RESEARCH

Examining the characteristics of pregnant and parenting, and non-parenting young adults experiencing homelessness living with and without their children

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Abstract

Pregnant and parenting young adults experiencing homelessness (YAEH) face many challenges related to complex circumstances that lead to parent-child separation. This can be emotionally taxing on YAEH who are already disproportionately burdened by mental health disorders. Little is known about the parenting and mental health support needs among YAEH, particularly surrounding parent–child separation. To fill this gap, cross-sectional data from the Homeless Youth Risk and Resilience Survey, collected from YAEH ages 18–26 across seven US cities, were analyzed in this study. Demographic characteristics, mental health, and risk indicators were compared between separated parents ($n = 217$) and those living with their children ($n = 70$), disaggregated by gender. Differences were assessed between YAEH involved in a pregnancy ($n = 531$) and YAEH with no pregnancy history ($n = 768$), disaggregated by gender. Results indicated important gender differences in the needs of pregnant and parenting YAEH, which can be used to guide interventions to support young families experiencing homelessness.

Keywords Homelessness, Pregnancy, Parenting, Young adults, Parent/child separation, Mental health

Background

On any given night in the United States, estimates of unaccompanied youth experiencing homelessness exceed 30,000, with the majority ranging in age from 18 to 24 years old [1]. The life histories of young adults experiencing homelessness (YAEH) often include childhood trauma and abuse, substance misuse, and mental health disorders [2]. They face an increased risk of experiencing violence and victimization, and unmet mental and physical health needs as they continue to reside in unstable living situations [3–5].

Facing even further challenges are YAEH who are also pregnant or parenting. Compared to their housed counterparts among whom the birth rate has been declining over the past three decades [6], the pregnancy rate among young women experiencing homelessness remains high. In fact, lifetime experiences of pregnancy have been essentially unchanged in the literature over the past two decades. A multi-city study by Ringwalt et al. (1998) reported that 48% of predominantly street-residing youth and 33% of youth living in shelters had a history of pregnancy at least once in their lives [7]. Comparably, in a more recent study by Winetrobe et al. (2016), 41% of homeless youth reported that they had ever been pregnant or had impregnated someone else [8]. Likewise, in

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a 2018 national survey of youth experiencing homelessness, 44% of young women aged 18–25 and an additional 10% aged 13–17 were reportedly pregnant or parenting at least one child [9]. The higher rates of pregnancy among YAEH may be due to sexual risk behaviors and experiences of victimization, barriers to accessing reproductive healthcare, underutilization of highly effective contraception such as long-acting reversible contraceptive devices, and pro-pregnancy or pregnancy ambivalent attitudes [10–14].

The risks associated with adolescent pregnancy have been extensively documented and include hypertensive disorders, preterm birth, and undernutrition [15, 16]. Occurring within the context of homelessness, these risks are compounded by factors such as food and housing insecurity and chronic stress, leading to increased risks of low birthweight, neonatal neurologic and physiologic delays, and exacerbations of maternal mental health disorders and depression [10]. A study by Thompson et al. (2008) comparing pregnant and non-pregnant young women experiencing homelessness highlights additional characteristics of this population that can adversely affect pregnancy outcomes and ability to parent effectively [17]. The researchers found that pregnant young women experiencing homelessness were more likely than their non-pregnant peers to have sexually transmitted infections, feelings of abandonment by their families, experiences of emotional abuse, and a higher likelihood of dropping out of school. This combination of physical, psychological, and socioeconomic stressors illustrates the vastness and complexity of the issues faced by pregnant and parenting YAEH.

Despite the challenges, pregnancy and parenthood drive some YAEH to improve their life circumstances through positive behavioral and lifestyle changes. Some YAEH are motivated to establish housing and financial stability, decrease or discontinue substance use, and engage with available health and social services [18–21]. Some YAEH view pregnancy and parenthood as a source of renewed purpose in their lives and a means through which they can reconnect with partners and family members [9, 22]. Due to the apparent strength of this pregnancy-produced drive, researchers have identified pregnancy as a unique opportunity during which to engage high-risk YAEH in health-promoting behavioral interventions [20].

Unfortunately, the potential benefits that may be motivated by pregnancy and parenthood appear to be just as easily lost if the child is separated or removed from the parent, leaving the parent in an arguably worse state than they were previously [23]. Due to the tumultuous life circumstances of young parents experiencing homelessness, parent–child separation and custody loss are common. In a study including 90 young mothers experiencing homelessness, age 16–19, just over half of mothers ($n = 50$, 56%) reported retaining custody of their children over the entire three-year study period. The rest of the mothers reported unstable or lost child custody, with 19% ($n = 17$) reporting never having custody at all [18]. Similar rates of custody loss have been reported elsewhere in the literature. In a study of pregnant and parenting YAEH by Narendorf et al. (2016), which included 109 parents, age 18–24, only 68% of mothers and 10% of fathers reported having physical custody of their children [24].

Though parent–child separation specifically among YAEH has been understudied to this point, the literature suggests that several factors may be risks for parent–child separation among families experiencing homelessness. Substance use and intimate partner violence (IPV) have been shown to be associated with mother–child separation among both homeless and non-homeless low-income families [25–27]. In a qualitative study exploring the context surrounding parent–child separation among families experiencing homelessness [28], mothers described the mechanisms by which these factors led to both voluntary and involuntary separation from their children. Mothers experiencing homelessness in abusive partner relationships described sending children away to live with relatives due to fears for their safety, as well as police interventions during disputes, leading to involvement of child welfare services and child surrender. Likewise, substance use preceded mother–child separation when newborns tested positive for drugs at birth, mothers were mandated to drug treatment programs, and when children were placed with relatives to reduce exposure to drug-using individuals that mothers felt threatened the safety of their children [28].

History of involvement with the criminal justice system, particularly time spent in jail or prison, may also be a risk factor for parent–child separation or custody loss among YAEH [25, 28], YAEH with histories of placement in the foster care system may be at increased risk of custody loss. In a cohort study comparing 576 adolescent mothers living in foster care to 5366 adolescent mothers not in foster care, Wall-Wieler et al. (2018) found that mothers in foster care at the time of their first child's birth had greater odds of child apprehension by child protective services before the child's second birthday, findings which support cyclical child welfare service involvement from one generation to the next [29]. The experience of parenting among YAEH is vastly different between mothers and fathers due to gender-based attitudes towards pregnancy and parenthood that place divergent expectations on parents [30]. Furthermore, barriers that prevent father involvement in family life lead to the unequal division of child-rearing responsibilities [31].

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Despite the prevalence of parent–child separation experiences among YAEH, limited research has been conducted to date on the impact on the parent's mental health and parental functioning. In child welfare cases, protection of the child is rightly prioritized; however, the loss and trauma experienced by the parent is often unrecognized [32]. Loss of child custody among YAEH has been associated with exacerbations of existing mental health disorders, prolonged grief and depression, increased substance use, and stigmatization as an inadequate mother [18, 23, 33]. Gender differences are noteworthy when considering parent–child separation among YAEH because children typically remain with their mothers rather than with their fathers [24]. A large Canadian cohort study found that mothers who had a child taken into custody by child welfare services had worse mental health outcomes than mothers who had experienced the death of a child including higher rates of depression, anxiety, and substance use [29]. Less is known about the mental health effects of voluntary separations from children. A study by Dotson (2011) found that mothers experiencing homelessness who separated voluntarily from their children had more agency in choosing caretakers for their children while they were out of their custody and higher hopes for reunification, but still expressed that the separation experience was painful and upsetting [34].

The mental health effects of parent–child separation are highly concerning, particularly because YAEH are already vulnerable to mental health challenges. Compared to their stably housed peers, YAEH are significantly more likely to have depressive symptoms, suicidal thoughts, and suicide attempts [35]. Studies have shown that YAEH with children are parenting while simultaneously managing symptoms of mental illness. In the study by Crawford et al. (2011), nearly half of the young mothers experiencing homelessness (47%) met clinical criteria for a diagnosis of depression, 11% for PTSD, and another 11% for alcohol use disorder [18]. Similarly, higher rates of past trauma, and diagnoses of depression and bipolar disorder have been found among young parents experiencing homelessness compared to their non-parenting counterparts [24].

Considering the potential mental health implications that may result from parent–child separation and the loss of a rare opportunity for motivating positive behavioral change and increased stability among YAEH, further information is needed to understand the circumstances surrounding parent–child separation and the unmet needs of parents. Descriptive data, particularly regarding gender specific mental health and risk factors for separation, are needed to guide the development of supports and services for pregnant and parenting YAEH.

To fill this gap, this study seeks to address the following research questions:

1) What are the differences in demographic characteristics, mental health status, and risk indicators between parenting YAEH who are currently separated from at least one child and those who currently have all their children with them, stratified by gender
2) What are the differences in demographic characteristics, mental health status, and risk factors between YAEH with a history of pregnancy involvement and those with no pregnancy involvement, stratified by gender.
3) What factors and/or characteristics may contribute to pregnancy/pregnancy involvement and parent-child separation among YAEH

By exploring these questions, the study aims to enhance understanding of the complexities surrounding parent–child separation, the unmet needs of parents experiencing homelessness, and the mental health and risk factors that may inform the development of targeted supports and services for pregnant and parenting YAEH. Interventions aimed at supporting parental wellness and safe and secure parenting may help to prevent family separations in some circumstances where maintaining the parent–child dyad may be protective for the family as a whole.

Conceptual framework

The selection of mental health variables that are the primary focus of this study was guided by Belsky's (1984) Determinants of Parenting Process Model. [36] Belsky developed a theoretical model to explain parenting behaviors and factors that influence parenting style and capabilities, which subsequently impact child developmental outcomes. He posited that parental functioning is determined by three domains of influence: 1) the parent's psychological well-being and personal resources, 2) the child's characteristics and temperament, and 3) the context within which the parent–child relationship occurs, including sources of stress and support. These domains of influence culminate in parenting that is warm, sensitive, and appropriately limit-setting ('positive parenting'), or harsh, excessively reactive, and controlling ('negative parenting'). [37] Belsky emphasized the parent's psychological domain as most important in buffering threats to the other domains [36], warranting further examination of the role that mental health plays in parenting and parent–child separation among YAEH. Appropriate mental health support for young parents experiencing homelessness both before and after separation may be particularly protective. Interventions derived from an improved understanding of the mental health needs of parenting

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YAEH have the potential to facilitate improved parental functioning and prevent family separation for this population, as well as to better support parents and facilitate family reunification after separation.

Methods
Design
This study is a secondary analysis of cross-sectional data from the Homeless Youth Risk and Resilience Survey (HYRRS), collected by an interdisciplinary team of researchers across seven U.S. cities between 2016–2017.

Sample and setting
Research teams in Denver, Houston, Los Angeles, New York City, Phoenix, San Jose, and St. Louis recruited participants from homeless service agencies including drop-in centers, shelters, and transitional housing facilities. Full Institutional Review Board approval was received from the University of Texas Health Science Center at Houston Committee on the Protection of Human Subjects prior to enrolling participants. Protection of human subjects' review and approval was also obtained at each of the seven involved institutional review boards prior to contact with prospective participants. Purposive sampling was used to recruit approximately 200 participants from each geographic location. To be eligible for the study, participants had to be 18–26 years old, English-speaking, and homeless or unstably housed as indicated by spending the previous night in a shelter, apartment provided by a housing voucher, on the streets or other location not meant for human habitation, or temporarily (less than 30 days) with a friend, family member, or acquaintance. The current study analyzed a subsample of participants from the HYRRS dataset who indicated whether or not they had ever been pregnant/impregnated someone else, including those who were currently pregnant and/or parenting at the time of data collection. The parenting subsample was further divided into two groups based on parent–child separation at the time of data collection.

Procedures for data collection
Trained research assistants screened interested participants for eligibility and obtained informed consent. Prior to administering a standardized survey developed by the study team using previously validated measures, literacy levels of participating YAEH were assessed using an adapted version of the Rapid Estimate of Adult Literacy in Medicine (REALM-SF) [38]. Participants identified as having low literacy levels (approximately 1% of all participants) were offered assistance with reading the survey questions. The remainder of participants completed the self-administered survey independently on an iPad or computer to reduce social desirability bias when answering questions on sensitive topics. The first part of the survey collected general information including demographic characteristics, homelessness experiences, mental health assessments, and pregnancy history information. The second part of the survey collected social network data. Participants were first asked to name the five closest members of their social network with whom they had interacted in the last six months and then were asked to provide information regarding their relationships with the named individuals and the nature and quality of their interactions with them. The survey took approximately 45 min to an hour to complete, and respondents were given a $20 grocery store or restaurant gift card for their participation in the study. The IRBs approved all study procedures at each author's academic institution.

Measures
Pregnancy and parenting status
Pregnancy history was assessed by the response to the survey question, which asked, "How many times in your life have you been pregnant or gotten someone else pregnant? (Include a current pregnancy or miscarriage)." A dichotomous variable was created to indicate whether participants have ever been pregnant/gotten someone pregnant or not. Responses of 0 were indexed as never pregnant. Responses of 1 or more were indexed as having ever been pregnant/involved in a pregnancy. The ever-pregnant group included YAEH who were currently parenting at the time of data collection.

Among the YAEH who indicated a history of pregnancy or pregnancy involvement, a subgroup of parents was identified by a question which asked, "How many children do you have?" Parent–child separation status was assessed among participants who reported having one or more children. Those who answered that they had at least one child were asked, "How many of your children are living with you currently?" Participants who indicated that they did not have any children skipped this question. To capture separation from at least one child, a variable was created that calculated the difference between the number of children reported and the number of children currently living with the parent. Values of 0, indicating no difference between the number of children reported and the number of children living with the parent were indexed as "Not Separated." Values of 1 or more, indicating a greater number of children reported than the number living with the parent, were indexed as "Currently Separated." Negative values, meaning that more children lived with the parent than the number they reported having, were marked as erroneous and dropped from the analysis.

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Demographic characteristics

Demographic variables were collected using individual survey questions which asked participants to self-report their age, gender, race/ethnicity, and highest level of education achieved. Characteristics related to their homelessness experience were also collected through self-report survey questions, which asked participants to identify their age at first homelessness, length of time spent experiencing homelessness during their lifetime, and current housing status. Education level was condensed into two categories: having at least a high school diploma or GED and less than a high school education. Lifetime homelessness duration was dichotomized into greater than or less than two years. Current housing status was assessed using a question which asked, "Where did you sleep last night?" Responses were condensed into three categories, which included sheltered or transitional housing, on the streets (i.e., in a park, abandoned building, or other location not meant for human habitation), and unstable housing (i.e., with a friend/relative or motel room).

Mental health indicators

Perceived stress was measured with the short form Cohen Perceived Stress Scale-4 (PSS-4), a 4-item Likert-type scale that assesses how often in the past month respondents felt their lives to be stressful, unpredictable, and out of control [39]. When items are summed, scale scores range from 0 to 16 with higher scores indicating higher levels of perceived stress. According to the scale developers, a score of 9 or higher indicates moderate to severe stress. Previous studies have shown acceptable validity and reliability of the PSS-4 ($\alpha = 0.77$) [40].

Psychological distress was measured with the Kessler-6, a 6-item Likert-type scale which evaluates the frequency of psychological symptoms (nervousness, hopelessness, restlessness, worthlessness, depression, and/or feeling that everything is an effort) [41]. Respondents were asked to think of their worst month in the past year when providing their responses. Item responses were summed to calculate a scale score ranging from 0 to 24, with increasing scores indicating higher levels of distress. Scale developers identified a score of ≥ 13 as indicative of serious mental illness. A Cronbach's alpha of 0.78 has been calculated among YAEH in prior studies [42].

Depression was measured using the 9-item Patient Health Questionnaire (PHQ-9), which evaluates the frequency of depressive symptoms over the past two weeks. Scores were summed to calculate a total score ranging from 0–27, with scores greater than 10 indicating depression [43]. The PHQ-9 has been validated as a depression screening instrument in previous studies among adult outpatient populations [44, 45].

Post-traumatic stress disorder (PTSD) was measured using the 4-item primary care PTSD (PC-PTSD) screening tool. A response of "yes" to three or more items was classified as having symptoms of PTSD [46]. Psychometric testing has demonstrated evidence of acceptable validity of the PC-PTSD in screening for PTSD in a civilian population [47].

Risk and protective indicators

Substance use was measured using questions adapted from Monitoring the Future [48]. Respondents were asked how often they used the following substances within the past 30 days: cocaine, crack, heroin, meth, ecstasy, alcohol, marijuana, and cigarettes. Use of commonly used substances including alcohol, marijuana, and cigarettes were evaluated individually. A combined variable was created to represent use of the remainder of the hard substances with responses coded as 0 (not at all) or 1 (one or more times).

Intimate Partner Violence (IPV) and foster care history were measured by asking participants if they had experienced IPV since becoming homeless or if they had ever been in foster care. Criminal justice involvement was measured by three yes/no survey questions which were combined to create a new variable. These questions included 1) "Have you ever been in jail or prison since turning 18?" 2) "Since becoming unstably housed or homeless, have you been in jail or prison?" 3) "Have you ever been involved with the juvenile justice system? (i.e., juvenile court, probation, detention, or diversion)?" A response of "yes" to any of the three questions was considered positive for criminal justice involvement.

Social support was measured by a survey question which asked respondents to name five people in their social network with whom they had interacted in the past three months including, family members, home and street-based peers, partners, and service providers. They were then asked to specify how many of these five provided different types of social support including advice, monetary or material support, and service information. Dichotomous variables were then created for each type of support (1 = had someone to go to for advice; 1 = had someone from whom to borrow money or receive material support; 1 = had someone to go to for service information). A combined variable across all three types of support was used to determine whether any support was provided by at least one person within the respondent's social network (1 = had support from at least one person in their network).

Analysis

Bivariate statistical analyses were used to examine differences in the demographic characteristics, mental health

indicators, and risk/protective indicators between YAEH with a history of pregnancy involvement compared to YAEH with no history of pregnancy involvement. To account for differences in parenting experiences that may be impacted by gender, mothers and fathers were analyzed separately. Chi-square tests were used for categorical variables and independent samples t-tests were used for continuous variables. Small amounts of missing data ($< 5\%$) were noted on several variables due to nonresponse to the survey questions and were excluded from the analysis. Significance level was set at $\alpha = 0.05$.

Logistic regression was used to examine the association of variables found to be significant in the bivariate analyses with an individual's odds of having a pregnancy history or pregnancy involvement. Statistical analysis was conducted using SPSS software [49].

The same analyses were conducted using the sample of parents living with and without their children. Chi-square and t-tests were used to examine differences in the demographic characteristics, mental health indicators, and risk/protective indicators for the sample of parents currently separated from at least one of their children and parents not currently separated from their children. These analyses were also conducted separately for males and females to account for gender-based differences in their experience. Logistic regression was then performed to determine the association of risk and protective factors with the parents' odds of being separated from at least one child. The variables included in the model, other than gender, were selected based on the findings of the bivariate analyses. Those with p values < 0.05 were included in the logistic regression model.

Results
A total of 1,426 YAEH participated in the study. Participants ranged in age from 18–26 years old, with a mean age of 20.9 (SD $= 2.09$) and had varying racial and ethnic backgrounds (37% Black, 19% White, 17% Hispanic, 16% Multiracial, 11% other). The majority of participants stayed in a shelter (49%, $n = 696$) or on the streets (33%, $n = 469$) the night before completing the survey. 59% of participants identified as male, 34% as female, and 8% as gender minority. Nearly two thirds of respondents answered that they had been pregnant or had gotten someone pregnant at least once in their lifetime (60%, $n = 855$), and 23% ($n = 330$) indicated that they had at least one child.

Demographic findings
Pregnant and parenting YAEH compared to YAEH with no pregnancy history
Gender stratified bivariate comparisons between YAEH with a history of pregnancy involvement, including

currently pregnant and parenting, ($n = 531$; 56% male, 44% female) compared to YAEH with no history of pregnancy involvement ($n = 768$; 68% male, 42% female) are presented in Tables 1 and 2. In the analysis of females (see Table 1), the distribution of race/ethnicity was similarly significantly different between females with and without a history of pregnancy. Females with a pregnancy history were found to be significantly older than those no pregnancy history (21 vs 20), yet this difference is not practically significant.

In the analysis of males (see Table 2), significant differences were found in terms of several demographic and risk variables. The distribution of race/ethnicity was significantly different between males with and without a history of pregnancy involvement. The group of males with a history of pregnancy involvement included a higher percentage of African American (43%) and Latino (18%) individuals, and fewer who identified as white (16%), while the group with no history of pregnancy involvement had a higher percentage of white males (26%).

YAEH with and without parent–child separation
The subsample of parenting YAEH analyzed for separation experience included a total of 287 participants, disaggregated into 180 fathers (63%, Table 3) and 107 mothers (37%, Table 4). Ten participants (3%) were excluded from the analysis due to nonresponse to the survey question asking how many of their children lived with them ($n = 2$) or indicating that more children lived with them than the number they reported having ($n = 8$). Strikingly, 77% ($n = 138$) of fathers were separated from at least one child at the time of data collection, compared to only 23% ($n = 42$) of fathers who were currently living with all their children. Similarly, 74% ($n = 79$) of mothers were separated from at least one child, compared to 26% ($n = 28$) of mothers who were currently living with all their children.

Risk indicators
Age at first homelessness was found to be approaching significance at (0.054) between males with and without a history of pregnancy involvements; however, the difference has no practical significance (mean age 17 vs. 17.5). Males were more likely to be involved in a pregnancy if they used marijuana ($X^2 = 7.96$, $df = 1$, $p = 0.006$). Lastly, having experienced IPV was less likely in males involved in a pregnancy (23%) compared to males without a history of pregnancy involvement (30%).

Few significant differences were found between parents separated from their children and parents with their children present in the gender-stratified analyses. In the analysis of fathers (Table 3), significant differences were found between fathers separated from their children

Table 1 Bivariate comparison of female YAEH with and without pregnancy history

Variables	Females Involved in Pregnancy (*N* = 233) *n* (%)	Females Never Involved in Pregnancy (*N* = 243) *n* (%)	X^2 or t (*df*)	*P* Value
Demographics				
Age, Mean (SD)	21.07 (2.132)	19.99 (1.809)	t = -5.950	**<.001**
Race/Ethnicity				
African American	90 (38.6)	111 (45.7)	X^2 = 9.971(4)	**.041**
White	30 (12.9)	38 (15.6)		
Latino/a	42 (18)	48 (19.8)		
Mixed Race	52 (22.3)	29 (11.9)		
Other	19 (8.2)	17 (7)		
Highest education level				
At least high school diploma/GED	148 (63.5)	164 (67.5)	X^2 = .830 (1)	.386
Less than high school education	85 (36.5)	79 (32.5)		
Age first homeless, Mean (SD)	16.95 (4.100)	17.25 (3.585)	t = .848	.397
Lifetime homelessness duration				
2 years or greater	77 (33)	53 (21.8)	X^2 = 7.565(1)	**.007**
Less than 2 years	156 (67)	190 (78.2)		
Current housing				
Shelter or transitional housing	94(40.5)	150 (61.7)	X^2 = 21.411(2)	**<.001**
On the streets	73 (31.5)	48 (19.8)		
Unstable housing	65 (28)	45 (18.5)		
Risk Indicators				
Foster care history	91 (39.1)	86 (35.4)	X^2 = .684 (1)	.448
Criminal justice involvement	146 (62.7)	125 (51.4)	X^2 = 6.108(1)	**.016**
Victim of IPV	55 (23.8)	54 (22.6)	X^2 = .097 (1)	.827
Current substance use				
Cigarettes	145 (63.3)	136 (57.1)	X^2 = 1.857 (1)	.186
Marijuana	157 (69.2)	133 (55.9)	X^2 = 8.731(1)	**.004**
Hard drugs	70 (31)	67 (28.9)	X^2 = .239 (1)	.683
Heavy drinking	88 (38.8)	67 (28.5)	X^2 = 5.448(1)	**.023**
Has social support				
Any support	176 (79.3)	183 (76.9)	X^2 = .382 (1)	.574
Someone to go to for advice	161 (72.5)	164 (68.9)	X^2 = .724 (1)	.414
Someone to go to for information	118 (53.2)	141 (59.2)	X^2 = 1.732 (1)	.221
Someone to go to for money	128 (57.7)	140 (58.8)	X^2 = .064 (1)	.850
Mental Health Indicators				
PTSD	88 (38.8)	93 (39.2)	X^2 = .011 (1)	.924
Depression, Mean score (SD)	9.84 (8.304)	11.56 (8.574)	t = 2.198	**.028**
Perceived Stress, Mean score (SD)	7.07 (3.564)	7.08 (3.422)	t = .034	.973
Psychological Distress, Mean (SD)	11.24 (7.926)	11.11 (7.908)	t = -.179	.858

and fathers not separated from their children in terms of criminal justice history, cigarette smoking, and informational support. Fathers separated from their children were more likely to have a history of criminal justice involvement (X^2 = 4.66, *df* = 1, *p* = 0.038) and smoke cigarettes (X^2 = 9.89, *df* = 1, *p* = 0.003), and less likely to have a source of informational support (X^2 = 6.81, *df* = 1,

p = 0.010) compared to fathers not separated from their children.

Females with a pregnancy history were more likely to be homeless for greater than two years (X^2 = 7.57, *df* = 1, *p* = 0.007), and were more likely to be living on the streets or in unstable housing versus in a shelter or transitional housing compared to females with

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Table 2 Bivariate comparison of male YAEH with and without pregnancy involvement history

Variables	Males Involved in Pregnancy (*N* = 298) *n* (%)	Males Never Involved in Pregnancy (*N* = 525) *n* (%)	X^2 or t (*df*)	*P* Value
Demographics				
Age, Mean (SD)	21.25 (2.170)	20.98 (2.040)	t = -1.794	.073
Race/Ethnicity				
African American	127 (42.8)	182 (34.7)	X^2 = 14.895(4)	**.005**
White	46 (15.5)	134 (25.5)		
Latino/a	54 (18.2)	76 (14.5)		
Mixed Race	37 (12.5)	80 (15.2)		
Other	33 (11.1)	53 (10.1)		
Highest education level				
At least high school diploma/GED	204 (68.5)	375 (71.6)	X^2 = .882 (1)	.382
Less than high school education	94 (31.5)	149 (28.4)		
Age first homeless, Mean (SD)	17.00 (3.946)	17.52 (3.553)	t = 1.929	**.054**
Lifetime homelessness duration				
2 years or greater	108 (36.4)	156 (29.7)	X^2 = 3.847(1)	**.052**
Less than 2 years	189 (63.6)	369 (70.3)		
Current housing				
Shelter or transitional housing	108 (36.2)	231 (44.3)	X^2 = 5.410 (2)	.067
On the streets	122 (40.9)	193 (37.0)		
Unstable housing	68 (22.8)	97 (18.6)		
Risk Indicators				
Foster care history	119 (40.1)	207 (39.6)	X^2 = .019 (1)	.941
Criminal justice involvement	167 (56.2)	264 (50.4)	X^2 = 2.599 (1)	.110
Victim of IPV	68 (23.0)	152 (29.5)	X^2 = 4.069(1)	**.049**
Current substance use				
Cigarettes	179 (60.3)	285 (55.4)	X^2 = 1.788 (1)	.186
Marijuana	199 (67)	291 (56.9)	X^2 = 7.959(1)	**.006**
Hard drugs	95 (32.4)	130 (25.9)	X^2 = 3.817 (1)	.060
Heavy drinking	113 (38)	169 (33.1)	X^2 = 2.046 (1)	.168
Has social support				
Any support	233 (81.2)	398 (77.7)	X^2 = 1.318 (1)	.278
Someone to go to for advice	205 (71.4)	344 (67.2)	X^2 = 1.539 (1)	.233
Someone to go to for information	159 (55.4)	294 (57.4)	X^2 = .306 (1)	.603
Someone to go to for money	169 (58.9)	308 (60.2)	X^2 = .124 (1)	.764
Mental Health Indicators				
PTSD	103 (35)	210 (41.8)	X^2 = 3.592 (1)	.061
Depression, Mean score (SD)	9.83 (8.006)	10.13 (8.322)	t = .489	.626
Perceived Stress, Mean score (SD)	6.87 (3.524)	6.87 (3.726)	t = -.006	.995
Psychological Distress, Mean (SD)	10.82 (7.621)	10.53 (7.912)	t = -.516	.606

no history of pregnancy (X^2 = 21.41, *df* = 2, $p < 0.001$). Females with a pregnancy history were found to be significantly more likely to have been involved in the criminal justice system (63% vs 51%), smoke marijuana (69 vs 56%) and engage in heavy drinking (39 vs 29%) than females without a pregnancy history.

Mental health outcomes

Mean depression scores were lower for females involved in a pregnancy compared to those with no pregnancy history (mean score 9.8 vs. 11.6, t = 2.20, p = 0.028). Among parenting YAEH 42% of the total subsample screened positive for PTSD and the mean depression score for both groups was > 10 on the

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Table 3 Bivariate comparison of young fathers experiencing homelessness with and without their children present

Variables	Fathers Separated from Child(ren) ($N = 138$) n (%)	Fathers Not Separated from Child(ren) ($N = 42$) n (%)	X^2 or t (df)	P Value
Demographics				
Age, Mean (SD)	20.8 (2.075)	20.9 (1.895)	$t = .271$	.787
Race/Ethnicity				
African American	56 (40.6)	16 (38.1)	$X^2 = 4.410$ (4)	.353
White	33 (23.9)	8 (19)		
Latino/a	15 (10.9)	4 (9.5)		
Mixed Race	21 (15.2)	12 (28.6)		
Other	13 (9.4)	2 (4.8)		
Highest education level				
At least high school diploma/GED	101 (73.2)	25 (59.5)	$X^2 = 2.863$ (1)	.123
Less than high school education	37 (26.8)	17 (40.5)		
Age first homeless, Mean (SD)	17.05 (3.760)	18 (3.557)	$t = 1.437$	.153
Lifetime homelessness duration				
2 years or greater	43 (31.2)	10 (23.8)	$X^2 = .837$ (1)	.441
Less than 2 years	95 (68.8)	32 (76,2)		
Current housing				
Shelter or transitional housing	61 (44.5)	13 (31.7)	$X^2 = 2.218$ (2)	.330
On the streets	43 (31.4)	15 (36.6)		
Unstable housing	33 (24.1)	13 (31.7)		
Risk Indicators				
Foster care history	75 (54.3)	17 (40.5)	$X^2 = 2.480$ (1)	.158
Criminal justice involvement	100 (72.5)	23 (54.8)	$X^2 = 4.663$ (1)	**.038**
Victim of IPV	60 (43.8)	18 (42.9)	$X^2 = .021$ (1)	1.000
Current substance use				
Cigarettes	96 (69.6)	18 (42.9)	$X^2 = 9.891$ (1)	**.003**
Marijuana	89 (64.5)	25 (61.0)	$X^2 = .169$ (1)	.714
Hard drugs	43 (32.1)	15 (36.6)	$X^2 = .286$ (1)	.705
Heavy drinking	48 (35.3)	16 (39)	$X^2 = .190$ (1)	.712
Has social support				
Any support	106 (80.3)	33 (84.6)	$X^2 = .368$ (1)	.645
Someone to go to for advice	94 (71.2)	29 (74.4)	$X^2 = .148$ (1)	.840
Someone to go to for information	67 (50.8)	29 (74.4)	$X^2 = 6.810$ (1)	**.010**
Someone to go to for money	74 (56.1)	28 (71.8)	$X^2 = 3.097$	.095
Mental Health Indicators				
PTSD	60 (43.5)	12 (30.8)	$X^2 = 2.035$ (1)	.197
Depression, Mean score (SD)	10.87 (8.878)	9.37 (7.621)	$t = -.950$	.343
Perceived Stress, Mean score (SD)	6.74 (3.867)	5.73 (3.686)	$t = -1.532$	.127
Psychological Distress, Mean (SD)	10.77 (8.079)	10.41 (8.271)	$t = -.247$	.806

PHQ-9 scale, indicating a positive screen for moderate to severe depression in parents with and without their children present [43]. In the analysis of mothers with and without their children present (see Table 4), a significant difference was found in the mean scores for psychological distress. Mothers separated from their children had lower mean scores on the Kessler-6 scale compared to mothers not separated from their children (mean score 10 vs 14, $t = 2.118$, $p = 0.037$).

Table 4 Bivariate comparison of young mothers experiencing homelessness with and without their children present

Variables	Mothers Separated from Child(ren) (N=79) n (%)	Mothers Not Separated from Child(ren) (N=28) n (%)	X^2 or t (df)	P Value
Demographics				
Age, Mean (SD)	20.38 (1.903)	20.07 (1.864)	t=-.740	.461
Race/Ethnicity				
African American	36 (45.6)	12 (42.9)	X^2=8.030 (4)	.091
White	11 (13.9)	3 (10.7)		
Latino/a	11 (13.9)	10 (35.7)		
Mixed Race	16 (20.3)	3 (10.7)		
Other	5 (6.3)	0		
Highest education level				
At least high school diploma/GED	56 (70.9)	19 (67.9)	X^2=.090 (1)	.812
Less than high school education	23 (29.1)	9 (32.1)		
Age first homeless, Mean (SD)	17.24 (4.093)	16.14 (3.904)	t=-1.234	.220
Lifetime homelessness duration				
2 years or greater	23 (29.1)	10 (35.7)	X^2=.422 (1)	.634
Less than 2 years	56 (70.9)	18 (64.3)		
Current housing				
Shelter or transitional housing	45 (57)	16 (57.1)	X^2=1.801 (2)	.406
On the streets	15 (19)	8 (28.6)		
Unstable housing	19 (24.1)	4 (14.3)		
Risk Indicators				
Foster care history	31 (39.2)	11 (39.3)	X^2=.000 (1)	1.000
Criminal justice involvement	57 (72.2)	16 (57.1)	X^2=2.148 (1)	.162
Victim of IPV	32 (41)	8 (28.6)	X^2=1.360 (1)	.266
Current substance use				
Cigarettes	55 (71.4)	16 (59.3)	X^2=1.367(1)	.336
Marijuana	46 (59.7)	13 (48.1)	X^2=1.094 (1)	.368
Hard drugs	29 (38.7)	9 (33.3)	X^2=.242 (1)	.652
Heavy drinking	23 (29.9)	11 (40.7)	X^2=1.074 (1)	.344
Has social support				
Any support	60 (78.9)	23 (85.2)	X^2=.495 (1)	.581
Someone to go to for advice	52 (68.4)	23 (85.2)	X^2=2.892 (1)	.131
Someone to go to for information	44 (57.9)	19 (70.4)	X^2=1.305 (1)	.358
Someone to go to for money	48 (63.2)	17 (63.0)	X^2=.000 (1)	1.000
Mental Health Indicators				
PTSD	35 (46.1)	11 (40.7)	X^2=.221 (1)	.660
Depression, Mean score (SD)	10.65 (8.822)	13.67 (9.340)	t=1.506	.135
Perceived Stress, Mean score (SD)	6.65 (3.720)	7.58 (3.408)	t=1.122	.265
Psychological Distress, Mean (SD)	10.07 (7.971)	13.96 (8.458)	t=2.118	**.037**

Multivariate analyses

The regression model for history of pregnancy involvement included gender, age, race, lifetime homelessness duration, current housing status, criminal justice involvement, marijuana use, heavy drinking, mean depression score, and being a victim of IPV. The reference categories for the categorical variables in the model were male for the gender variable, white for the race variable, less than two years homeless for the lifetime homelessness duration variable, institution/shelter for the housing status variable, and no history of criminal justice involvement, marijuana use, heavy drinking, and victim of IPV variables. The overall model was found to be statistically significant ($\chi2(14)=108.217$ $p<0.001$) and explained

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11.3% (Nagelkerke R^2) of the variance in pregnancy history. The model correctly classified 63.0% of cases. In this model, all of the independent variables were found to significantly predict a history of pregnancy except for heavy drinking and experiencing intimate partner violence. Increasing depression scores were associated with a decreased likelihood of having been pregnant or involved in a pregnancy. Odds ratios and confidence intervals are presented in Table 5.

The regression model for parents living with and without their children included gender, criminal justice involvement, cigarette use, social support (someone to go to for information), and psychological distress. The reference categories in this model were male for the gender variable, no history of criminal justice involvement or cigarette use, and no one to go to for information. The Omnibus Test indicated that the overall model was statistically significant ($\chi2(5)=24.95$, $p<0.001$). The model explained 13.6% (Nagelkerke R^2) of the variance in separation and correctly classified 78.2% of cases. Gender and psychological distress did not significantly contribute to predicting separation in the model. Having a history of criminal justice involvement and currently smoking increased the odds of separation, whereas having someone to go to for information lowered the odds of separation. Odds ratios and confidence intervals are presented in Table 6.

Discussion

The findings from this study highlight important differences between YAEH with and without a history of pregnancy involvement, as well as between parents with and without their children present. Additionally, findings suggest that the factors potentially related to pregnancy involvement and parent–child separation vary by gender, particularly regarding mental health characteristics. Several of these findings warrant further discussion as they have implications for identifying the parenting and mental health service needs of YAEH and indicate areas of future research.

In both subgroup comparisons, significant differences in mental health were only observed among females, and similar differences were not found among males. First, among females with a history of pregnancy, including those who were currently pregnant or parenting, depression scores were lower compared to females who had never been pregnant. This finding contrasts with a recent study which reported that ever having depression is higher among female YAEH with a pregnancy history compared to those with no pregnancy history [50]. An important measurement difference, however, may explain this discrepancy. In their study of 485 young females

experiencing homelessness, Canfield et al. (2022) used a dichotomous self-report measure that asked participants whether a mental health provider had *ever* diagnosed them with major depression (1=yes). [50]. By contrast, the current study examined the validated PHQ-9 scale to assess symptoms of major depressive disorder, which may more accurately capture YAEH with *current* depression [43].

Lower depression scores among female YAEH with a pregnancy history may suggest that pregnancy and parenthood have some positive implications for their mental health, perhaps by providing a source of joy and motivation for positive lifestyle changes. However, the challenges of pregnancy and parenting appear to increase stress and distress. This notion is supported by previous literature in which young mothers experiencing homelessness describe pregnancy as the driving force behind reducing substance use, seeking mental health care, housing, and other needed services, and developing a new sense of purpose and satisfaction in life [9, 18]. While the risks associated with pregnancy during homelessness must not be discredited, this finding provides further evidence supporting pregnancy as a key timeframe during which to target interventions aimed at enhancing stability among YAEH. During this time of increased psychological stability, pregnant YAEH may be more motivated to engage in supportive services such as mental health counseling, housing assistance, and education that have the potential to impact their lives beyond pregnancy.

Another mental health factor was found to be significant for females only in the comparison of separated and non-separated parenting YAEH. Mothers who had their children with them had significantly higher psychological distress compared to mothers who were separated from their children. This finding suggests that, despite the hope and renewed motivation that may result from pregnancy, perhaps the day-to-day challenges of providing for an infant or child is highly stressful for mothers already faced with numerous challenges and complex life circumstances. This trajectory is similarly described in previous qualitative research among young mothers experiencing homelessness in that the optimism surrounding pregnancy is often clouded by the realities of parenting and its associated challenges [30].

The notable lack of similar differences in depression and psychological distress among male participants in this study, reflects the highly imbalanced impact of pregnancy and parenthood on male and female YAEH. Male mental health was seemingly unaffected by pregnancy and separation experiences, which may result from their lack of personal investment or responsibility in the father

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Table 5 Logistic regression for YAEH with history of pregnancy or pregnancy involvement

Variables	Odds Ratio	Confidence Interval	*p*-value
Gender	1.815	1.412–2.332	**<.001**
Age	1.108	1.042–1.178	**.001**
Race			
African American	1.665	1.166–2.350	**.005**
Latino/a	1.638	1.090–2.462	**.018**
Other	1.806	1.115–2.925	**.016**
Mixed race	1.685	1.109–2.560	**.014**
Lifetime homeless duration over 2 years	1.361	1.043–1.776	**.023**
Current housing status			
On the streets	1.378	1.029–1.846	**.032**
Unstable housing	1.569	1.143–2.155	**.005**
Criminal justice involvement	1.344	1.049–1.722	**.019**
Marijuana use	1.769	1.366–2.291	**<.001**
Heavy drinking	1.083	.831–1.412	.556
Mean depression score	.981	.967-.996	**.013**
Victim of IPV	.765	.577–1.014	.063

Table 6 Logistic regression for YAEH separated from their children

Variables	Odds Ratio	Confidence Interval	*p*-value
Gender	.821	.443–1.524	.532
Criminal justice involvement	2.096	1.108–3.965	**.023**
Cigarette use	2.367	1.257–4.458	**.008**
Someone to go to for information	.410	.208-.807	**.010**
Psychological distress	.979	.942–1.017	.282

role. Though limited, evidence shows that young men experiencing homelessness who are involved in a pregnancy often do not remain involved in supporting the mother through the duration of the pregnancy or participate in child rearing [31, 51]. Young mothers experiencing homelessness typically assume the role of primary caretaker and often shoulder child-rearing responsibilities alone [30].

Despite this stark picture of male involvement in pregnancy and child-rearing among YAEH, some studies have found that some young men experiencing homelessness have expressed a willingness and desire to assume a more active parenting role, sharing responsibilities with the mother and alleviating some of her stress [30, 31]. However, fathers are faced with barriers including housing restrictions, stigma associated with homelessness, and societal assumptions that diminish their role as fathers, which separate them from their families and prevent them from fulfilling their parenting goals [30, 31]. In alignment with this literature, fathers separated from their children in this study were significantly less likely to report a source of informational support compared to

fathers with their children, suggesting a lack of resources available for noncustodial fathers interested in reuniting with their families. This finding highlights a need on the systemic level to reimagine the role of young fathers experiencing homelessness and address the stigma and barriers that deprive them of the opportunity to take a more active role within the family. Further, interventions addressing the barriers to involvement should be designed to foster the inclusion of males in parenting for YEAH.

Although the stress of parenthood was especially evident among non-separated mothers in this study, it is important to note the prevalence of mental health challenges among all parenting YAEH. Though not significantly different between separated and non-separated parents, the mean depression score on the PHQ-9 for all parents in this study was 10.9, which may be interpreted as indicating a moderate level of depression, potentially necessitating treatment [43]. Additionally, 42% of all parents screened positive for PTSD on the PC-PTSD scale [46]. These findings indicate that, regardless of separation status, many YAEH are navigating the stresses of

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parenthood and homelessness alongside their own mental health needs.

Taken together, these findings indicate a clear need for further mental health and parenting support for all parents experiencing homelessness. Adequate mental health support, especially for mothers, is particularly important given the well-documented link between maternal depression and impaired parenting practices that can impact child physical and mental health and developmental outcomes [52–54]. Additionally, mothers with a history of mood disorders are at increased risk of developing postpartum depression, and extra vigilance for depressive symptoms should be used by their service providers [55]. Expanding Medicaid to cover postpartum mothers for more than six weeks post-birth is also highly needed to adequately assess and treat postpartum depression [56].

There is also a great deal of work to be done in supporting increased father involvement in pregnancy and parenthood. Addressing system and social barriers that limit father involvement may equalize the stakes that males and females have in pregnancy. Sharing parenting responsibilities between partners may help improve the mental health of mothers currently shouldering the burden alone and may also allow males to benefit from the powerful motivational forces and potential mental health protections that can accompany pregnancy and parenthood for some YAEH. However, considerations need to be made in cases where shared parenting may not be advised or safe.

Limitations

One of the most notable findings of this study was the sheer prevalence of parent–child separation experiences among young families experiencing homelessness. At the time of data collection, approximately three quarters of parents were separated from at least one child. However, data were not available on the nature of these separations, which limits the accuracy with which they can be interpreted. Various reasons for separation such as a child's death, forceable removal by child welfare agencies, or voluntary separation orchestrated by the parent and a support network would each impact parental mental health differently and could impact parental needs surrounding separation. Additionally, the data do not adequately capture previous episodes of parent–child separation that may have occurred prior to data collection. Further investigation into these nuanced experiences is warranted.

Another limitation is that smaller sample sizes in the gender-stratified subgroup analyses reduce the power of the analysis and increase the probability of Type 1 error due to the increased number of statistical tests being performed. Furthermore, due to the cross-sectional nature of the data, causality cannot be determined. For example, we cannot conclude whether past issues (e.g., criminal justice involvement) came before or after pregnancy involvement. This data, by no means, suggests that these findings are solely related to gender-based disparities or experiencing separation vs. remaining an intact family. Rather, these issues are complex and intersect with societal norms, structural barriers, provider-based discrimination, and biases associated with housing assistance allocation.

Additionally, differences between males and females were not compared directly. Results are exploratory, cross-sectional, and based on self-reported measures. Therefore, further studies are needed to corroborate the results. Despite these limitations, the study included a sample of YAEH with diverse homelessness experiences and included valuable data from male YAEH, who are underrepresented in the literature.

Conclusions

In this exploratory analysis of mental health and risk characteristics among a diverse sample of pregnant and parenting YAEH, important gender differences were noted. Female mental health alone seemed to be impacted by experiences of pregnancy and parenthood, while male mental health was not found to be different between the groups. This highlights the need for further mental health and parenting supports for young mothers experiencing homelessness, as well as a need to address barriers that prevent fathers' active involvement in parenting and family life. For fathers, having a source of informational support was associated with having one's children with them. Therefore, health and social service providers should adopt strategies to increase informational support to fathers who are parenting, and it could also be beneficial for those who are working to reunite with their children. Although data were not available on the nature of separations, the striking prevalence with which parent–child separation occurred among this representative sample of YAEH indicates that the experience of separation is disproportionately high among this group, and the mental health sequelae may be compounded by the adversities YAEH already face daily, impacting their service needs. Further investigation into the circumstances that lead to separations, the impact of separations on families, and related service needs is warranted to better support young families experiencing homelessness.

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Declarations

Ethics approval and consent to participate
Full Institutional Review Board approval was received from the University of Texas Health Science Center at Houston Committee on the Protection of Human Subjects prior to enrolling participants. All participants provided informed consent.

Consent for publication
Not applicable.

Competing interests
The authors declare no competing interests.

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