20.9 (3.1)
Child placement							
In home, no CWS	56.1 (4.1)	38.5 (4.5)	8.8 (2.1)	14.9 (3.5)	20.8 (3.2)	10.2 (2.2)	16.4 (3.2)
In home, with CWS	27 (4)	46.8 (4.6)	8.1 (1.6)	14.3 (2.5)	22.7 (3.5)	14.9 (4.1)	21.5 (4.5)
Foster Home	3.8 (.6)	46.6 (7.3)	15.2 (6.3)	13.9 (6.2)	31.7 (7.5)	16.1 (5.8)	15.6 (6.1)
Formal/informal Kin	13.1 (1.8)	51.4 (8.2)	9.1 (5.2)	9.1 (4)	30.7 (8.6)	24.3 (7.4)	22.8 (6.4)
Any prior reports of maltreatment							
Yes	73.7 (2.9)	42.7 (4.2)	10.3 (2.2)	13.9 (2.6)	20.8 (3.6)	15.9 (2.8)	21.2 (2.5)
No	26.3 (2.9)	43.7 (5.8)	6.7 (2.5)	11.9 (3)	27.7 (5.4)	14.9 (4.1)	17.9 (4.3)
# out-of-home placements prior to interview date		**			*		
0	82.2 (1.8)	37.8 (3.6)	9.3 (1.9)	13.5 (2.4)	18.8 (3)	13.6 (2.2)	18.5 (2.3)
1+	17.8 (1.8)	58.2 (6.7)	10.7 (4.8)	10 (3.8)	36.6 (7.8)	26.5 (6.9)	26 (6.2)
Chronic condition					*	*	
No	70.7 (3)	44 (3.9)	8.2 (1.6)	14.1 (2.7)	25.4 (3.1)	10.7 (2.2)	16.1 (2.6)
Yes	29.3 (3.3)	41 (5.5)	11 (3.2)	14.6 (3.0)	16.6 (4.2)	21.4 (4.5)	24.9 (5.4)
Caregiver mental health						**	
CIDI-SF: Depressed							
No	72.7 (2.9)	41.2 (4.1)	7.3 (1.7)	11.7 (2.5)	23.6 (3.2)	10.4 (2.0)	16.6 (2.8)
Yes	27.3 (2.9)	48.3 (5.8)	13.7 (3.9)	21.3 (5.3)	21.1 (6.1)	23.1 (4.4)	24.2 (3.9)

CWS = Child Welfare Services.

* $p \leq .05$.

** $p \leq .01$.

*** $p \leq .001$.

from the National Comorbidity Survey and is a reliable and valid measure of general MH, and specific problems including depressive symptoms [19]. Only questions pertaining to major depression were asked of all caregivers. This variable was dichotomized, with “yes” meaning that respondents endorsed ≥ 3 symptoms of depression.

Dependent variables. The outcomes of interest in this study were five MH conditions: depression, suicidality, substance use disorder, anxiety, and attention deficient hyperactivity disorder (ADHD). Four standardized measures completed by either the teen or the caregivers were used to assess these outcomes.

Youth Self Report (YSR). The YSR is a widely used child-report measure that assesses problem behaviors in children ages 11–18 years. It was developed from a normative sample of 1,719 nationally representative children who completed the YSR and who had not received MH services or special remedial school classes within the past 12 months [20]. Test-retest reliabilities for total scores were excellent for short- term and longer periods. The YSR is scored in raw scores, T-scores, and percentile scores for nine narrow-band problem scales and three broader symptom scales: Withdrawn (1); Somatic Problems (2); Anxious/Depressed (3); Social Problems (4); Thought Problems (5); Attention Problems (6); Delinquent

Behavior (7); Aggressive Behavior (8); Destructive Behavior (9); Internalizing (INT), Externalizing (EXT) and Total (TOT).

Child Behavior Checklist (CBCL) 4-18 was administered to caregivers of teens. The CBCL consists of 120 items related to behavior problems, scored on a 3-point scale ranging from “not true” to “often true.” Raw scores are converted to T-scores with a T-score of ≥ 64 considered clinically significant. The CBCL produces a total behavior problem T-score, internalizing and externalizing scales, and subscale t-scores (e.g., Anxious/Depressed, Withdrawn, Somatic problems, Social problems, Thought problems, Attention problems, Aggressive behaviors, and Delinquent behaviors, each with a cutoff score of ≥ 70). The items closely parallel those on the YSR.

Children's Depression Inventory (CDI) measures depressive symptoms in children ages 7–17 years. It contains 27 items, each with a 3-point Likert-type scale (0 = absence of symptom, 1 = mild symptom, 2 = definite symptom), that address a range of depressive symptoms as indicated by five factors: Negative Mood, Interpersonal Problems, Ineffectiveness, Anhedonia, and Negative Self-Esteem. Internal consistency has been good, with Cronbach's alpha ranging from .71 to .86 [21].

CRAFT Screening Test is a short, self-administered tool to screen adolescents for alcohol and other drug-use disorders

Table 2
Mental health problems by age and placement location

N = 815	Any of the 5 problems	Depression	Suicidality	Substance use/abuse	Anxiety N = 103 (13.5%)	ADHD N = 136 (18.6%)
	N = 332 (42.7%)	N = 69 (8.9%)	N = 91 (13.9%)	N = 169 (23%)		
	% (SE)	% (SE)	% (SE)	% (SE)	% (SE)	% (SE)
In- home; no CWS						
12–14	39.3 (5.4)	7 (2.4)	16.8 (4.6)	16.7 (4.2)	11 (3.2)	18.7 (3.9)
15–18	37.3 (6.8)	11.7 (3.4)	12 (5.1)	26.9 (6.1)	8.8 (2.9)	12.8 (4.5)
In home; with CWS						
12–14	40.7 (6)	10.3 (2.4)	18 (3.2)	15.7 (3.8)	15.9 (5.8)	19.3 (6)
15–18	57 (7.2)	4.3 (2)	8.2 (3.1)	33.9 (8.1)	13.2 (5.2)	25.3 (6.3)
Foster						
12–14	28.3 (8.5)	8.7 (4.4)	10.7 (5)	15.9 (7)	11.7 (4.6)	13.1 (5.3)
15–18	59.9 (8.4)	19.8 (9.6)	15.8 (9.3)	43.1 (10.5)	19.4 (9.4)	17.5 (9.6)
Formal/informal Kin						
12–14	36 (11.6)	11.8 (9.6)	4.9 (2.1)	7.9 (5.1)	24.4 (10.7)	22.7 (11)
15–18	62.6 (11.7)	7.1 (5.8)	12.1 (7)	46.9 (11.5)	24.3 (11.2)	22.9 (9)

CWS = Child Welfare Services.

* $p \leq .05$.

** $p \leq .01$.

*** $p \leq .001$.

simultaneously [22,23]. The six items endorsed are given a score of “1.” A cut score of 2 is used to identify adolescents with a substance use/abuse disorder in a medical clinic setting.

Each MH problem was measured using either teen or caregiver reports on the standardized measures above, similar to methods used by Kessler et al., because this can help “optimize concurrence with diagnoses” [1]. Analyses were constrained by the time frame assessed for each of the measures as described below.

Depression. In this sample, teens were classified as depressed if they scored ≥ 66 , which is above the 90th percentile for age and gender group, based on the CDI manual [21]. The CDI measures symptoms during the *past 2 weeks*.

Anxiety. Teens were classified as anxious if their T- score was ≥ 70 on the anxiety/depression scale of the YSR or if the caregiver report on the anxiety/depression scale of the CBCL was ≥ 70 . The time frame measured was for the *past 6 months*.

Substance use disorder was considered positive if respondents reported ≥ 2 “yes” answers on the CRAFFT. This was measured as a *lifetime use*.

Suicidality was assessed using a single YSR question asked of the teen and a slightly different but similar question asked of the caregiver on the CBCL: “I deliberately try to hurt or kill myself. Would you say this is not true, somewhat or sometimes true, or very true or often true?” Responses were dichotomized as somewhat/very true versus not true and were considered present if either the teen or the caregiver responded somewhat/very true. The time frame assessed for suicidality was the *past 6 months*.

ADHD. Teens were considered positive for ADHD if the teen’s T score was ≥ 70 on the attention problems subscale of the YSR or the caregiver scored ≥ 70 on the attention problems subscale of the CBCL using the *past 6 months* as the reference time frame.

Analyses. Analyses utilize primarily descriptive statistics to summarize key variables, including the five MH problems. Tables were constructed to describe each of the specific MH problems as well as “the presence of any MH problem.” Each predictor variable was subjected to a chi-square test for significance for each of the five MH problems. To examine possible correlates of each of the teen MH problems, multivariable logistic

regression models were created based on significant predictors ($p \leq .05$) from bivariate analyses and were then added simultaneously. Model stages included variables related to the teen, placement and maltreatment descriptors, and finally, caregiver depression. The customary level of statistical significance, $p \leq .05$, was used in building the models. All analyses were conducted using SAS-Callable SUDAAN, version 10.0.1, to account for the complex sampling design in NSCAW II [24].

Results

Sample characteristics

Of the 815 adolescents, 59.9% were females with 58% ages 12–14 years. Slightly less than half of the sample was white, 18% black, 28.2% Hispanic, and 9.4% of other race/ethnic background (Table 1). Primary types of maltreatment included physical/sexual abuse (37.1%), neglect (26.3%), and other types (36.6%). Over half (56.1%) of teens remained in their homes without Child Welfare Services (CWS); an additional 27% remained in home with CWS involvement. Almost three-quarters of teens (73.7%) had prior history of involvement with CWS and 17.8% had an out-of-home placement prior to data collection. Slightly less than one-third of teens endorsed having one of the nine chronic physical health conditions. Over a quarter (27.3%) of caregivers in this sample were depressed.

MH problems

Overall, 42.7% of teens reported having at least one MH problem. Nine percent of the sample reported depression, 13.9% suicidality, 23% substance use/abuse, 13.5% anxiety, and 18.6% ADHD. Females were significantly more likely to report depression and suicidality. A significantly higher percentage of older teens reported substance use/abuse (33% vs. 15.6%, $p \leq .01$). Black teens were significantly less likely to report suicidality, anxiety, and ADHD compared to teens of white, Hispanic, and other races/ethnicities. A significantly higher percentage of teens whose primary maltreatment type was physical or sexual abuse reported depression and suicidality than did those who experienced other primary forms of maltreatment. Placement location

Table 3
Weighed multivariate models predicting teen mental health problems

	Any problem N = 332	Depression N = 679	Suicidality N = 685	Substance use N = 633	Anxiety N = 787	ADHD N = 811
	Odds Ratio 95% CI	Odds Ratio 95% CI	Odds Ratio 95% CI	Odds Ratio 95% CI	Odds Ratio 95% CI	Odds Ratio 95% CI
Intercept	.61 .45–.82	.26 .15–.47	.40 .21–.77	.42 .23–.78	.09 .05–.17	.33 .23–.49
Child age						
12–14				.46 .22–1*		
15–17				1 1–1		
Child gender						
Male		.15 .07–.35***	.42 .18–1.01			
Type of maltreatment						
Physical/sexual		1 1–1	1 1–1			
Neglect		.36 .13–.96*	.44 .19–1.04			
Other		.41 .18–.91*	.31 .15–.64**			
Chronic health condition: Yes				.61 .33–1.12	2.18 1.10–4.32*	
Out of home placement prior to interview	2.29 1.38–3.81**			2.12 1.09–4.13*		
Child race						
Black			.27 .09–.76*	.41 .18–.90*	.18 .07–.48***	
White			1 1–1	1 1–1	1 1–1	
Hispanic			.95 .38–2.37	1.43 .62–3.28	.69 .34–1.37	
Other			1.73 .58–5.20	.81 .21–3.08	.48 .19–1.21	
Caregiver depression				2.45 1.37–4.38**		

* $p \leq .05$.

** $p \leq .01$.

*** $p \leq .001$.

and prior history with child welfare were not associated with any of the five MH problems examined. However, a higher percentage of teens who had experienced out-of-home placement reported substance use/abuse compared to those teens who had not been previously placed (36.6% vs. 18.8%, $p \leq .05$). Teens who reported any chronic physical condition were significantly less likely to have a substance use disorder and more likely to report anxiety than those without a chronic condition. In this study, teens whose caregivers were depressed were significantly more likely to have anxiety (23.1% vs. 10.4%, $p \leq .01$).

Table 2 shows the percentage of teens who report MH problems by age and placement. Prevalence of any one of the five problems assessed was high in both younger and older teens, with a significantly higher percentage of older teens in foster care with any problem compared to teens aged 12–14 years (59.9% vs. 28.3%, $p \leq .05$). Of note, suicidality was higher among younger teens than among older teens, especially those teens who remain at home. High prevalence of substance use was noted for both younger and older teens and was more prevalent in older teens regardless of placement location, with statistical differences noted between older and younger groups in kinship care. Of the 332 teens with any MH problem, 52.1% reported only one problem, 28.3% reported two problems, and 19.6% reported the occurrence of three or more problems (data not shown in table).

Table 3 shows the results for all six multivariate logistic regressions (for any MH problem and for each of the five specific MH problems). Results suggest that teen and placement factors are related to MH problems. Teens having an out-of-home placement prior to the intake interview had odds 2.29 times higher of reporting a MH problem (95% CI 1.38–3.81). Males were significantly less likely to report depression (OR .15, 95% CI .07–.35), as were teens who came into contact with the child welfare system for neglect and other types of maltreatment (physical/sexual abuse as reference). Age was not significantly associated with any of the conditions except for substance use/abuse. Black children were significantly less likely to indicate suicidality (OR .27, 95% CI .09–.76), had almost half the odds of reporting anxiety (OR .41, 95% CI .18–.90), and were less likely to report ADHD (OR .18, 95% CI .07–.48). Those teens with a prior out-of-home placement had odds 2.12 times higher of reporting substance use/abuse (95% CI 1.09–4.13). Teens with a chronic physical condition and whose caregiver reported depression had more than twice the odds of reporting anxiety (OR, 2.18 95% CI 1.10–4.32) and (OR 2.45 CI 1.37–4.38) respectively.

Discussion

In this sample of teens in NSCAW II, the prevalence of MH problems is high regardless of whether placement was at home,

or in foster care or kinship care. Almost half (42.7%) of teens or their caregivers report at least one MH problem, and of those almost 20% report three or more MH problems. These data also show that teens aged 12–14 years, girls, and those teens who had a prior out-of-home placement were more likely to indicate a MH problem such as suicidality, depression, and substance use. Further, older teens have higher rates of substance use than younger teens, but rates in both groups are high.

This study shows that MH problems in teens in the child welfare system have not changed dramatically over the past decade since NSCAW I, which showed that that 46.3% of the teens indicated at least one MH problem such as substance abuse [12]. Our data reveal overall rates of 8.9%, 23%, and 13.9% for depression, substance use/abuse, and suicidality respectively for teens 12–17.5 years of age. Using NSCAW I data, Leslie et al. found that 5.6% of teens ages 12–14 had depression, 7.9% had substance use, and 7.9% reported suicidality. Higher overall rates of substance use/abuse among teens in NSCAW II is likely due to the higher reported rates for older teens, who were not included in NSCAW I [12]. Further, substance use was measured as lifetime use in NSCAW II, which may also account for higher rates of substance use. Although ascertainment periods differ, teens within the child welfare system report MH problems at almost the same rates as a national sample of teens. In almost every case the recall period in the national sample reported by Kessler et al. is for a full-year recall period, rather than the maximum here of 6 months for all conditions other than substance abuse. Kessler et al. found that 10% of teens had a 12-month prevalence of any mood disorder, 24.9% had any anxiety disorder, 6.5% had ADHD, and 8.3% had substance use/abuse in a population-based sample. Overall, 40.3% of teens had any MH problem [1]. It is important to note, however, that prevalence rates across studies are not directly comparable due to ascertainment methods and differences in the time frame assessed. NSCAW I used similar standardized methods of ascertainment (e.g., YSR, CBCL) and the time frame reported ranged from 30 days to 6 months. Kessler et al. used the Composite International Diagnostic Interview to measure MH problems and reported 30-day and 12-month prevalence data. Our data most often measured prevalence during the past 6 months (ADHD, anxiety, and suicidality), with depression measured during the past 2 weeks and substance use/abuse reflecting lifetime use. It is possible that teens within the child welfare systems would have rates higher than the general population if ascertainment periods were similar, especially for teens who do not receive services for MH problems. Although our rate of substance use/abuse (23%) is higher than reported by Leslie or Kessler, it compares to a recent report that found that 75% of all high school students have used addictive substances including tobacco, alcohol, marijuana, or cocaine [25].

Our study confirms that adolescents who present to child welfare agencies indicate high rates of MH problems regardless of whether they remain in their biological homes or are placed in out-of-home care. Prior studies do suggest that children who remain at home have high levels of MH needs and our data confirm this [26,27]. Data from this study reveal that over one-third of children who remain at home without services report at least one MH problem. It is worth noting that out-of-home placement is often a gateway for MH services, therefore teens who remain at home may be at particular risk for their MH problems to go untreated.

The quality of the family environment influences a child's developmental trajectory and long-term health outcomes [5,28].

Data from the Adverse Childhood Experiences (ACE) Study demonstrate that family experiences have lifelong consequences [5,29–34] and a recently released report from the American Academy of Pediatrics found that toxic stress experienced from exposure to adverse childhood events can disrupt the development of healthy coping skills and create “maladaptive coping patterns and fragmented social networks” [35]. Teens who have been reported to child welfare for alleged maltreatment can often lack stable and nurturing relationships. Placement in foster care has been shown to increase access to needed services; therefore, those children who remain at home may not only continue to be exposed to considerable stress, but also are less likely to receive services to assist them in developing the capacity to handle negative environments.

Although these data provide a unique opportunity to examine MH problems in teens in the child welfare system, they are not without limitations. Most of the variables examined, including the outcome variables, are self-reported by the teen and the teen's caregiver with no independent corroboration. For children in out-of-home placements, caregivers may have more limited knowledge of the teen and could only report on the past 4 months in most cases. Also, the measures used are largely symptom measures and, although they correlate well with psychiatric diagnoses, they are not diagnostic. Thus, our findings should be thought of as identifying potential MH problems. Finally, these data must be interpreted in the context of the method of ascertainment and the time frame considered for each of the MH problems examined.

This study highlights the high rates of MH problems present across the entire range of teenage years, and suggests that teens involved with child welfare systems should be screened for MH problems regardless of their post-investigation placement. Services such as The National Youth Advocate Program's Constant and Never-ending Improvement (CANEI) program [36], and other strength-based programs [37] that focus on increasing resilience and enhancing relationships for teens, would benefit teens at risk, especially those who remain in their homes without ongoing child protection services.

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