**Table 2: Characteristics of Included Studies; N=23**

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| **First & Second Author, Year** | **Purpose** | **Population / Sample** | **Research Design** | **Outcome Measures** | **Results** |
| **Health Risks in Children and Youth Living with Adult Family Members** |  |  |  |  |  |
| Alleyne-Green, Kulick, et al., 2018 | Explored the impact of stress associated with first-time shelter use and shelter environment as well as quality parenting on depression. | 243 homeless youth (aged 11-14 years) and 209 caregivers living in shelters in NYC. | Linear regression with ordinary least squares estimators. Depression was measured using 16 items from the Children’s Depression Inventory (CDI) & respondents’ discomfort in the shelter & family relations. | First-time shelter users and their discomfort in the shelter resulted in higher levels of depression. Repeat shelter users coped better, resulting in lower levels of depression. Poor-quality parenting increased depression. | Support systems within the shelter and higher rates of monitoring and supervision were associated with lower rates of youth depression. Talking with caregivers about difficult subjects and depressive symptoms also reduced depression. Girls residing in shelters for the first time had highest rates of depression. |
| Barnes, Lafavor, et al., 2017 | Examined the relationship between psychosocial risk, self-regulation, and health  among children staying in homeless shelters with their families. | Children ages 9-11 years (n = 86), living in a shelter with their family. | Cross-sectional study among children living with adult parents or guardians  in two large, urban emergency family shelters in Minneapolis, MN. | Children were assessed for health, family  stress/adversity, emotional-behavioral regulation, nonverbal intellectual abilities, and executive  function. Self-regulation, as reflected from parent reports and direct child testing, plus physical health. | Vision problems were the most prevalent health condition, followed by chronic respiratory  conditions. Cumulative risk, child executive function, and self-regulation problems  were related to poorer physical health. |
| Brumley, Fantuzzo et al., 2015 | Assessed the relationship between early homelessness and educational outcomes, while controlling for co-occurring risks. | First grade cohort in urban public school.  Total cohort = 8,267; students receiving free & reduced lunch: 4,594; children experiencing homelessness = 481. | Analysis of integrated data sets (HMIS, TANF, DPH, and DHS records) using multilevel linear models. | Prevalence of risk factors (early health risks, socio-familial risks) based on housing status; academic achievement & social engagement based on demographic variables & identified risks. | Child w/ history of homelessness have increased rates of birth risks, lead exposure, teen moms, mom with low education level, and maltreatment. Also exhibited academic and social engagement issues. |
| Cutuli, Ahumada, et al., 2017 | Examined links between adversity, levels of stress, and health problems among children in families living in emergency housing. | Two cohorts of children (n = 242) ages 4-7 years, entering kindergarten or first grade along with their primary caregivers participated while staying at one emergency housing shelter. | Parents/caregivers completed the MacArthur Health and Behavior Questionnaire & the Lifetime Life Events Questionnaire on behalf of their children. | Both cohorts had similar findings. Caregivers of cohort #1 reported 37% of children had used the ER in the past year and 23% had been hospitalized at least once. Cohort #2 had 29% reporting ER use, and 23% reporting hospitalization. Four major health problems: asthma; repeated, persistent respiratory infections; repeated, persistent ear infections; and allergies. On average, children experienced 2.91 negative lifetime events. | Children exposed to more negative stressful life events had more health problems. Stressful life events were not related to ER use but did relate to hospitalization. Results affirmed links between stress in early childhood and health problems among children living in emergency housing. |
| DiMarco, Ludington, et al., 2010 | Assessed access to and utilization of oral health services by children in families experiencing homelessness. | 124 families in a Midwest family shelter with 236 children ages 0-18 years (mean 6.38 years)—not stratified by age. | Quantitative prospective study with repeated measures comparing shelter-based vs. non-shelter-based care. | Most children had 2-3 health problems, with 98/236 with dental caries; 43% were able to secure a dental appointment – shelter improved access to care. | On site professional screening increased dental care access and utilization. More caries and poor dental health in homeless children, similar to other poor populations. Shelter based care increased dental health. |
| Fantuzzo, BeBoeuf, et al., 2013 | Assessed timing and frequency of homelessness on educational outcomes. | 3rd grade cohort from an urban public school district. Total cohort = 10,639. Children with history of homelessness = 1,038. | Analysis of integrated data sets compiled from public records (Housing, school, public health, CPS records) using multilevel logistic models. | Timing of first homeless episode; frequency of homelessness; reading and math non-proficiency; truancy; classroom engagement; prenatal care; history preterm/low birth weight; childhood maltreatment. | Children homeless as toddlers have risk for reduced math proficiency; homelessness in infancy related to increased risk of poor academic engagement; increased frequency of homelessness related to truancy |
| Grant, Shapiro, et al., 2007 | Assessed the health status of children experiencing homelessness. | 520 children experiencing homelessness, ages 3mo-19 years from NY Children’s Health Project. (200 ages 6y-19y) Mean age of participants: 5.4 yrs. | Data extracted from electronic health records. | BMI, anemia, asthma diagnosis, diagnosis of otitis media; developmental and mental health concerns. | 78% up-to-date immunizations; many eligible for WIC not enrolled; 31.5% w/ asthma diagnosis vs non-homeless (12% of general pop) with concerns for underdiagnosis; anemia significantly higher in homeless children under 3 years old vs. general population (19 vs 7%). Obesity rates among homeless children ages 6-11 = 32% (vs. 19% nationally) & ages 12-19 = 28% (vs. 17% nationally). 30% of kids age 12m-19yo had developmental or psychiatric diagnosis |
| Harpaz-Rotem, 2009 | Examined longitudinal association between measures of child well-being and maternal PTSD, homelessness, substance abuse, and other psychiatric conditions. | 142 Veteran mothers assessed q 3 months over a 1-year period for psychiatric risk factors, PTSD, emotional issues, substance abuse, and physical functioning.  Assessed the youngest child in the family (mean age 9.54 yrs.) | Longitudinal survey with data collection q 3 months. | Maternal characteristics (PTSD & depressive symptoms, substance abuse, income, demographics). Children emotional problem score as well as school attendance. | Housing status did not predict emotional problems (beyond maternal psych symptoms), but did predict child’s school attendance and mother’s residential instability |
| Jetelina, Reingle et al., 2016 | Evaluated the relationship between homeless episodes, aggression, and victimization among school-aged children. | 4,297 students from schools in Birmingham, AL, Houston, TX, and Los Angeles, CA, interviewed in 5th, 7th, and 10th grade. | Secondary analysis of a longitudinal cohort study (Healthy Passages Study). | Family homelessness (from caregivers, any episodes over past 12 months); victimization using Peer Victimization Questionnaire; physical aggression; ETOH or other drug use over past year; demographics (age, race, ethnicity, gender, highest household education, and household income). Youth categorized based on housing status (never homeless, homeless for 1 wave only, homeless for 2 waves, homeless for 3 waves), and victim-aggressor status (victim only, aggressor only, victim-aggressor, or neither victim nor aggressor). | Youth who experience homelessness are more likely to demonstrate aggression and aggression with victimization characteristics than their continuously housed peers. Victimization and aggression decreased between 5th & 7th grades; aggression increased in 10th grade. |
| Park, Metraux, et al., 2012 | Assessed rates of children accessing Medicaid-reimbursed mental health (MH) services in Philadelphia. Compared housed vs. homeless subgroups vs foster care involved children. | 165,821 Medicaid-enrolled children in Philadelphia from 1998-2004. | Quantitative retrospective analysis of records related to accessing MH services and housing status. | MH service usage and diagnoses based on housing status. | Children experiencing homelessness required more inpatient MH services, were more likely to have foster care involvement, and sought ambulatory care less often than housed peers. |
| **Health Risks in Unaccompanied Children and Youth** |  |  |  |  |  |
| Berdahl, Hoyt, et al., 2005 | Identified life events associated with mental health (MH) help seeking. | Age 18 or younger, homeless (unable or unwilling to return to home)  n= 556 with 61% female and 60% white from the Midwest. | Secondary analysis of survey data collected in 1999. | First mental health service utilization, comparisons made based on youth gender, race/ethnicity, family of origin stability, age on own (age of first runaway experience), social support and networks, family abuse & victimization, abuse before running away, victimization after running away. | 80% of homeless had seen a mental health professional overall: 40% before and 40% after running away.  Boys utilized MH services less often than girls. |
| Crawford, Trotter, et al., 2011 | Assessed pregnancy rates and mental health status (history of trauma & victimization) in adolescents experiencing homelessness. | From a 3-year, 4 Midwest state study of young women experiencing homelessness. (Midwest Longitudinal Study of Homeless Adolescents) Women ages 16-19, homeless at time of baseline interviews. Three separate subsamples of total 241 young females: 103 of whom had prior pregnancy; 171 followed longitudinally (90 were pregnant at some point during data collection); 114 women who completed all waves of data collection (68 had children). | Qualitative Cohort study (3 waves, including a longitudinal wave). | Incidence of pregnancy relative to history of trauma/victimization; custody of children; reproductive history relative to housing status. | High rates of pregnancy from a young age (median age= 15.5) and high school dropout rates. Most had a history of physical or sexual victimization. Majority had custody of child (55%) but with unstable living situations. Decreased birth control use and increased miscarriage rates. |
| Eastwood & Birnbaum, 2007 | Assessed relationship between housing status and abuse history among youth with HIV. | 224 patients from an adolescent medical clinic in NYC serving large number of youth with HIV infections and at-risk adolescents, ages 12-24 years (1991-2004). | Survey and chart review of adolescents at a clinic receiving services for HIV care. | Demographics (age at HIV diagnosis, entry into care, ethnicity, education); HIV related variable (HIV transmission mode, opportunistic infections); sexual/reproductive hx (age of first sexual activity, history of sexual abuse, history of STIs; pregnancies and abortions); substance use history; mental health history; criminal justice history; exposure to abuse; resources; housing status | Nearly 2 in 5 youth with HIV are housing unstable. Those with history of sexual abuse, criminal justice involvement, and physical abuse have more difficulty stabilizing housing. |
| Johnson, Whitbeck, et al., 2005 | Assessed lifetime and 12-month prevalence rates of substance abuse disorders among homeless and runaway youth. | From Midwest Longitudinal Study of Homeless Adolescents. 455 youth, ages 16-19, who were homeless, residing in one of 8 Midwestern cities (including Iowa, Missouri, Nebraska, Kansas). | Longitudinal study; qualitative interviews & mental health assessments. | Diagnostic Interview schedules: UM Composite International Diagnostic Interview (UM-CIDI; to assess MDD, PTSD, alcohol & drug abuse); Diagnostic Interview Schedule for Children-Revised (DISC-R) to assess for behavioral problems; Number of times left home since 1st runaway; sexual orientation; sleeping on the streets; victimization; caretaker abuse; deviant behaviors; parental rejection; parental monitoring; parental substance abuse. | 60.5% met lifetime criteria for at least 48.1% met SUD criteria in past 12 months. 93% of adolescents meeting criteria for SUD also met criteria for at least 1 other mental disorder; 50% met criteria for 2 or more disorders. 90% w/ SUD met criteria for conduct disorder; females had higher rates of PTSD & SUD. Most met SUD criteria after/at time of first runaway. Behaviors and associations after runaway, home environment, and parenting practices predicted lifetime risk of substance use disorders. |
| Milburn, Liang, et al., 2009 | Assessed trajectories of risk behavior and exiting homelessness among newly homeless youth in Los Angeles (LA). | LA/Melbourne study (subset). 261 newly homeless youth from LA county, ages 12-20, away from home at least 1 night without parental permission or kicked out; away from home for 6 months or less. Mean age 15.5 years. | Longitudinal survey research. | HIV-related risk behaviors (unprotected sex, number of partners, use of hard drugs, exiting homelessness during study). | Risk profile for HIV-related behaviors was highly associated with other risk profiles for newly homeless adolescents, especially with having unprotected sex, being abstinent or monogamous, use of hard drugs, and exiting homelessness. Probabilities became less significant as length of homelessness progressed. |
| Park, Metraux, et al., 2012 | Assessed rates of children accessing Medicaid-reimbursed mental health (MH) services in Philadelphia. Compared housed vs. homeless subgroups vs foster care involved children. | 165,821 Medicaid-enrolled children in Philadelphia from 1998-2004. | Quantitative retrospective analysis of records related to accessing MH services and housing status. | MH service usage and diagnoses based on housing status. | Children experiencing homelessness required more inpatient MH services, were more likely to have foster care involvement, and sought ambulatory care less often than housed peers. |
| Rosenthal, Mallett, et al., 2007 | Assessed drug dependency rates, timing of substance use disorders, and prevalence of mental illness among homeless youth over a year-long period. | Los Angeles (LA)/Melbourne study of homeless adolescents. 358 homeless adolescents 12-20 years old, newly homeless both LA and Melbourne. US average age 15. | Longitudinal (1 year) survey of a cohort of homeless youth. | Examined rates of drug dependence and mental illness over time. | Adolescents are not becoming addicted to substances or developing mental illness after becoming homeless.  Lower than expected rates. |
| Rosenthal, Mallett, et al., 2008 | Assessed how amount of time spent homeless affects substance use and use of drug and alcohol services among homeless youth in LA and Melbourne. | LA/Melbourne study. 620 homeless young people from LA (and 674 from Australia), age 12-20 yrs. (mean = 16.9 yrs.), who were away from home for at least 2 nights without parental permission or told to leave home. | Survey; subset of longitudinal study. | Assessed drug and ETOH use (substance used, frequency, route, dependency) and service use (substance treatment or detox). Results stratified by location and new vs experienced homeless. | Youth with “experience” as homeless were more likely to use substances, use them more often, use more types of drugs, and use injectable drugs than newly homeless, although all groups had high incidence of use. Experienced homeless more likely to express symptoms of drug dependence and want or seek help for substance use. Most didn’t leave home because of substance use but started using shortly after or at time of leaving home. |
| Rosenthal, Rotheram – Borus, et al., 2007 | Assessed housing stability and HIV-risk behaviors among newly homeless youth. | LA/Melbourne study. Specific focus on “newly” homeless youth. 183 youth ages 12-20 from LA, who had run away or been kicked out of their home for >2 nights but < 6 months. Findings stratified by age. | Longitudinal survey study. | HIV-related sexual and substance use risk behaviors; stability of housing (prior to leaving home, and over 2-year study period) | Likelihood of serious drug use increased with the number of moves a participant had over the 2-year study period. Sexual risk taking did not increase with moves, but type of housing placements (e.g. institutional vs familial settings) was associated with condom use. Risk taking behaviors were not as expected. |
| Solorio, Rosenthal, et al., 2008 | Examined association between newly homeless youth individual factors (sociodemographic, depression, substance use), and structural factors (living situation) with sexual risk behaviors over time. | LA/Melbourne study subset. 261 newly homeless youth from LA county, ages 12-20, away from home at least 1 night without parental permission or kicked out of home; away from home for 6 months or less. Mean age 15.5 years. | Longitudinal survey research. | Demographics, housing status, depression & anxiety symptoms, substance use, and sexual risk behaviors (number of partners, condom use, casual partners vs relationships). | Male youth living in non-family settings more likely to report more sexual partners than those in institutions or living w/ family. Living situation and number of partners not significant for females. Females in non-family living situations less likely to consistently use condoms. Drug use also associated with decreased use of condoms for females. For males and females, drug use significantly and positively associated w/ more sexual partners. |
| Thompson, Bender, et al., 2008 | Assessed risk factors (family-level and individual variables) associated with teen pregnancy in a national sample of runaway and homeless youth. | 951 females (average age 16.6 years) from the Runaway/ Homeless Youth MIS database; 476 were pregnant, 475 non-pregnant. | Secondary analysis of Runaway/ Homeless Youth MIS data; randomized matched cases (pregnant vs. non-pregnant). | Demographics; youth characteristics (age, number of times runaway, living situations in previous month, educational status, criminal behaviors, conflict with parents; parental characteristics (substance abuse, physical abuse, neglect of youth, family structure). | Pregnant youth more likely to identify as AA or Hispanic, to have dropped out of school, to have stayed away from home for longer periods, to be more unstably housed, have more physical and mental health risks, more involvement with criminal justice system, and live in a single parent home. Non-pregnant teens had higher rate of physical abuse from parents, while pregnant teens had higher rates of emotional abuse. |
| Tyler, Whitbeck, et al., 2007 | Identified and assessed risk factors for sexually transmitted infections (STIs) among homeless adolescents. | Midwest Longitudinal Study of Homeless Adolescents. 428 homeless young people in Midwestern cities (ages 16-19). | Cross-sectional survey of the larger longitudinal study. | History of STI (yes or no, and type of STI when known); History of child maltreatment; Street exposure (age on own, number of times on own); Sexual history (age of first intercourse, number of partners in 12 mo, condom use); trading sex and sexual victimization; substance use (EtOH, IV drug use, & illicit drug use). | Among homeless youth, females & Black youth were more likely than males and non-Black youth to have an STI. Those with history of sexual abuse and who traded sex had higher rates of STI. Lower levels of condom use and increased EtOH use moderated risk for STI among Black youth. |
| Whitbeck, Chen, et al., 2006 | Assessed food insecurity and risk behaviors related to securing food among homeless and runaway adolescents. | Midwest Longitudinal Study of Homeless Adolescents. 455 youth aged 16-19. | 3-year longitudinal cohort study. | Age at 1st runaway, number of times left home since 1st runaway; sexual orientation; sleeping on the streets; victimization; caretaker abuse; deviant behaviors; parental rejection; parental monitoring; parental substance abuse; deviant & non-deviant food strategies; food insecurity. | Approximately 1/3 of runaway & homeless youth experienced food insecurity in prior 30 days. Age, history of caretaker abuse or neglect, having ever spent time directly on the streets, being part of a large social network (larger network = less insecurity), and having deviant & non-deviant food acquisition strategies as associated with food insecurity. |
| Whitbeck, Hoyt, et al., 2007 | Assessed lifetime and 12-month prevalence rates of PTSD among homeless and runaway adolescents. | Midwest Longitudinal Study of Homeless Adolescents. 428 homeless young people in Midwestern cities (ages 16-19). | Longitudinal study | UM-CIDI (to assess major depressive episode, EtOH abuse, PTSD, drug abuse), DISC-R (assess behavioral problems); age, gender (dichotomous), sexual orientation, hx of caretaker abuse (physical or sexual), age on own, street victimization (physical or sexual). | 35.5% of youth met lifetime criteria for PTSD (female >male); 16% of youth met 12-month criteria for PTSD. Majority of youth w/ PTSD criteria had history of abuse or victimization on the street. Trauma and victimization contribute to high rates of PTSD in youth experiencing homelessness |