



System involvement among young adults experiencing homelessness: Characteristics of four system-involved subgroups and relationship to risk outcomes



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ABSTRACT

Young adults experiencing homelessness (YAEH) have been found to have high rates of prior involvement with foster care and juvenile justice, but little is known about whether YAEH differ in their risk behaviors based on exposure to different systems. This study used a dataset of 1426 YAEH from 7 different US cities to examine the historical risk and resilience characteristics of those involved in foster care alone, juvenile justice alone, both systems (dual status), and no system involvement. Logistic regression was used to examine whether different types of childhood system involvement predicted risk behaviors in young adulthood including substance use, trade sex, suicide attempts, unplanned pregnancy, and involvement in the adult criminal justice system. Notably, 57% of youth had been exposed to one of the systems – 20% foster care only (n = 291), 18% juvenile justice only (n = 254), and 18% dual status (n = 261). YAEH without a history of system involvement had significantly lower childhood trauma scores and lower rates of lifetime mental health diagnoses compared to all three system involved groups, with dual status youth having the highest rates of both. In relation to risk outcomes, youth with dual status histories had higher odds of trading sex and those with juvenile justice involvement, either alone or as dual status, had higher odds of being arrested after age 18 and of problematic substance use. Results suggest YAEH with prior involvement in child-serving systems have unique risk characteristics that vary by type of system involvement, with dual-system involved youth at particularly high risk. Findings highlight the need for foster care and juvenile justice systems to work collaboratively in providing preventive interventions prior to system exit.

1. Introduction

Young adults experiencing homelessness (YAEH) have higher rates of involvement in child-serving systems such as foster care and the juvenile justice system compared to their housed peers. An estimated 3.5 million young adults experience homelessness in any given year with approximately one-third reporting previous experience with foster care and half reporting involvement with juvenile detention, jail or prison (Morton, Dworsky, & Samuels, 2017). Less is known about the

rates and characteristics of those YAEH exposed to both systems, variously referred to as crossover, dually-adjudicated, dually-involved or dual status (Hirsch, Dierkhising, & Herz, 2018; Onifade et al., 2014). The purpose of this article is to describe and compare risk and resilience characteristics among YAEH with varied exposure to child-serving systems and to examine whether type of system involvement is associated with risk behaviors in young adulthood. Understanding characteristics associated with different types of system involvement and whether this is related to later risk among YAEH may suggest targets for

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prevention and provide guidance for the development and enhancement of services and interventions with YAEH.

1.1. Young adults experiencing homelessness

YAEH are persons 18–25 years-old, with diminished access to fixed and adequate overnight housing, which includes those staying in transitional or emergency shelters (Fernandes-Alcantara, 2013). This group of young adults often encounters homelessness as a result of leaving or being forced out of unstable, dangerous, or untenable living situations, including running away from foster homes or aging out of foster care (King, Abrego, Narendorf, Ha, & Snata Maria, 2017; Rosenthal, Mallett, & Myers, 2006). YAEH endorse higher rates of childhood trauma and systems-involvement than housed peers (Bender, Thompson, Ferguson, Yoder, & DePrince, 2015; Edalati & Nicholls, 2019; Forge, Hartinger-Saunders, Wright, & Ruel, 2018). Once on the streets, YAEH are also more likely to engage in high-risk strategies for survival, including but not limited to trade sex, substance use, and other criminal or delinquent activity (Brezina & Agnew, 2012; Ferguson, Bender, Thompson, Xie, & Pollio, 2012; Perlman, Willard, Herbers, Cutuli, & Eyrich Garg, 2014). Current risk indicators among YAEH also include elevated rates of substance use, and unintended pregnancy (Narendorf, Jennings, & Santa Maria, 2016; Santa Maria, Narendorf, & Cross, 2018; Tucker, Ryan, Golinelli, Ewing, Wenzel, Kennedy, & Zhou, 2012) and increased risk for suicide (Perlman et al., 2014) and mental health problems (Ferguson, Bender, & Thompson, 2015; Perlman et al., 2014). At the same time, protective indicators such as rates of employment and education, social connectedness, and coping skills are often lower among YAEH (Barman-Adhikari, Bowen, Bender, Brown, & Rice, 2016; Courtney, Terao, & Bost, 2004; Ferguson et al., 2011; Morton et al., 2018; Pecora et al., 2006; Yoshioka-Maxwell & Rice, 2017).

Although risk indicators are known to be elevated among YAEH (Bender et al., 2015; Ferguson et al., 2012; Yoshioka-Maxwell & Rice, 2019), it is not clear whether exposure to different types of child-serving systems is associated with greater risk in young adulthood. Research among young people with differential exposure to child-serving systems – though not necessarily homeless – indicate risk and protection factors vary. For example, lower graduation rates and reduced access to mental health services were more common among youth involved in child-serving systems (Hirsch et al., 2018) and repeated justice involvement was found to be higher among dual-status and juvenile justice-only youth (Baglivio et al., 2016). In one study of administrative data from juvenile justice-involved in a single county, youth involved in both systems were found to have higher rates of risk (e.g. substance use) and lower rates of protective factors across domains (e.g., educational attainment, family and peer support, and coping) than those involved in juvenile justice-only (Lee & Villagrana, 2015). Further, increased rates of protective factors (e.g. coping and interpersonal strengths) were found to reduce the chances of a young person becoming justice-involved while in foster care (Summersett et al., 2019). These results suggest the need to explore whether childhood system-involvement is also associated with differential risk among YAEH when considering how to develop and provide services.

1.2. System-involvement among YAEH

High rates of involvement in child-serving systems among YAEH, especially foster care and the justice system, are well-documented throughout the literature. Each year approximately 22,000 emerging adults age out of foster care (United States. (2018) (2018), 2018), and studies have found that these young adults experience homelessness at high rates after leaving care. In the Midwest study of young adults aging out of foster care in three states, 66% of youth experienced homelessness within six months of leaving care (Dworsky and Courtney, 2010). Subsequent analyses found that staying in care longer delayed

the onset of homelessness, but those who exited foster care later due to staying in extended care through age 21, still experienced similarly high rates of homelessness after leaving (Dworsky & Courtney, 2010). Within samples of youth experiencing homelessness, approximately one third to one half report experiences with the foster care system (Bender, Yand, Ferguson, & Thompson, 2015; Whitbeck, Lazowitz, Crawford, & Hautala, 2014; Morton, Dworsky, & Samuels, 2017). Whereas foster youth have elevated risk for substance use, mental health issues, legal involvement, and trade sex compared to their same age peers (Courtney, Dworsky, Lee & Raap, 2010; Greeno, Lee, Tuten & Harburger, 2019), it is not clear whether they are at elevated risk for adverse outcomes compared to their homeless peers without foster care involvement. Research conducted in one shelter in New York City found that youth with foster care involvement were at heightened risk for substance use and mental health diagnoses compared to other youth experiencing homelessness (Thompson & Hasin, 2011, 2012) but other studies have not found similar differences (Bender et al., 2015; Narendorf, Santa Maria, & Cooper, 2015).

Over one million youth are justice-involved in any given year (Puzzanchera & Kang, 2017) and an estimated 200,000 re-enter communities following such involvement (Snyder et al., 2016). Precise counts for the number of people who experience homelessness upon re-entry are not well documented, though justice involvement is known to increase a young person's likelihood of experiencing homelessness (Brezina & Agnew, 2012; Pilnik, 2016). Studies report as many as 78% of young people experiencing homelessness have been arrested (Chapple, Johnson, & Whitbeck, 2004; Yoder, Bender, Thompson, Ferguson, & Haffejee, 2014) compared to three to five percent of peers in the general population (Puzzanchera & Kang, 2017). YAEH engagement in high-risk survival strategies while on the streets increases their potential for exposure to criminal justice involvement (Brezina & Agnew, 2012; Ferguson et al., 2011; Perlman et al., 2014). In fact, compared to YAEH without reported justice-involvement, those who are justice-involved endorse higher rates of engagement in survival behaviors (e.g., sex for money or selling drugs) to help manage limited resources and opportunities to secure one's basic needs for food and shelter (Baron & Hartnagel, 1998; Ferguson et al., 2011; Yoder et al., 2014). However, these studies of YAEH evaluate justice-involvement without distinguishing between juvenile and adult involvement. A more explicit exploration of the impact of juvenile justice-involvement specifically among YAEH is warranted since the juvenile justice system can play a preventive role prior to adult transitions and provide transition planning services as youth are discharged from their system. Youth with juvenile justice exposure are also known to have elevated rates of mental health diagnoses, substance use, trade sex, adult criminal justice-involvement, and lower social connectedness than peers who are not justice-involved (Coker et al., 2014; Lee & Villagrana, 2015; Naramore, Bright, Epps, & Hardt, 2017; Seiter, 2017). However, no known studies to date have examined risk factors in young people experiencing homelessness who have a history of juvenile-justice involvement.

Much less is known about YAEH who have exposure to both the foster care and juvenile justice systems. While previous literature suggests youth with dual exposure to child-serving systems have more unmet needs and vulnerability to risk than those with exposure to only one system (Chuang & Wells, 2010), specific research on the needs of dual status youth experiencing homelessness is limited. The literature indicates youth in foster care are at greater risk of engaging in risk behaviors that are more likely to capture the attention of law enforcement compared to peers in the general population (Huang, Ryan, & Herz, 2012; Ryan & Testa, 2005; Yoon, Bender, & Park, 2018). Yoder and colleagues (2014) explored criminal justice involvement (arrest and jail) and histories of trauma and maltreatment with approximately 202 young adults (18–24 years) receiving services from a midwestern homeless youth service agency. YAEH with histories of physical abuse were found to be nearly two times more likely to be arrested compared

to those without (Yoder et al., 2014). The relationship between a history of trauma and negative outcomes related to health, mental health, system-involvement, and recidivism is also well-documented throughout the literature among young people who have exposure to only one system (Baglivio et al., 2016; Onifade et al., 2014; Whitted, Delavega, & Lennon-Dearing, 2013). The relationship is not as well studied for dual status youth, especially those who are experiencing homelessness.

1.3. Risk and resilience framework

A framework of risk and resiliency may be useful to understand the impacts of varied system involvement on the outcomes of YAEH. Within the risk and resiliency model, young people are thought to experience factors that can advance or restrict their positive development and may predict their later involvement in risk behaviors (Jenson & Fraser, 2015). These factors can increase one's vulnerability for risk outcomes or buffer a young person from negative outcomes (resilience; Jenson & Fraser, 2015; Hawkins, Catalano, & Miller, 1992; Wagnild & Young, 1993). We conceptualize two sets of risk factors in this study, historical risk factors such as childhood trauma exposure and prior mental health diagnosis which likely occurred prior to homelessness that could influence engage in more current risk indicators such as substance use, mental health symptoms, adult justice-involvement, and high-risk sexual activity. Exposure to systems themselves may also serve as a risk factor that may provide an important point of intervention for prevention. We also examine resilience indicators. Exploring coping and resilience among YAEH who have child-serving system involvement is important to understand how to best support YAEH. Prior research suggests YAEH utilize a range of strategies to cope with their experiences (e.g., avoidant, problem-focused, social; Kidd & Carroll, 2007) and these may vary by system involvement. Research in samples of youth experiencing homelessness also found that the use of problem-focused strategies was associated with more positive outcomes (Ferguson et al., 2015; Unger et al., 1998) and the use of avoidant strategies was associated with more negative outcomes related to behavior, mental health, and income (Ferguson et al., 2015; Kidd & Carroll, 2007; Votta & Manion, 2003). It is not known whether histories with different child serving systems may promote use of positive or negative coping strategies but these could serve as points of intervention. Other salient factors of resilience for YAEH which may be related to system involvement include measures of adult competency (e.g. education, employment) and social support (e.g. connectedness to family, friends, and service providers; Barman-Adhikari et al., 2016; Barman-Adhikari & Rice, 2014).

1.4. Current study

Given the elevated rates of system-involvement among YAEH and the high rates of risk behaviors, it is important to examine historical risk and resilience factors among subgroups of YAEH with different histories of system involvement and the relationship of system involvement to risk indicators in young adulthood. This study uses a risk and resiliency framework to address two research questions to better understand system involvement and its impact in young adulthood. First, we examined the demographic characteristics and histories of risk and resilience for YAEH who have exposure to different child-serving systems to identify whether there are significant differences between these subgroups in terms of prior risk and resilience characteristics. Second, we examined whether system-involvement type is differentially associated with risk behaviors in young adulthood, controlling for other demographic, historical risk and resilience factors. We started by examining differences between YAEH in four different categories – (1) those without system exposure, (2) those with only foster care involvement, (3) those with only juvenile justice system involvement, and (4) those who endorsed involvement in both the foster care and juvenile justice

systems. Then, we used this four-group indicator of system involvement to examine whether different types of system involvement predict risk indicators in young adulthood including substance use, trade sex, criminal justice involvement, unintended pregnancy, suicide attempts, and psychological distress. Understanding the risk and resilience characteristics of youth in different systems can provide important information for those involved in child-serving systems who are attempting to prevent homelessness and for homeless service providers who are seeking to effectively assess risk and intervene with the homeless young adults they serve.

2. Methods

This study used data from the Homeless Youth Risk and Resilience Survey (HYRRS) of YAEH (ages 18–26) conducted by a team of researchers in seven major cities in the United States – Denver, Houston, Los Angeles, New York City, Phoenix, San Jose, and St. Louis. The research team developed a common survey instrument and standard procedures, then conducted data collection separately in each city to enroll approximately 200 YAEH per city. Data across cities was combined for a total sample of 1426 across the seven cities. Participants were screened and recruited in each city from drop-in centers, shelters, and transitional housing programs. Young adults in each setting were approached by trained research assistants and asked to participate in an eligibility screener which assessed age and housing status. Young adults were eligible to participate if they were between 18 and 26 years old and had spent the prior night in a shelter, transitional housing, the streets or other location not meant for human habitation, or were staying temporarily with friends, acquaintances, or family where they could not stay for more than 30 days. Institutional Review Boards (IRBs) at each participating institution approved all study procedures.

2.1. Study procedures

Once a participant agreed to enroll in the study and provided consent, a member of the study team administered a brief literacy screener to determine whether the participant would need assistance in completing the survey. A small number of participants (approximately 1% across sites) scored below the threshold on the screener and were offered the assistance of having an interviewer read the study questions to them. All other participants self-administered the survey on iPads or computers. An anonymous identification code was generated for each participant using a series of questions which enabled de-duplication both within and across data collection sites. The survey consisted of two parts – a general survey and a social network survey. The survey took an average of 45–60 min to complete and participants received cash or a gift card for a local grocery store or restaurant in appreciation of their time. The individually-focused survey covered participant demographic characteristics, childhood history, homeless experiences, system engagement, health and mental health outcomes. The social network survey involved a two-step procedure. Participants were first asked to reflect and nominate five of their closest network members with whom they had interacted in the previous six months. The nominated network members therefore represented the innermost part of one's personal network (Roberts, Dunbar, Pollet, & Kuppens, 2009). Secondly, information regarding the participant's relationship with, attributes of, and interaction with each nominated person was gathered.

2.2. Measures

2.2.1 System involvement

Exposure to the foster care system was assessed with a single item that asked participants whether they had ever been in foster care. Juvenile justice exposure was assessed with a single item that asked participants whether they had ever been involved with the juvenile justice system (i.e., juvenile court, probation, detention, or diversion).

A four-category variable was created to group those with no system involvement, foster care only, juvenile justice only, or dual-system involvement.

2.3 Independent Variables

2.3.1 Demographic characteristics

Demographic characteristics were assessed with single item indicators where participants self-selected their gender identity, race/ethnicity, level of education, and sexual orientation. Homelessness-related variables included length of time homeless during their lifetime which was dichotomized to greater than two years or less than two years, age at first homelessness, and where they had spent the prior night. If the participant had spent the prior night with a friend, acquaintance or family member, they were asked how long they could stay there. If they reported that they did not know or that it was less than 30 days, they were categorized as unstably housed. Participants who had stayed in a shelter or transitional housing on the prior night were grouped into a sheltered category and those who had spent the prior night on the streets or in a place not meant for human habitation.

2.3.2 Historical risk indicators

Participants were also asked about childhood traumas using the Adverse Childhood Experiences (ACE) scale (Felitti et al., 1998) which was summed for an indicator of the number of traumatic events experienced prior to age 18. Lifetime mental health diagnoses were measured with six separate questions asking whether the participant had ever been diagnosed by a doctor or mental health professional with ADHD, Oppositional Defiant or Conduct Disorder, Bipolar Disorder, Depression, Schizophrenia or other psychotic disorder, or Post Traumatic Stress Disorder.

2.3.3 Resilience indicators

Youth were asked their highest level of education which was recoded into less than high school education compared to high school graduate, GED, or some college. Youth were also asked whether they were currently working and whether they were currently in school. A dichotomous variable was created to indicate whether a youth was connected to either school or work using these variables. Coping was measured with a scale developed by Kidd and Carroll (2007) specifically for youth experiencing homelessness. It asked participants to "Please rate how often you use each of the following ways to deal with problems" using a likert scale from 0 to 4 to assess 14 different identified coping strategies. These items were grouped into three different subscales using conceptual differences as well as principal components analysis. Ten of the strategies were classified as positive coping and summed for a subscale from 0 to 40. These included problem-focused and social strategies, as well as items such as doing an alternate activity, using spirituality, and telling yourself that you are strong and can get through it. Two strategies – using anger and using drugs – were classified as negative coping and recoded into a subscale with range from 0 to 8. Two other strategies – going off by myself and sleeping – were classified as avoidant coping and recoded into a scale with range from 0 to 8. Social support was operationalized based on a social network approach. Youth were asked to name the five people they had interacted with most over the past six months. They were then asked to think of each of these people and state whether they could go to that person for advice, money, or information. Dichotomous indicators were created for each type of support which was coded positively if they reported that any of the five people provided this type of support.

2.4 Risk Outcome Variables

2.4.1 Risk behaviors

A single item question from the National Survey of Drug Use and Health ((Center for Behavioral Health Statistics and Quality, 2015)) was

used to assess past year suicidal ideation and past year suicide attempts. Psychological distress was assessed using the Kessler-6 which asked participants to say how often they experienced each of six symptoms (nervous, hopeless, restless, depressed, worthless, and everything was an effort; Kessler et al., 2003) in the worst month of the past year. Those with a score higher than 13 on a 0–24 scale were considered positive for psychological distress in line with standard cut points. Problematic substance use was assessed with the CAGE screener that asked four questions about whether participants ever felt guilty about using substances, felt they should cut down, had people tell them they were concerned about their substance use, or used substances first thing in the morning (Ewing, 1984). Participants who said yes to two or more of these items were considered positive for problematic substance use. Adult criminal justice involvement was also assessed with a single question that asked participants whether they had been arrested since turning 18. Exchange sex was assessed by asking participants whether they had ever traded sex for money, drugs, a place to stay, food, or anything else of value. Unplanned pregnancy was assessed with a question that first asked participants how many times they had been pregnant or gotten someone pregnant. If the YAEH endorsed a pregnancy or pregnancy involvement, they were asked how many of their pregnancies were planned. Participants who reported having more pregnancies than the number of reported planned pregnancies were coded as positive for having an unplanned pregnancy.

2.5. Analysis

Bivariate analyses were used to examine variables associated with different system involvement histories (research question 1). Variables included demographic variables, resilience indicators, and historical risk indicators. To examine whether system involvement was related to later risk behaviors (research question 2), we first conducted bivariate analyses, then constructed separate multivariable models for each risk behavior. Separate multivariate logistic regression models examined associations between participants' system exposure and indicators of current risk, including substance use problems, arrest, suicide attempt, psychological distress, trade sex and unintended pregnancy, while controlling for demographic characteristics, historical risk indicators and resilience indicators. Missingness was examined on individual variables and across cases combined. All variables individually had less than 5% missing and were used without modification in bivariate analyses. However, when combined across variables in the logistic regression models, 11% of cases were omitted. An imputation model was constructed to address missingness using all variables in the logistic regression models, as well as variables that were conceptually related. Ten imputates were created and used with imputation procedures in SPSS and pooled final results are presented.

3. Results

Approximately 43% of the sample reported no history of involvement with public child serving systems ($n = 614$). The remaining YAEH were fairly evenly distributed between the three system-involved groups with 18% reporting a history of juvenile justice-involvement only ($n = 254$), 20% reporting involvement in foster care only ($n = 291$), and 18% reporting dual system involvement in both juvenile justice and foster care ($n = 261$). Bivariate differences in demographic, historical risk and resilience indicators across these groups are displayed in Table 1 and discussed specifically below.

Demographic Indicators. Differences by race ($X^2 = 21.2$ (12), $p < .05$) and gender ($X^2 = 24.8$ (6), $p < .001$) were significant. YAEH who identified as biracial or multiracial had disproportionately high rates of involvement in both systems while those who identified as African American had disproportionately lower rates of dual system involvement. Hispanic youth were less likely to have been in foster care only and more likely to have been in juvenile justice only. YAEH who

Table 1
Four group comparison of historical risk and resilience indicators.

	No System Involvement (n = 614) n (%)	Juvenile Justice Only (n = 254) n (%)	Foster Care Only (n = 291) n (%)	Dual Status (n = 261) n (%)	Chi-square/F test (df)
Demographic Indicators					
Race					
African American	245 (39.9)	88 (34.8)	114 (39.2)	92 (31.4) ^c	$X^2 = 21.2$ (12) [*]
White	115 (18.7)	51 (20.2)	54 (18.6)	49 (18.8)	
Hispanic	113 (18.4)	50 (20.4)	40 (13.7)	42 (16.1)	
Bi/Multi-racial	78 (12.7)	39 (15.4)	57 (19.6) ^{b,f}	57 (21.8) ^c	
Other	63 (10.3)	25 (9.9)	26 (8.9)	31 (11.9)	
Gender Identity					
Male	353 (57.8)	169 (66.8) ^{a,d}	144 (49.8) ^{b,f}	164 (63.6)	$X^2 = 24.8$ (6) ^{***}
Female	203 (33.2)	74 (29.2)	125 (43.3) ^{b,d,f}	78 (30.2)	
Trans/Gender Expansive	55 (9.0)	10 (4.0) ^a	20 (6.9)	16 (6.2)	
Sexual Orientation					
LGBQ	174 (28.4)	58 (22.9)	83 (28.5)	88 (33.8)	$X^2 = 7.52$ (3)
Age, mean (sd)	20.91 (2.0)	21.05 (2.10)	20.80 (2.09)	20.76 (2.1)	F = 0.99 (3)
Current Situation					
How Became Homeless					
Kicked Out home/foster home	365 (59.4)	160 (63.0)	178 (61.2)	166 (63.6)	$X^2 = 1.8$ (3)
Ran Away	87 (14.2)	45 (17.7)	53 (18.2)	64 (24.5) ^c	$X^2 = 13.7$ (3) ^{**}
Could not pay rent	96 (15.6)	50 (19.7)	46 (15.8)	31 (11.9)	$X^2 = 5.9$ (3)
Current Living Situation					
Streets/Outside	192 (31.3)	88 (34.6) 112 (44.1) ^a	84 (28.9) ^f	105 (40.2) ^c	$X^2 = 15.3$ (6) [*]
Shelter/TLP	321 (52.3)	54 (21.3)	147 (50.5) ^f	108 (41.4) ^c	
Unstable Housing	101 (16.4)		60 (20.6)	48 (18.4)	
Lifetime homelessness of 2 years	149 (24.3)	80 (31.6)	88 (30.2)	119 (45.6) ^{c,e,f}	$X^2 = 39.3$ (3) ^{***}
Historical Risk Indicators					
ACE ¹ Score, mean (sd)	3.9 (2.9)	4.9 (2.9) ^a	4.8 (3.1) ^b	5.6 (2.8) ^{c,e,f}	F = 22.6 (3) ^{***}
Mental Health Diagnoses					
ADHD	162 (26.8)	102 (41.5) ^{a,e}	118 (42.3) ^{b,f}	134 (53.0) ^c	$X^2 = 59.7$ (3) ^{***}
Bipolar	141 (23.4)	87 (35.7) ^{a,e}	106 (37.7) ^{b,f}	125 (49.4) ^c	$X^2 = 59.1$ (3) ^{***}
Depression	179 (29.7)	91 (37.4) ^a	109 (38.9) ^b	112 (44.3) ^c	$X^2 = 19.2$ (3) ^{***}
Conduct Disorder/ODD	108 (18.0)	75 (30.9) ^{a,e}	105 (37.4) ^b	105 (41.5) ^c	$X^2 = 64.9$ (3) ^{***}
PTSD	55 (9.2)	38 (15.8) ^{a,e}	46 (16.5) ^{b,f}	73 (29.1) ^c	$X^2 = 53.9$ (3) ^{***}
Schizophrenia/Psychosis	57 (9.5)	30 (12.4) ^e	47 (16.8) ^b	53 (21.0) ^c	$X^2 = 23.2$ (3) ^{***}
Resilience Indicators					
Coping Scale					
Positive Coping	33.6 (10.1)	33.0 (9.9)	33.6 (11.1)	31.1 (11.8) ^c	F = 3.4 (3) [*]
Avoidant Coping	5.6 (1.8)	5.6 (1.8)	5.5 (2.1)	5.2 (2.0) ^c	F = 2.7 (3) [*]
Negative Coping	4.5 (1.9)	5.1 (1.9) ^a	4.6 (1.9)	4.9 (1.9) ^c	F = 7.1 (3) [*]
Graduated High School	461 (75.2)	158 (62.2) ^a	204 (70.1)	157 (60.2) ^{c,f}	$X^2 = 26.3$ (3) ^{***}
Currently Employed or In School	270 (44.0)	109 (42.9)	121 (41.6)	117 (44.8)	$X^2 = 0.71$ (3)
Social Support					
Anyone for Advice	428 (71.2)	164 (66.4)	195 (69.6)	176 (70.4)	$X^2 = 1.97$ (3)
Anyone for Money	361 (60.1)	144 (58.3)	153 (54.6)	156 (62.4)	$X^2 = 3.72$ (3)
Anyone for Information	346 (57.6)	146 (59.1)	146 (52.1)	148 (59.2)	$X^2 = 3.72$ (3)
Anyone in Any Type	479 (79.7)	192 (77.7)	215 (76.8)	199 (79.6)	$X^2 = 1.23$ (3)

identified as cisgender male were more likely to be in the juvenile justice system only or dual status compared to both cisgender female and transgender/gender expansive youth. The current housing situation among YAEH in the sample also differed ($X^2 = 15.3$ (6), $p < .05$), with dual status youth most likely to have spent the prior night on the streets and to have become homeless due to running away.

Historical risk indicators. All three system-involved groups had significantly higher ACE scores compared to those with no system involvement ($F = 22.6$ (3), $p < .001$) and higher rates of each of the six different mental health diagnoses. YAEH who reported dual system involvement had the highest ACE scores ($M = 5.6$), reported the highest rates of all six different mental health diagnoses, and were more likely to have spent two or more years homeless throughout their lives.

Resilience Factors. YAEH who were not exposed to child-serving systems had the highest rate of completing high school or a GED (75%) followed by YAEH with foster care only exposure (70%). These rates were significantly higher than for YAEH who were involved in the juvenile justice system only (62%) and those who were dual status (60%). Coping behaviors were also significantly different across the groups. YAEH who had no system involvement and those with foster care only had higher mean scores on the positive coping scale compared to those

in the dual status group ($F = 3.4$ (3), $p < .05$). YAEH in the juvenile justice only group and those in the dual status group had significantly higher scores on the negative coping scale compared to YAEH with no exposure to systems or exposure to foster care only ($F = 7.1$ (3), $p < .05$).

Risk Outcomes. To answer research question 2, we focused on the contribution of system involvement to later risk behaviors. We found significant differences among the four groups on all risk behaviors, tested with both bivariate (Table 2) and multivariable models (Table 3). YAEH who were classified as dual status or juvenile justice only had higher rates of problematic substance use compared to both other groups at the bivariate level ($X^2 = 33.8$ (3), $p < .001$). When controlling for other variables, however, juvenile justice only remained significant but dual status did not. YAEH with histories of juvenile justice only involvement had odds of problematic substance use that were 1.9 times greater than for YAEH with no exposure to systems ($CI = 1.4$ – 2.7). YAEH with exposure to the juvenile justice system - either alone or as dual status - also had significantly higher rates of arrest in young adulthood than both other groups ($X^2 = 102.6$ (3), $p < .001$). These differences remained significant when controlling for other variables, with each group having odds over three times greater of

Table 2
Bivariate analysis of Risk Indicators.

System Involvement Group	Problematic Substance Use	Arrested since age 18	Trade Sex	Ever Unplanned Pregnancy	Suicide Attempt	Psychological Distress
No System Involvement	175 (28.8)	217 (35.4)	92 (15.0)	161 (26.5)	71 (11.6)	249 (41.6)
Juvenile Justice Only	119 (47.8) ^{a,d}	163 (64.2) ^{a,d}	55 (21.7)	88 (35.1) ^a	38 (15.3)	102 (42.3)
Foster Care Only	90 (31.6)	113 (38.8)	54 (18.8)	98 (34.4) ^b	40 (13.9)	115 (41.4)
Dual Status	105 (41.0) ^{c,f}	168 (64.4) ^{c,f}	76 (29.2) ^{c, f}	100 (38.8) ^c	49 (19.3) ^c	101 (40.2)
Chi-square (df)	$\chi^2 = 33.8 (3)^{***}$	$\chi^2 = 102.6 (3)^{***}$	$\chi^2 = 24.3 (3)^{***}$	$\chi^2 = 15.6 (3)^{**}$	$\chi^2 = 9.0 (3)^*$	$\chi^2 = 0.92 (3)$

^eJuvenile Justice Only different from Dual Status, $p < 0.05$.

* $p < .05$, ** $p < .01$, *** $p < .001$.

^a Juvenile Justice only different from No System, $p < 0.05$.

^b Foster Care only different from No System, $p < 0.05$.

^c Dual Status different from No System, $p < 0.05$.

^d Juvenile Justice Only different from Foster Care Only, $p < 0.05$.

^f Foster Care Only different from Dual Status, $p < 0.05$.

being arrested compared to the group with no system involvement. Dual status YAEH also had the highest rates of trade sex (OR = 1.55, CI = 1.0–2.3) and unplanned pregnancy (OR = 1.6, CI = 1.2–2.3), even when controlling for other variables. Psychological distress was not significant at the bivariate level and thus was not tested with a multivariable model. Suicide attempts were significantly higher among dual status YAEH compared to no system involvement at the bivariate level ($\chi^2 = 9.0 (3)$, $p < .05$) but this relationship did not remain significant when other variables were added to the model.

4. Discussion

Results of this study confirmed that YAEH with prior involvement in child-serving systems have unique risk and resilience characteristics that vary by type of system involvement. Overall, YAEH exposed to the foster care system had higher rates of childhood trauma and mental health diagnoses compared to those with no system involvement but were not significantly different from YAEH with no system exposure in relation to rates of high school graduation and later risk behaviors. YAEH exposed to the juvenile justice system - either alone or in

combination with the foster care system - had high rates of childhood trauma exposure and also presented increased risk for substance use and arrest in young adulthood. YAEH with dual status involvement were at highest risk for engaging in trade sex and experiencing an unplanned pregnancy, in addition to substance use and arrest. These findings suggest potential avenues for prevention at the time youth are exposed to these systems and targets for tailoring interventions to different types of system involvement once they become homeless.

YAEH exposure to child-serving systems differed across groups; however, those exposed to one or both systems did share some common differences from YAEH who were not exposed to any system. All system-exposed YAEH had higher rates of mental health diagnoses and higher mean childhood trauma scores, compared to those without system involvement, with dual system involvement YAEH being at the highest risk. Exposure to childhood trauma is a primary contributor to involvement with the foster care system and rates among juvenile justice-involved youth are also very high (Whitted et al., 2013) so this relationship is not surprising. But, exposure to these systems has also been associated with further trauma and violence (DeLisi et al., 2010; Dierkhising, Lane, & Natsuaki, 2014; Espinosa, Sorensen, & Lopez,

Table 3
Multivariable Models of Current Risk Indicators (n = 1426 (imputed)).

	Substance Use Problem	Arrest	Trade Sex	Unplanned Pregnancy	Suicide Attempt
	OR (CI)	OR (CI)	OR (CI)	OR (CI)	OR (CI)
System Involvement (Ref = None)					
JJ Only	1.91 (1.36, 2.69)**	3.09 (2.21, 4.34)**	1.29 (0.85, 1.96)	1.36 (0.96, 1.91)	1.01 (0.64, 1.61)
Foster Care Only	1.15 (0.82, 1.62)	1.16 (0.84, 1.59)	0.99 (0.65, 1.50)	1.27 (0.92, 1.76)	0.95 (0.61, 1.49)
Dual Status	1.28 (0.89, 1.82)	3.28 (2.31, 4.64)**	1.55 (1.03, 2.32)*	1.64 (1.17, 2.31)**	1.06 (0.68, 1.66)
Race (Ref = White)					
African American	0.97 (0.68, 1.38)	1.33 (0.43, 1.86)	1.07 (0.70, 1.63)	1.62 (1.14, 2.31)**	0.76 (0.48, 1.20)
Hispanic	1.31 (0.87, 1.98)	0.88 (0.59, 1.31)	0.85 (0.51, 1.41)	1.48 (0.98, 2.25)	1.12 (0.67, 1.87)
Multi-racial	0.72 (0.47, 1.10)	1.13 (0.76, 1.68)	1.24 (0.78, 1.98)	1.61 (1.07, 2.43)*	0.87 (0.53, 1.43)
Other	1.28 (0.80, 2.05)	0.81 (0.51, 1.28)	0.97 (0.55, 1.71)	1.66 (1.07, 2.43)*	0.96 (0.53, 1.72)
Gender (Ref = Male)					
Female	0.57 (0.42, 0.76)**	0.56 (0.42, 0.73)**	1.79 (1.28, 2.50)**	2.20 (1.68, 2.88)**	0.91 (0.62, 1.31)
Trans/Gender Expansive	0.79 (0.48, 1.30)	0.47 (0.28, 0.77)**	2.31 (1.36, 3.91)**	0.48 (0.26, 0.89)*	1.58 (0.90, 2.76)
Sexual Orientation					
LGBQ	1.30 (0.97, 1.74)	0.93 (0.70, 1.24)	2.11 (1.54, 2.90)**	0.67 (0.51, 0.90)*	1.52 (1.07, 2.17)**
Age, mean (sd)	1.09 (1.03, 1.17)**	1.36 (1.28, 1.45)**	1.13 (1.04, 1.21)**	1.11 (1.04, 1.18)**	0.94 (0.86, 1.02)
Current Situation (Ref = Streets)					
Shelter/TLP	0.80 (0.60, 1.08)	0.74 (0.56, 0.98)*	1.18 (0.83, 1.69)	1.43 (0.93, 2.19)	0.79 (0.60, 1.06)
Couch-surfing	0.87 (0.61, 1.26)	0.80 (0.57, 1.14)			1.10 (0.78, 1.54)
Lifetime home-lessness of 2 years	1.04 (0.79, 1.38)	1.47 (1.12, 1.91)**	1.46 (1.06, 2.01)*	1.17 (0.90, 1.53)	1.09 (0.76, 1.57)
ACE Score	1.10 (1.05, 1.15)**	1.00 (0.96, 1.05)	1.15 (1.08, 1.21)**	0.99 (0.95, 1.04)	1.22 (1.14, 1.30)
Positive Coping	1.00 (0.99, 1.02)	0.99 (0.98, 1.01)	0.98 (0.96, 0.99)*	0.99 (0.98, 1.01)	0.98 (0.96, 0.99)*
Negative Coping	1.38 (1.28, 1.49)**	1.12 (1.04, 1.20)*	1.26 (1.15, 1.38)**	1.05 (0.98, 1.12)	1.05 (0.95, 1.16)
Avoidant Coping	1.02 (0.94, 1.10)	1.05 (0.97, 1.13)	1.00 (0.91, 1.10)	1.02 (0.95, 1.10)	1.09 (0.99, 1.21)
Any Social Support	3.33 (2.30, 4.84)	0.86 (0.63, 1.16)	2.04 (1.29, 3.22)**	1.38 (1.00, 1.90)	1.05 (0.66, 1.68)
Lifetime MH diagnosis	1.32 (0.99, 1.75)	1.39 (1.06, 1.82)*	1.29 (0.97, 1.98)	1.28 (0.98, 1.69)	2.04 (1.35, 3.09)**
In School or Working	0.91 (0.71, 1.18)	1.03 (0.81, 1.30)	0.81 (0.60, 1.10)	0.95 (0.75, 1.22)	0.97 (0.70, 1.35)

* $p < .05$, ** $p < .01$.

2013; May & Wisco, 2016; Whitley & Rozel, 2016) indicating involvement with multiple systems may itself increase exposure to adverse events. Due to the limited measures used, we were unable to examine the temporality of their experiences. Future research could better explore and disentangle these relationships. For homeless service providers working with these young adults, however, the findings underscore the need to provide services that are trauma-informed, particularly for youth with exposure to both the foster care and juvenile justice systems (Davies & Allen, 2017).

Mental health diagnoses were also significantly higher among all system-involved groups. Mental health symptoms may emerge in response to traumatic events that contribute to system involvement (Baglivio et al., 2016) so this relationship is also not unexpected. On the other hand, entering the foster care or juvenile justice systems can lead to psychological evaluations and interactions with mental health professionals that increase the likelihood of diagnosis (Baglivio, Wolff, Piquero, Greenwald, & Epps, 2017; McMillen, Fedoravicius, Rowe, Zima, & Ware, 2007). The foster care system, in particular, has received attention for the high rates of psychiatric medication prescribed and potential concerns about the pile up of medications and diagnoses over time as youth remain in the system (Narendorf, Bertram, & McMillen, 2011; Zito, Safer, Sai, Gardner, Thomans, Coombes, Dubowski, & Mendez-Lewis, 2008). The fact that there were no differences among the system groups in past year psychological distress, a measure of symptoms rather than having been assigned a diagnosis, supports the idea that higher lifetime rates of mental disorder diagnoses among system youth do not necessarily indicate greater propensity for experiencing mental health symptoms while homeless in young adulthood. Providers seeking to assess risk by asking about a history of mental health diagnoses, should keep in mind that having been assigned a diagnosis in the past does not necessarily indicate greater need in the present, particularly among YAEH exposed to child-serving systems. Ideally, such measures should be combined with measures of current symptoms to determine current need for support.

Our study did not find significant differences in many areas between YAEH who were exposed to foster care only and YAEH with no system exposure. This confirms prior research which found differences in the duration of homelessness between youth with foster care histories and other YAEH, but did not find significant differences in experiences and risk behaviors (Bender et al., 2015). Prior research suggested that youth who have aged out of the foster care system are different from other youth who experience homelessness in that they are less self-sufficient and adopt an attitude of learned helplessness (Gomez, Ryan, Norton, Jones, & Galan-Cisneros, 2015). However, we found no differences in coping styles between these two groups. In our analyses, exposure to the foster care system alone did not differentially predict substance use problems, adult arrest, engagement in trade sex, or suicide attempts. In fact, YAEH with histories of exposure to the foster care system are similar to YAEH without foster care system exposure in their levels of educational achievement and risk behaviors. Yet, exposure to both the foster care and juvenile justice systems did appear to contribute to adverse outcomes among YAEH, supporting approaches that examine dual status youth as a group with distinct risk. For youth with foster care exposure alone, homeless service providers should consider approaches that affirm their distinct histories which suggest higher trauma and mental health services but also affirm resiliency that has allowed them to maintain lower risk profiles compared to other system involved groups.

YAEH who had been involved with the juvenile justice system alone did present different risk compared to YAEH without any history of juvenile justice involvement, both in the juvenile justice only and as part of dual status. YAEH with juvenile justice system exposure were at higher risk for substance use problems and arrest. This finding aligns with prior research which has estimated the prevalence of substance abuse among justice-involved youth to be up to three times that of the general population (Coker, Smith, Westphal, Zonana, & McKee, 2014;

Schubert & Mulvey, 2014; Seiter, 2017). YAEH with exposure to the juvenile justice system were also at higher risk for adult arrests. Prior research has often conflated juvenile justice-involvement and adult criminal justice exposure and our findings support the importance of measuring these as separate, though related, constructs. Juvenile justice-involvement suggests a different point of intervention with the potential to prevent subsequent involvement in the adult justice system, potentially by addressing housing stability as part of transition and discharge planning. At the time these young people are accessing homeless service systems, providers should be aware that those with exposure to the juvenile justice system may experience additional barriers to establishing stable housing. Substance use and criminal justice involvement are established barriers to employment (Berg & Huebner, 2011; Siwatch, 2017) so providers need to assist youth in connecting with substance use treatments if needed, as well as advocate for them in employment settings where criminal backgrounds can prevent being interviewed or seriously considered.

One of the most notable findings of the study was the distinctly elevated risk among dual status YAEH for a variety of both historical and current risk indicators. While our measurement provides little information about the sequencing of involvement in these systems, it does suggest the need for foster care and juvenile justice systems to provide preventive interventions prior to system exit, utilize trauma-informed approaches, and coordinate efforts specifically to support youth involved in both systems. Initiatives that promote cross-system collaboration and a focus on specific services for dual status youth such as those spearheaded by the Robert F. Kennedy National Resource Center for Juvenile Justice (i.e. <https://rfknrcjj.org/our-work/dual-status-youth-reform/>) provide a starting point for systems on how to better serve dual-system youth. These include technical assistance for system wide efforts to bring juvenile justice and child welfare systems together to work toward a common goal of better supporting these youth and their families (Tuell, Heldman, & Wiig, 2013). In addition, agencies that provide services to YAEH, should consider screening for history of dual system involvement as an indicator of heightened risk that could be targeted with comprehensive prevention and support interventions.

While our study provides new information about the risk and resilience characteristics of these groups and examines system-involvement in unique ways, it does have limitations that should be considered in reviewing these results. The data were collected in agencies serving YAEH across seven cities but the sample is a convenience sample that only includes YAEH who accessed services. Many young people who experience housing instability do not seek formal services and they are not included in these data. In addition, data come from a cross-sectional, self-report survey that included basic indicators of system involvement. Measurement of foster care involvement and juvenile justice-involvement were only dichotomous measures that do not provide more detailed information about participants' age when involved nor the extent of involvement with these systems. Levels of system involvement could vary greatly, from youth who had short term involvement to those who spent years in the foster care or juvenile justice system and aged out of those systems. Our approach is reductive in combining all types of experiences with systems and masks the wide variation within each group of system involved YAEH. Future research with more sophisticated and detailed measures is needed to better understand how the types of experiences within different systems influences risk.

5. Conclusions

Our study found that over half of young adults experiencing homelessness (57%) had been exposed to the juvenile justice system, foster care system, or both. The high rates of system exposure among individuals experiencing homelessness as young adults, highlights the importance of these systems identifying potential targets of intervention to prevent later homelessness among the youth they serve,

including family strengthening and strong discharge planning. The heightened risk for dual status youth suggests the need for juvenile justice and child welfare systems to work collaboratively to specifically support those who may be involved in both of their systems. For service providers working with YAEH, findings underscore the need to provide trauma-informed services, particularly for youth with prior experiences in child-serving systems. Understanding the specific types of system involvement suggests potential avenues for tailoring approaches to different types of system involvement. Overall, homeless service providers have the opportunity to counter prior negative experiences with systems and the associated risks by providing affirming, trauma-informed services that empower the young people they serve.

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Declaration of Competing Interest

None.

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