

Associations between youth homelessness, sexual offences, sexual victimization, and sexual risk behaviors: A systematic literature review

Jessica A. Heerde,^{1,2} Kirsty E. Scholes-Balog¹, and Sheryl A. Hemphill¹

¹School of Psychology, Faculty of Arts and Sciences, Australian Catholic University, Fitzroy, Australia

²To whom correspondence should be addressed at School of Psychology, Faculty of Arts and Sciences, Australian Catholic University, 115 Victoria Parade, Fitzroy, Victoria, Australia 3065; e-mail: jessica.heerde@acu.edu.au

ABSTRACT

Homeless youth commonly report engaging in sexual risk behaviors. These vulnerable young people also frequently report being sexually victimized. This systematic review collates, summarizes, and appraises published studies of youth investigating relationships between homelessness, perpetration of sexual offences, experience of sexual victimization, and engagement in sexual risk behavior. A systematic search of seventeen psychology, health, and social science electronic databases was conducted. Search terms included “homeless*”, “youth”, “offend*”, “victimization”, “crime”, “rape”, “victim*”, and “sex crimes”. Thirty-eight studies were identified that met the inclusion criteria. Findings showed homeless youth commonly report being raped and sexually assaulted, fear being sexually victimized, and engage in street prostitution and survival sex. Rates of victimization and sexual risk behavior were generally higher for females. Given the paucity of longitudinal studies and limitations of current studies it is unclear whether homelessness is prospectively associated with sexual victimization or engagement in sexual risk behavior, and whether such associations vary cross-nationally and as a function of time and place. Future prospective research examining the influence of the situational context of homelessness is necessary to develop a better understanding of how homelessness influences the perpetration of sexual offences, experience of sexual victimization, and engagement in sexual risk behavior among homeless youth.

KEYWORDS: homelessness, adolescence, sexual risk behavior, sexual victimization, sexual offending, systematic review

INTRODUCTION

Homeless youth are a marginalized and vulnerable population group, who commonly report experiencing many obstacles in their daily lives. Engaging in unsafe or risky behaviors, and victimization by others' perpetration of such behaviors, are frequently reported by homeless youth (Baron & Hartnagel, 1998; Chen, Thrane, Whitbeck, & Johnson, 2006). Such behaviors may include property and physical offences (e.g., burglary and assault), being sexually harmed, and substance use. Perpetration of and victimization from such behaviors also has the potential to compromise the immediate and long-term health and social wellbeing of these young people (Ensign & Bell, 2004; Farrow, Deisher, Brown, Kulig, & Kipke, 1992).

Variation in both definitions of homelessness and methodological approaches to quantifying the number of homeless persons at any one time results in difficulty in producing definitive prevalence estimates of the number of homeless youth (Chamberlain & Mackenzie, 2008; Quilgars, Johnsen, & Pleace, 2008; Terry, Bedi, & Patel, 2010). The most recent Australian census estimated that 26,238 youth aged 12-24 years (approximately 25% of total number of homeless persons) were homeless in 2011 (Australian Bureau of Statistics [ABS], 2012). Data from the United States (US) shows between 1.6 and 2.8 million youth 13-21 years were homeless in 2009 (approximately 39% of homeless persons; Terry et al., 2010). In Canada, the number of young people homeless on any given night in 2009 was estimated as being 65,000 (approximately 43% of homeless persons; Raising the Roof, 2009), and in the United Kingdom, it is reported that approximately 75,000 youth 16-24 years were homeless over the period 2006-2007 (approximately 20% of homeless persons; Quilgars et al., 2008).

Homelessness is a complex situation, often the result of childhood trauma and adverse family experiences (e.g., Hyde, 2005; Martijn & Sharpe, 2006); homeless youth are known to experience physical, psychological, emotional, and sexual health problems that are

compounded by experiences prior to and during homelessness (Kennedy & Baron, 1993; Kushel, Evans, Perry, Robertson, & Moss, 2003; Pears & Noller, 1995). Such experiences are in themselves established risk factors for subsequent experience of victimization. For example, the experience of family violence and childhood sexual abuse are recognized precursors to homelessness and to engagement in aggressive behaviors by young people (Chen, Thrane, Whitbeck, Johnson, & Hoyt, 2007) and sexual revictimization (Simons & Whitbeck, 1991b; Tyler, Hoyt, & Whitbeck, 2000), respectively. Additionally, while homeless exposure to violence and being harmed by others' violent behavior, may be seen as normative practices (Kipke, Simon, Montgomery, Unger, & Iversen, 1997a).

Reported rates of sexual maltreatment and abuse amongst homeless youth are varied. For example, in one study of sexual victimization among female homeless and runaway adolescents in the US, the prevalence of sexual victimization was 20% (Tyler et al., 2000). A later study found that 35% of male and female heterosexual youth, and 59% of gay, lesbian and bisexual youth had experienced sexual victimization while homeless (Whitbeck, Chen, Hoyt, Tyler, & Johnson, 2004). In an Australian study, 70% of young women and 20% of young men had been sexually assaulted while homeless (Morrison, 2009). In the UK, one study estimated that 10% of homeless youth 16-24 years had been sexually assaulted (Quilgars et al., 2008).

Defining Homelessness, Sexual Risk Offences, Sexual Victimization, and Sexual Risk Behavior

Homelessness. Variation exists in definitions of homelessness. In the US, homeless young people are defined as those without a fixed, regular and appropriate night-time residence or those staying in a residence with other persons due to loss of housing or financial problems. Homeless young people recognized in this definition include those staying in motels, hotels, caravan parks, camping grounds, or emergency or transitional accommodation

and those waiting for a foster care placement, as well as those where the night-time residence is not designed for human accommodation including public spaces, parks, cars, abandoned buildings, or similar settings (National Coalition for the Homeless, 2011). Similarly, homeless persons in Canada include individuals or families without stable, permanent, and appropriate housing (including an individuals' ability to, and prospect of, obtaining housing; Canadian Homelessness Research Network, 2012). In the UK, homelessness is generally classified into statutory homelessness, non-statutory homelessness, and rough sleepers. Those classified under statutory homelessness are defined as homeless by local authorities in accordance with homelessness legislation, and generally includes families with dependent children, vulnerable adults, and pregnant women. Non-statutory homelessness consists of households and individuals not considered under the statutory definition including individuals with no dependent children, families with older non-dependent children, and individuals living on the street. Rough sleepers are classified as individuals living on the streets, in tents, parks, bus shelters, or buildings not designed for habitation (such as abandoned buildings, train stations, car parks; Homeless Link, 2013).

Internationally, definitions must recognize that homelessness is not solely the absence of suitable and safe physical shelter but also encompasses marginalization, deficits in capacity for employment and financial self-sufficiency, engagement in risk-taking behaviors, and exposure to victimization. The most recent Australian Census of Population and Housing defined homeless persons as those having either no occupancy at a residence, occupancy at a residence that is limited and non-renewable, and those in situations where as a result of the standard of housing, the individual has no control of, or space for, social interactions (ABS, 2012). The social and cultural definition of homelessness described by Chamberlain and Mackenzie (1992, 2008) is most commonly used for Australian policy purposes. Within this definition, *primary homelessness* includes individuals without conventional housing (e.g.,

those living on the streets or in parks), *secondary homelessness* those who are transient between temporary shelter (e.g., hostels), and *tertiary homelessness* individuals living in accommodation without the minimum standard of housing (e.g., single rooms with no bathroom; ABS, 2011; Chamberlain & Mackenzie, 1992, 2008).

Perpetration of sexual offences, victimization from others' perpetration of sexual offences, and engagement in sexual risk behavior. Definitions of the perpetration of sexual offences, victimization from others' sexual offenses, and sexual risk behavior are derived from the descriptions of offending behavior and victimization among homeless youth that were proposed by the Australian National Crime Prevention Unit (1999). Further, these definitions are informed by Australian law governing sexual offences (Beadnell, 2012). Similar definitions exist in the US (Office on Violence Against Women, 2013), UK (Crown Prosecution Service, 2013), and Canada (Ministry of Public Safety and Solicitor General, 2007). The *perpetration of sexual offences* is defined as sexual behavior performed by an individual(s) against another person without consent, and includes rape (penetration of the vagina, mouth or anus by a penis, or another part of the body, or object), sexual assault (forms of inappropriate touching of the genital area or a woman's breasts), and other sexual behaviors (e.g., coerced sexual activity).

Victimization from others' sexual offences (sexual victimization) is defined as the non-consensual sexual handling or threat of sexual harm experienced by an individual at the hands of another person and includes those behaviors described as sexual offences. *Sexual risk behavior* is defined as the exchange of sexual acts or practices by an individual in exchange for a commodity (or commodities), such as food, shelter, money, alcohol or drugs, or other goods from another person(s), and includes sex work (that is, the consensual exchange of sexual services for payment or reward), survival sex (that is, consensual or non-consensual exchange of sexual practices for money, food, shelter, alcohol or drugs), street prostitution

(the exchange of sex for money, gifts, drugs, a place to sleep, or other materials), and engagement in pornography.

Theoretical Approaches to Studies of Homelessness, Sexual Offending, Sexual Victimization, and Sexual Risk Behavior

Efforts to understand why homeless youth may be victims of another person's perpetration of sexual offences, perpetrate sexual offences themselves, or engage in sexual risk behaviors have adopted various theoretical approaches. The *risk amplification model* (Thrane, Yoder, & Chen, 2011; Tyler & Johnson, 2006; Tyler, Johnson, & Brownridge, 2008; Whitbeck, Hoyt, & Yoder, 1999) and *lifestyle-exposure theory* (McIntyre & Widom, 2011; Tyler & Johnson, 2006; Whitbeck & Simons, 1993) are amongst the most commonly applied theoretical perspectives. The *risk amplification model* purports that the possibility for the perpetration of sexual offences, sexual victimization, or the sexual risk behaviors of homeless youth is heightened by the circumstances an individual has experienced (or experiences) both prior, and subsequent to, homelessness (e.g., family sexual abuse and lack of shelter, respectively). *Lifestyle-exposure theory* speculates childhood abuse may be associated with individual attributes and characteristics that may increase the vulnerability of homeless youth to being sexually victimized. Further, it is proposed such vulnerability is heightened by the lack of safety afforded by private shelter, commonly experienced by homeless youth (e.g., living on the streets or in parks).

Relationships between Homelessness, Perpetration of Sexual Offences, Sexual Victimization, and Sexual Risk Behavior

Many studies investigating the existence of potential relationships between youth homelessness, perpetration of sexual offences, sexual victimization, and sexual risk behavior have used broad measures containing items assessing multiple forms of sexual victimization (e.g., rape, sexual assault, sexual coercion; Chen et al., 2007; Cochran, Stewart, Ginzler, &

Cauce, 2002; Tyler & Beal, 2010; Tyler, Hoyt, Whitbeck, & Cauce, 2001a, 2001b; Tyler, Whitbeck, Hoyt, & Cauce, 2004; Whitbeck et al., 2004; Whitbeck, Hoyt, & Ackley, 1997; Whitbeck, Hoyt, Yoder, Cauce, & Paradise, 2001). Findings from these studies have been varied. For example, in their US study of homeless youth, Whitbeck et al., (2001) reported that the age at which youth first ran away was negatively correlated with sexual victimization (measured by youth report of having been forced to do sexual things or sexually assaulted or raped) whereby younger age was associated with increased sexual victimization; however, this association did not hold following adjustment for covariates including gender, family abuse, and sexual orientation. Similar results have been reported elsewhere (Chen et al., 2007; Tyler et al., 2001b; Whitbeck et al., 2004; Whitbeck et al., 1997). Other studies have reported that the younger age at which the first run away experience occurs was related to decreased sexual victimization, consisting of unwanted or unpleasant sexual experiences (such as being touched sexually, forced to engage in sexual behaviors, insertion of objects or body parts into any part of their body, and sexual assault or rape), even after adjustment for multiple confounders (such as early sexual abuse, gender, age, physical appearance; Tyler et al., 2000; Tyler et al., 2001a). Conversely, Tyler et al., (2004) reported that the younger age of first runaway episode was related to increased sexual victimization by a stranger, friend, or acquaintance for females, but not for males.

Given the mixed findings in studies using broad measures of victimization, it is of interest to investigate potential relationships between homelessness and specific types of sexual offences perpetrated by, sexual victimization experienced, and sexual risk behavior. This may assist in deciphering the basis for the inconsistent findings reported in previous studies. In addition, such in-depth information may inform the development of strategies that target these behaviors and experiences among homeless youth. The development of targeted programs supporting homeless youth who perpetrate or are victimized by another person's

sexual offences, and those who engage in sexual risk behaviors may be advanced by a clearer understanding of the most prevalent and problematic behaviors and experiences, and the factors that may contribute to increased likelihood of these among homeless young people. There is a large body of published literature examining relationships between generalized sexual victimization and forms of sexual risk behavior and homelessness. A comprehensive examination of current knowledge regarding homelessness and specific forms of sexual offences perpetrated by homeless youth, sexual victimization, and the types of sexual risk behaviors engaged in by these young people, is required to guide future research, policy, prevention, and intervention.

The Current Study

The objective of this systematic review was to collate, summarize, and appraise published studies reporting links between homelessness and specific types of sexual offences, sexual victimization, and sexual risk behaviors in a population of young people. The review sought to examine: (1) the types and rates of sexual offences perpetrated by and against, and sexual risk behavior of, homeless youth, (2) whether factors associated with homelessness itself (such as length of homelessness, number of episodes of homelessness) are related to the perpetration of sexual offences, sexual victimization, and sexual risk risk-taking by homeless youth, and (3) whether situational factors have been considered in analyses investigating potential relationships between homelessness and the perpetration of sexual risk offences, sexual victimization, or engagement in sexual risk behavior.

METHOD

Search Strategy

The guidelines for systematic review from the Centre for Reviews and Dissemination (2008) informed the conduct of this review, and this review meets the criteria for systematic reviews described by the Preferred Reporting Items for Systematic Reviews and Meta-

analyses (PRISMA) statement (Moher, Liberati, Tetzlaff, Altman, & Group, 2009). A systematic search of seventeen psychology, health, and social science electronic abstraction databases was conducted, including Academic Search Complete, CINAHL, Expanded Academic ASAP, Health Policy Reference Centre, Health Source: Nursing/Academic Edition, OVID, ProQuest Social Science, ProQuest Psychology, ProQuest Nursing and Allied Health Source), PubMed, PsycArticles, PsycInfo, Psychology and Behavioral Sciences Collection, Psychology Collection, Social Work Abstracts, SocIndex, and Scopus. Searches were conducted using the following search terms as subject headings and (or) as keywords in the title and abstract. The consistency of search terms was maintained across each database. Key search terms spanned four specific areas congruent with the review aims: (a) homeless youth, (b) perpetration of sexual offences, (c) sexual victimization, and (d) sexual risk behaviors. Search terms concerning homeless youth included, “homeless*”, “youth”, “adol*”, “abandoned children”, “homeless children”, “homeless persons”, “homeless families”, “homeless men”, “homeless students”, “homeless women”, “homeless youth”, “homeless teenagers”, “street youth”, “at-risk youth”, “runaway teenagers”, “runaway children”, and “street children”. Search terms investigating sexual offences included, “indecent assault”, “indecent exposure”, “rape”, “sex offenders”, “sexual aggression”, “sexual harassment”, “acquaintance rape”, “gang rape”, “assault and battery”, “pornography” and “sex crimes”. Search terms exploring sexual victimization included “sexual consent”, “criminal victimization” “sexual victimization”, “victimization”, “crime victimization”, “victim*”, and “victims of crime”. Search terms investigating sexual risk behavior included, “transactional sex”, “prostitution”, “survival sex”, “trading sex”, “unsafe sex” and “sex industry”. Given the diversity in the conceptualization and measurement of sexual offences, victimization, and risk-taking behavior within the published literature, a broad range of search terms was

necessary. Further, types of sexual offences, victimization, and risk-taking behavior were often embedded within the text of published studies, thereby requiring an expansive search.

Inclusion and Exclusion Criteria

Rigorous inclusion and exclusion criteria were established prior to conducting the systematic search to ensure retrieved studies were of the highest relevance to the focus of the review. Specific limits included: the publication (a) reported on a sample of young people (baseline age 12-24 years), (b) was published in English language journals, (c) abstract was available, (d) published between 1990 and 2012, (e) examined an identifiable sample of homeless youth, (f) presented rates or quantitative analyses, and (g) reported findings describing sexual risk offences perpetrated by and against homeless youth, or engagement in sexual risk behavior by homeless youth. Minimum sample sizes were not stipulated. The date range for retrieved studies was selected due to interest in examining papers published in the past twenty years, as the focus of this paper is to critically evaluate the most up-to-date research conducted relevant to the focus of the review. Papers were discarded where the content did not meet the inclusion criteria or when (a) homelessness was not examined in relation to sexual offences, victimization, or risk-taking behaviors, or (b) specific forms of sexual offences, victimization, and risk-taking behavior were included within aggregate measures of behavior such as offending or victimization. Additionally, studies reporting contact with law enforcement (e.g., arrest, conviction, incarceration) as the sole outcome of interest were discarded; this was due to interest in examining self-reported perpetration of sexual offences by homeless youth and contact with law enforcement was considered to be defined by figures of authority (e.g., police) rather than youth themselves.

Through the initial systematic search, in excess of 500 articles were identified and retrieved. Article abstracts were examined to assess the initial relevance of the article. The content of the article was scanned to determine the relevance of the article where sufficient

information was not contained within the article's abstract. Additionally, citations of retrieved papers were scanned for additional articles that did not arise through the search terms. To accurately present the specific forms of sexual offences perpetrated, sexual victimization experienced, and sexual risk behavior by homeless youth across the reviewed papers, this review utilizes the terms and concepts employed within each reviewed study. At least one author thoroughly read and reviewed retrieved papers meeting the inclusion criteria, and a second author checked the content of twelve included studies (approximately 30%) to ensure the accuracy of extraction and interpretation of relevant data.

Calculation of Effect Sizes

To examine the degree of association between dependent and independent variables, effect sizes were calculated for the findings of reviewed studies (Tabachnick & Fidell, 2013). A range of different statistical techniques were used to calculate effect sizes due to the range of statistical analyses used in the reviewed studies. Effect size calculations were performed where sufficient data was reported, regardless of whether or not the results presented in the reviewed studies were statistically significant, with the purpose of converting reported findings to either Cohen's d , Cohen's f^2 , or a Phi (ϕ) coefficient (Tabachnick & Fidell, 2013).

RESULTS

Thirty-eight papers meeting inclusion criteria were retained for examination in this review. A description of these studies, including the study country of origin, location of the study within the country of origin, design, data collection methods, date of data collection, sample size, and demographics (age and gender) is presented in Table 1. The majority of studies were conducted in the US. Other countries of origin included Australia, Canada, Scotland, and Nigeria. All but three studies (Bailey, Camlin, & Ennett, 1998; McCarthy & Hagan, 2005; Weber, Boivin, Blais, Haley, & Roy, 2004) were of cross-sectional design. One study (Milburn, Rotheram-Borus, Rice, Mallet, & Rosenthal, 2006) presented analyses on

data obtained from a cross-national sample of youth from the US and Australia. In the majority of studies data were collected in the late 1980's to mid 1990's, with three studies analyzing data from the 2000's (Chen et al., 2007; Gaetz, 2004; Tyler & Beal, 2010).

Types and Rates of Sexual Offences Perpetrated, Sexual Victimization Experienced, and Sexual Risk Behavior by Homeless Youth

Across two studies, pimping was the sole reported sexual offence perpetrated by homeless youth. Rape, sexual assault, and witnessing and fearing the sexual behavior of others were the most commonly reported forms of sexual victimization examined across seventeen reviewed studies. Further, across twenty reviewed studies homeless youth described engaging in four predominant forms of sexual risk behavior: street prostitution and sex work, survival sex, trading sex for specific commodities, and pornography.

Types of sexual offences perpetrated by homeless youth.

Table 2 presents the rates of specific forms of sexual offences perpetrated by homeless youth. Rates for specific sub-groups of homeless youth (e.g., males and females) are provided when they were reported in the paper. Analyses of differences in rates for these sub-groups are presented in the subsequent sections of this paper. Rates of pimping were reported in two studies. Clatts and Davis (1999) found that 2% of their sample had pimped another person in return for money, while Gwadz et al., (2009) found that 20% of their sample had pimped another person. In an unexpected finding, females in this study reported higher rates of pimping another person compared to males (28% versus 12% respectively).

Types of sexual victimization experienced by homeless youth.

Seventeen studies reported rates for specific forms of sexual victimization experienced by homeless youth. The results of these studies including rates for specific sub-groups of homeless youth are presented in Table 3. Rates of victimization through rape and sexual assault were commonly lower in Canadian studies than those evident in studies conducted in

the US, with rates of sexual assault higher in Australian compared to US and Canadian based studies.

Rape. Six studies reported rates of rape amongst homeless youth; reported rates varied substantially across the studies. The rates of rape for entire samples of homeless youth ranged from 11% (Olley, 2006) to 43% (Simons & Whitbeck, 1991a, 1991b). Studies reporting gender-segregated rates generally showed higher rates of rape among female homeless youth. For example, Cauce et al (2000) found that 15% of females reported having been raped when homeless, compared to 1% of males. Similar results were reported by Coates and McKenzie-Mohr (2010). Higher rates were reported elsewhere (Simons & Whitbeck, 1991a). One study found that experience of rape varied by age, whereby 7% of youth 11-18 years and 17% of youth 19-24 years reported having been raped (Olley, 2006).

Sexual assault. The majority of reviewed studies reported rates for sexual assault; however, variation existed in the reported estimates and description of types of sexual assault. Kipke et al (1997a) found that 15% of their sample had been sexually assaulted, whereas the study by Gaetz (2004) reported a higher rate of sexual assault among homeless youth (32%). In an Australian study, Alder reported even higher rates, finding 76% of homeless youth had been sexually assaulted in the past year. Rates of sexual assault by gender were reported in five studies (Alder, 1991; Gaetz, 2004; Terrell, 1997; Whitbeck, Hoyt, Johnson, & Chen, 2007; Whitbeck & Simons, 1990). For males, rates of sexual assault ranged from 0% to 29%, with considerably higher rates reported for females. For example, Terrell (1997) reported 37%, and Alder (1991) 52% of females had experienced sexual assault while homeless.

Several studies reported rates for other specific forms of sexual assault, including unwanted sex, attempted or actual penetration, and forced sexual contact. For example, a study by Chen et al., (2007) reported that 37% of the sample of homeless youth had experienced unwanted sex, with rates similar for youth with child- and adolescent-onset

conduct disorder. Whitbeck et al., (2001) reported that 18% of homeless and runaway youth had been forced to have sex, whilst 29% of homeless youth in the study of Tyler et al., (2001b) described having been forced to engage in a sexual act. In both studies, rates for females were at least three times greater than for males. Stewart and colleagues (2004) found that approximately 5% of homeless adolescents in their sample described having been forced to watch someone do something sexual or expose themselves sexually in person or for a camera.

Witnessing and fearing the sexual behavior of others. Two reviewed studies reported rates of witnessing and fearing others' sexual behavior. Kipke and colleagues (1997a) reported 16% of the sample had witnessed someone being sexual assaulted, while 44% of homeless youth feared being sexually assaulted, molested, or raped. Likewise, Simons and Whitbeck (1991a) reported 11% of their sample had witnessed someone being raped.

Other sexual risk offences perpetrated against homeless youth. Several studies reported other forms of sexual risk offences perpetrated against homeless youth. Experience of being coerced into sexual behavior was reported by homeless youth in two studies. Terrell (1997) found that 36% of homeless and runaway youth had been propositioned for sexual favors, while Whitbeck et al., (1997) found that 35% of runaway and homeless youth had been asked to do something sexual against their will. In both studies, rates were higher for females than males. Specifically 46% of females and 30% of males had been propositioned for sexual favors (Terrell, 1997), and 43% and 23% of females and males asked to do something sexual against their will (Whitbeck et al., 1997).

Types of sexual risk behavior among homeless youth.

Table 4 presents the findings from twenty studies reporting individual forms of sexual risk behavior engaged in by homeless youth, including rates for specific youth sub-groups. Rates of engagement in street prostitution or sex work were slightly higher among Canadian

compared to US homeless youth. No studies outside the US investigated rates of survival sex, trading sex for specific commodities, or pornography among homeless youth.

Street Prostitution or Sex Work. Of the thirty-eight papers reviewed, twelve studies (Clatts & Davis, 1999; Kipke, Unger, Oconnor, Palmer, & LaFrance, 1997b; McCarthy & Hagan, 1991, 1992a, 1992b; Milburn et al., 2006; Olley, 2006; Simons & Whitbeck, 1991a, 1991b; Unger et al., 1998; Weber et al., 2004; Whitbeck et al., 2001) investigated the involvement of homeless youth in street prostitution or sex work. Varied rates were apparent across the studies specifically reporting on rates of street prostitution, with estimates between 3% (Whitbeck et al., 2001) and 46% (Kipke et al., 1997b). One study (Whitbeck et al., 2001) described comparative rates for males and females, with 2.5% of females and 3.4% of males reporting engagement in street prostitution. Further, one study (Olley, 2006) reported age related differences in rates of street prostitution, whereby there was substantially higher rates for older compared to younger homeless youth.

Engagement in sex work was reported in three studies. Olley (2006) found that 49% of participants reported sex work. Tyler and Beal (2010) found that 16% of their sample reported selling sex. Lower rates were reported by Milburn et al., (2006) in their cross-national study of homeless youth in Melbourne, Australia, and Los Angeles, US. Specifically, 8% of the cross-national sample who had been living away from home for more than 6 months, and 2% of those who had been living away from home for less than 6 months in total, reported sex work. When examined by country, results showed 6% of US youth and 5% of Australian youth reported sex work.

Survival sex. Several studies reported rates of survival sex, that is, consensual or non-consensual exchange of sexual practices for money, food, shelter, alcohol or drugs. In their study of survival sex amongst runaway and homeless youth, Greene and colleagues (1999) reported 27% of youth living on the streets and 9% of those living in a shelter had engaged in

survival sex. Two studies found that rates of survival sex varied as a function of sexuality, and one study (Halcon & Lifson, 2004) as a function of gender. Whitbeck et al., (2004) found that survival sex was reported by 16% of gay, lesbian and bisexual youth, and 10% of heterosexual youth, with rates higher for male youth identifying as gay or bisexual, compared to heterosexual males, and comparable to rates for lesbian or bisexual compared to heterosexual females. In a later study, Hein (2011) reported 15% of youth identifying as gay and 4% of heterosexual youth described engaging in survival sex. Halcon and Lifson (2004) reported 20% of males and 24% of females reported engaging in survival sex.

Trading sex for specific commodities. Several studies examined the engagement of homeless youth in trading sex for money, food, shelter, and/or drugs. In a study by Stein et al., (2009), 5% of the sample were found to have traded sex for money, with comparable rates for males and females. Similar rates were reported by Whitbeck and colleagues (2001). On the other hand, Gwadz et al., (2009) found much higher rates (lifetime estimates of 35%) of trading of sex for money, drugs, food, shelter, or another unspecified commodity. Slightly higher rates were reported for female, compared to male, homeless youth. In one further study Bailey et al., (1998) reported 28% of homeless youth had themselves engaged in trading sex for money, drugs, and/or food, or a place to stay, while 25% reported engaging in survival sex to provide these commodities to another person.

Pornography. Rates of engagement in pornography were consistent across studies and ranged between 1% (Unger et al., 1998) and 3% (Clatts & Davis, 1999). In gender-segregated estimates, Stein et al., (2009) reported 3% of males and 2% of females had participated in pornography. In age-segregated estimates Unger et al., (1998) stated 1% of youth had engaged in pornography for money.

Sub-Group Comparisons in the Types and Rates of Sexual Offences, Sexual Victimization, and Sexual Risk Behavior among Homeless Youth

Sub-group differences in rates of sexual offences perpetrated, sexual victimization experienced, and engagement in sexual risk behavior, by homeless youth were examined in four studies (Cauce et al., 2000; Gwadz et al., 2009; MacLean, Embry, & Cauce, 1999; Stewart et al., 2004). Finding from these studies, including effect sizes, are presented in Tables 2 and 3.

Sub-group comparisons of sexual offences perpetrated by homeless youth.

Table 2 presents the findings of one study that examined sub-group differences in rates of perpetrating sexual offences among homeless youth. In this study examining the initiation of homeless youth into the street economy, Gwadz et al., (2009) reported no gender difference in rates of pimping another person. Given insufficient reporting of data the effect size could not be calculated for this study.

Sub-group comparisons of sexual victimization experienced by homeless youth.

The findings of three studies (Cauce et al., 2000; MacLean et al., 1999; Stewart et al., 2004) examining sub-group differences in rates of sexual victimization experienced by homeless youth, including effect sizes, are presented in Table 3 (all from the US).

Rape. Two studies examined differences in rates of rape experienced by homeless youth. MacLean and colleagues (1999) investigated differences in report of rape in homeless youth by path of separation from the family, finding no difference in reported rates of rape between youth who had runaway, been kicked out of, or been removed from their family home. Cauce et al., (2000) found a higher rate of rape among female homeless youth than males. A small effect size indicated a minimal degree of difference in rates of rape for males and females in this study ($\phi = .27$).

Sexual assault. Stewart and colleagues (2004) investigated gender differences in the occurrence of various aspects of forced sexual contact among homeless youth, reporting varied findings. In particular, more homeless adolescent females than males reported forced

attempted or actual penetration, and having been kissed or touched sexually. Effect size calculations showed a statistically significant difference in these outcomes between males and females, with the difference between the groups ranging from small to medium ($d = .04$ to $d = .75$). Conversely, no gender differences were evident in reported rates of having been forcibly made to watch another person do something sexual, touch another person sexually, or expose oneself sexually in person or for a camera (Stewart et al., 2004).

Sub-group comparisons of sexual risk behavior among homeless youth.

The findings, including effect sizes, from five studies (Gwadz et al., 2009; Halcon & Lifson, 2004; Hein, 2011; McCarthy & Hagan, 1991; Unger et al., 1998) reporting sub-group differences for forms of sexual risk behavior among homeless youth are presented in Table 4.

Street Prostitution and Sex Work. Two studies examined differences in rates of street prostitution between homeless youth and non-homeless youth, with mixed findings.

McCarthy and Hagan (1991) found that rates of street prostitution were higher amongst homeless male and female youth in Canada once experiencing homelessness, compared to prior to being homeless. Examination of effect sizes showed a large difference in rates of street prostitution between males and females in this study ($\phi = .49$ for males and $\phi = .58$ for females). Unger et al., (1998) reported no difference in reported rates of street prostitution between street and non-street homeless youth in the US.

In terms of studies that examined sex work, Gwadz and colleagues (2009) found no difference in rates of sex work between homeless males and females. Interestingly, no difference in rates of sex work between street and non-street homeless youth was reported in another study (Unger et al., 1998)

Survival sex. In the study of Hein (2011) homeless gay, bisexual, and transgender youth reported higher rates of survival sex than heterosexual youth. One study reported no gender

difference in reported rates of survival sex (Halcon & Lifson, 2004). The calculation of effect sizes was not possible for these two studies given insufficient reporting of data.

Associations between Homelessness, Sexual Offences Perpetrated, Sexual Victimization Experienced and Sexual Risk Behavior

Statistical analyses examining whether homelessness was associated with the perpetration of sexual offences were not presented in any reviewed study. Associations between homelessness and sexual victimization experiences, or sexual risk behavior engaged in by youth, were reported in 14 reviewed studies. Of the reviewed studies reporting analyses of this nature, three studies examined associations between homelessness and the experience of sexual victimization. The majority of studies (79%) examined associations between homelessness and engagement in sexual risk behavior.

Homelessness and sexual victimization experienced by homeless youth.

The findings of three studies (Kipke et al., 1997a; Terrell, 1997; Whitbeck et al., 2007) presenting the analyses examining associations between homelessness and sexual victimization (including sexual assault and witnessing and fearing others' sexual behaviors) experienced by youth in the US, including effect sizes, are presented in Table 3. Associations between homelessness and experience of rape among youth were not examined in any reviewed study.

Sexual assault. No statistically significant correlations between homelessness and experience of sexual assault were evident in the two reviewed studies (Terrell, 1997; Whitbeck et al., 2007) examining sexual assault in general. One study (Kipke et al., 1997a) reported mixed findings using a combined measure of sexual assault, molestation, and rape. Specifically, length of time homeless was not predictive of sexual assault, molestation, or rape for youth who had been homeless between 3 and 12 months, or longer than 36 months and effect sizes were small ($d = .08$ and $.21$ respectively). However; having been homeless

for between 12 and 36 months increased the odds of sexual assault, molestation, or rape by almost three times. Examination of the effect size shows a small-moderate degree of association ($d = .26$).

Witnessing and fearing the sexual behavior of others. The study by Kipke et al., (1997a) found that increased length of time homeless was associated with increased odds of witnessing someone being sexually assaulted, with a small effect size ($d = .31$). Length of time homeless was not associated with fear of being sexually assaulted, molested, or raped for this sample, and effect sizes were small (d range .03 to .08).

Homelessness and sexual risk behavior among homeless youth.

The findings, including effect sizes, from eleven studies (Chen, Tyler, Whitbeck, & Hoyt, 2004; McCarthy & Hagan, 1992a, 1992b; McCarthy & Hagan, 2005; Milburn et al., 2006; Rice, Stein, & Milburn, 2008; Stein et al., 2009; Tyler & Beal, 2010; Tyler et al., 2001a; Weber et al., 2004; Whitbeck et al., 2004) reporting associations between homelessness and engagement in sexual risk behavior among homeless youth are presented in Table 4.

Street Prostitution and Sex Work. Homelessness was found to be predictive of engagement in street prostitution among homeless youth in Canada in two studies (McCarthy & Hagan, 1992a, 1992b), whereby a greater amount of time homeless was correlated with increased street prostitution, with the effect size moderate ($d = .51$). This effect held after adjustment for covariates (including age, gender, distance from home, sexual abuse, hunger, and shelter). Similar relationships between street prostitution and both previous street experience (McCarthy & Hagan, 1992b) and number of runaway episodes (McCarthy & Hagan, 1992a) were evident. Effect sizes could be calculated for one study (McCarthy & Hagan, 1992a), showing a small degree of association ($f^2 = .06$). Conversely, current homelessness and number of months on the street had no statistically significant relationship with street prostitution (McCarthy & Hagan, 1992b; McCarthy & Hagan, 2005). In another

Canadian study, Weber et al., (2004) found that experiencing nights without a place to sleep before the age of 16 years, and being younger than 18 years when first being without a place to sleep, predicted initiation into street prostitution for female homeless youth.

In the two US-based studies that examined sex work, one study (Chen et al., 2004) reported that homelessness was correlated with sex work. More specifically, while the amount of time a young person had spent homeless was positively correlated with sex work, a negative correlation was evident between the age at which a young person became homeless and sex work. A small effect size ($d = .26$) showed a small degree of association between both age at which youth became homeless and time homeless (Chen et al., 2004). Conversely, in another study there were no statistically significant correlations evident between either the age at which young people first ran away from home, number of runaway episodes, or length of time homeless and selling sex (Tyler & Beal, 2010). However, the calculation of effect sizes showed moderate associations between both age at first runaway experience and number of runaway experiences and selling sex ($d = .34$ and $.28$ respectively). The effect size for the association between length of time homeless and selling sex was small ($d = .04$).

Survival sex. A number of studies reported analyses investigating relationships between homelessness and survival sex. Milburn et al., (2006) reported the odds of survival sex were related to time spent homeless, with the odds of survival sex being lower for homeless youth in both the US and Australia who had been living away from home for less than 6 months in total, compared to homeless youth who had been living away from home for more than 6 months in total, with small to moderate effect sizes ($d = .32$ and $d = .35$ respectively). Tyler et al., (2001a) described a positive correlation between number of runaway episodes and survival sex, such that participation in survival sex was correlated with a greater number of runaway episodes for homeless youth in the US ($d = .30$). Similarly, Stein et al., (2009)

reported length of time homeless was positively correlated with survival sex for their US based sample, and for females, with small effect sizes ($d = .22$ and $d = .32$ respectively); however, these relationships were not maintained after adjustment for covariates including age, gender, parent relationships, and reason for leaving home. The calculation of effect sizes for the adjusted associations was not achievable given insufficient reporting of data. In contrast, following adjustment for covariates (including age, gender, sexuality, and caretaker physical and sexual abuse), Whitbeck et al., (2004) reported that having been on the street was predictive of survival sex for homeless youth in their US based study with a small effect size ($d = .18$), but how old adolescents were when they left home and were on their own for the first time was not predictive of survival sex.

Other forms of sexual risk behavior among homeless youth. Engagement in sexual risk behavior among homeless youth, in the form of sexual behavior with the potential to increase risk for contracting HIV, including trading sex for money, participating in pornography (photos, video, or film), trading sex for a place to stay, and number of sex partners with whom homeless youth had engaged in unprotected vaginal and (or) anal sex, was reported in one US based study (Rice et al., 2008). In this study, longer length of time homeless was positively correlated with an increased risk of HIV risk behaviors, with a small effect size ($d = .22$). The correlation between length of time homeless and HIV risk behavior was not statistically significant for youth residing in a shelter with a small effect size ($d = .04$).

Associations between Homelessness, Sexual Offences Perpetrated, Sexual Victimization Experienced, and Sexual Risk Behavior: Considering the Situational Context of Homelessness

The majority of reviewed studies did not adjust for covariates related to the situational context of homelessness (e.g., hunger, lack of financial income, peer influence) to examine the unique influence of homelessness on engagement in sexual risk behavior, sexual

victimization, or perpetration of sexual offences. Analyses in one study (McCarthy & Hagan, 1992a) adjusted for the situational variables of hunger and shelter, as well as demographics (age and gender), parent control, and sexual abuse and crime within the family. Results showed that among homeless youth the number of runaway episodes and length of time homeless were predictive of engagement in street prostitution, while hunger also maintained statistical significance in the fully adjusted model. Across the remaining reviewed studies, demographic covariates (such as age, gender, and ethnicity), distance away from the family home, parent education, family abuse and sexual abuse, were typically included, and maintained statistical significance within the fully adjusted multivariate models, while removing the predictive effect of homelessness variables (e.g., Chen et al., 2007; Terrell, 1997; Whitbeck et al., 1997). Additionally, number of friends in the sex trade remained statistically significant in the fully adjusted multivariate model findings predicting street prostitution in one study, while situational adversity experienced on the street did not (McCarthy & Hagan, 2005).

Theoretical Frameworks Utilized in Studies of Homelessness, Sexual Offences, Sexual Victimization, and Sexual Risk Behavior

The theoretical framework forming the foundation for research conducted was not described in nineteen of the reviewed studies. Variation existed in the theoretical approaches used across the remaining studies. Lifestyle/exposure theory was the most commonly applied theory, utilized in six studies (Simons & Whitbeck, 1991b; Tyler & Beal, 2010; Tyler et al., 2001a; Tyler et al., 2004; Whitbeck et al., 2001; Whitbeck & Simons, 1990) to examine potential relationships between prior family and current social and lifestyle factors and individual vulnerability to being victimized by others' sexual offences and engagement in sexual risk behaviors. Several studies were informed by routine activities theory (Gaetz, 2004; Tyler et al., 2001a; Tyler et al., 2004; Whitbeck et al., 2001), hypothesizing that one's

own and others' sexual risk behavior is heightened where a person is exposed to individual, social and environmental risk factors associated with criminal behavior and victimization. Similar notions were proposed in four studies utilizing the risk amplification model (Chen et al., 2004; Rice et al., 2008; Tyler et al., 2000; Tyler et al., 2001b). Other, less commonly applied theories, were strain theory (McCarthy & Hagan, 1992a), social control theory (Gwadz et al., 2009; McCarthy & Hagan, 1992b), situational perspectives (McCarthy & Hagan, 1991), trauma theory (Whitbeck et al., 2004), the life-course development model (Whitbeck et al., 1997), rational actions paradigm (McCarthy & Hagan, 2005), and the structural-choice theory of victimization (Tyler & Beal, 2010).

DISCUSSION

This systematic review is novel in its investigation of relationships between youth homelessness, perpetration of sexual offences, sexual victimization, and engagement in sexual risk behavior. The review examined published studies reporting (1) the types and rates of sexual offences perpetrated, sexual victimization experienced, and sexual risk behavior by homeless youth, (2) whether youth homelessness is statistically associated with perpetration of sexual offences, sexual victimization experienced, and sexual risk behavior, and (3) whether situational factors have been considered in analyses examining the relationship between homelessness, perpetration of sexual offences, sexual victimization experienced, and sexual risk behavior. Thirty-eight studies were identified and reviewed. Most studies were conducted in the United States. The studies investigated various forms of sexual victimization, with rape, sexual assault, and witnessing and fearing the sexual behavior of others the most commonly reported forms. Street prostitution and sex work, survival sex, trading sex for specific commodities, and engaging in pornography were the most commonly described forms of sexual risk behavior. Pimping was the only reported sexual offence

perpetrated by homeless youth. Rates of sexual victimization and engagement in sexual risk behavior by homeless youth varied widely across studies.

In addressing the first aim of this paper, the findings revealed there is variation in rates of sexual offences perpetrated against homeless youth, as well as sexual risk behaviors engaged in by homeless youth. For example, estimates of sexual assault ranged from 15 to 30%, and of rape from 11 to 43%, whereas engagement in street prostitution ranged from 3 to 46%. Such differences may be the result of disparity in measures of homelessness (e.g., length of time homeless, or current homelessness), or measures of sexual victimization (e.g., broad or specific measures of sexual assault). There exists extensive variability in the terminology utilized across the reviewed studies to examine the perpetration of sexual offences, sexual victimization experiences, and engagement in sexual risk behavior by homeless youth. For instance, 'street prostitution', 'engaging in sex work', 'survival sex' and 'trading sex' were all terms used reflecting the use of sexual risk behaviors by homeless youth to obtain commodities (e.g., food, shelter, drugs, money).

In line with the second aim of this review, mixed findings were reported for statistical relationships between homelessness and forms of victimization including report of having been raped, and witnessing and fearing the sexual behavior of others, as well as forms of sexual risk behavior such as engagement in street prostitution, sex work, and survival sex. Although higher rates of sexual assault were reported among female homeless youth in several studies (Stewart et al., 2004; Whitbeck et al., 2007), no statistically significant relationships were evident between homelessness and sexual assault in the two studies that reported predictive analyses (Terrell, 1997; Whitbeck et al., 2007). Finally, most reviewed studies did not examine situational variables in their analyses, and thus could not examine the unique contribution that homelessness itself had in these relationships.

Cross-National Differences in Sexual Offending, Sexual Victimization, and Sexual Risk Behavior

Given the lack of representation of published studies from outside the US, it remains to be determined whether rates of sexual offences, sexual victimization, and sexual risk behaviors among homeless youth vary by country. Differences in urban environments across cities and countries in which homeless young people are living, as well as variation in time period in which data collection occurred, may also explain differences in prevalence rates for sexual victimization and sexual risk behavior observed in this review. Only two studies reported rates for sexual offences, both of which examined samples from the US. Reported rates of sexual victimization (including rape and sexual assault) were generally higher among homeless youth in the US compared to Canada. Conversely, generally higher rates of street prostitution or sex work were reported by Canadian compared to US homeless youth. Importantly, other forms of sexual risk behavior including survival sex, trading sex for specific commodities, and engagement in pornography were only reported in US studies. This review therefore is limited in its ability to infer differences in rates of behavior as a function of time and place.

Investigation of sexual offences perpetrated against, and sexual risk behavior among, homeless youth and the relationships with homelessness are currently under-researched topics outside the US. This review identified one cross-national study analyzing an Australian sample (Milburn et al., 2006) and one early Australian study of the prevalence of victimization experiences among homeless youth (Alder, 1991). Internationally, research is needed to investigate the types and rates of sexual offences perpetrated, sexual victimization experienced, and sexual risk behavior among homeless youth and links between homelessness and these offences and behaviors. Studies of this nature should be embedded within appropriate theoretical frameworks taking into consideration the cultural, situational,

and psychological perspectives pertinent to homelessness (e.g., social-situational perspectives), which may relate to the perpetration of sexual offences, experience of sexual victimization, and engagement in sexual risk behaviors among homeless populations, including young people. For instance, “street” factors such as financial instability and unsafe and insecure shelter, the behavior of peers, perceived needs and the incidents a young person encounters while homeless may contribute to being sexually victimized or engagement in sexual risk behaviors.

Rates of Sexual Offending, Sexual Victimization, and Sexual Risk Behavior

Homeless youth compared to youth in the general population. No reviewed studies directly compared rates of sexual offences perpetrated against or sexual risk behavior among homeless youth to a matched comparison group of non-homeless youth; however, there exists some similarity with youth in the general population in the forms of sexual victimization experienced by homeless youth (e.g., rape and sexual assault) and the sexual offences perpetrated against these young people; however, some forms sexual risk behavior (e.g., survival sex), may be exclusively linked with homeless youth. Further, rates of sexual offences perpetrated against homeless youth appear to be greater than those reported for youth in the general population. The findings of this review suggest similar rates for homeless youth internationally. The one reviewed Australian study (Milburn et al., 2006) did not report rates of sexual assault for homeless youth. In the US, Finkelhor et al., (2005) approximated 5% of young people 6-12 years, and 17% of 13-17 years had been sexually victimized (including rape and sexual assault). In comparison, findings of this review showed rates of sexual assault for homeless youth in the US appear greater than that of youth in the general population. For instance, Chen et al., (2007) found 37% of youth reported experiencing unwanted sex. Whitbeck and Simons (1990) reported 26% of youth had been sexually assaulted, while 26% and 43% of youth described having been raped in other studies

(Simons and Whitbeck 1991a, 1991b). Further, Terrell (1997) found 37% of youth had been propositioned for sexual favors while homeless, and Tyler et al., (2001b) described 29% of youth had been forced to engage in a sexual act.

Rates of reported sexual victimization are acknowledged as being underestimated within the general public (ABS, 2010), due to personal, social, or cultural obstacles (e.g., fear, shame, embarrassment) associated with detailing an official testimony of these crimes. Homeless youth commonly report lacking positive relationships with adult family members or trusted significant adults to approach for assistance relating to health and personal concerns (Fitzpatrick, Irwin, LaGory, & Ritchey, 2007; Kushel, Vittinghoff, & Haas, 2001). Similarly, decisions made by homeless youth to (or not) seek health care, report sexual offences perpetrated against themselves, or seek help and assistance from support services (e.g., counseling, police assistance, treatment for injury) are often compounded by a low perceived problem severity and barriers to engagement with health and support services. Homeless youth commonly report barriers relating to a lack of social support (e.g., minimal opportunity to be accompanied by a trusted adult), prior negative experience with health agencies, support services, and police (e.g., perceived threats to safety, experience of childhood abuse, vulnerability resulting from illness), insufficient knowledge of access to and navigating health and support systems, low trust in health care and support providers and police, fear of potential contact with authorities (e.g., police or child protective services), and personal circumstances (such as shame, judgment, stigma, embarrassment, or injury cause; Ensign, 1998; Ensign & Bell, 2004; Farrow et al., 1992; French, Reardon, & Smith, 2003). Hence, underestimation of sexual victimization experienced by homeless youth may be considerably higher, in comparison to youth within the general population.

Sub-groups of homeless youth. Studies comparing rates of and specific forms of sexual victimization and engagement in sexual risk behavior amongst sub-groups of homeless youth,

are required to gain insight into which groups may be particularly at risk and warrant more intensive support and prevention services. Some reviewed studies suggested differences in rates of sexual victimization and engagement in sexual risk behaviors for sub-groups of homeless youth. Results showed experiences of sexual victimization may be higher, for example, for youth experiencing primary versus secondary homelessness, those in sexual minority groups, and females.

Gender differences in health risks among homeless youth are acknowledged, with females in comparison to males often reported as experiencing higher levels of suicidality (Kidd & Carroll, 2007), drug risk behavior (Montgomery et al., 2002), stress-related symptoms (such as anxiety, high blood pressure), respiratory problems (repeated coughs, trouble breathing), digestive and urinary problems (stomach cramps, urinary tract infections), and other health problems (Ritchey, La Gory, & Mullis, 1991). Other health concerns such as mental health problems (e.g., depression), substance use, and trauma and injury resulting from victimization or assault (Barry, Ensign, & Lippek, 2002; Bearsley-Smith, Bond, Littlefield, & Thomas, 2008) may arise from sexual victimization or engagement in sexual risk behavior. In addition, gender differences in sexual risk behaviors have been reported, with homeless women commonly describing higher rates of engaging in unprotected sex and being diagnosed with sexually transmitted infections (Tevendale, Lightfoot, & Slocum, 2009). Importantly, unplanned pregnancy is often the result of survival sex, unprotected intercourse, and sexual assault (Little, Gorman, Dzenoletas, & Moravac, 2007).

The findings of this review show that while rates of sexual victimization were presented separately for males and females in many published studies, with females commonly reporting higher rates of sexual assault, rape, having been propositioned for sexual favors, and forced to engage in sexual acts, few studies statistically analyzed whether rates of victimization differed by gender. Furthermore, only three studies reported rates of sexual risk

behavior separately for males and females. Interestingly, rates of engagement in sexual risk behavior were generally comparable across gender. Experiences of victimization and engagement in sexual risk behavior by young people while homeless place strain on individual coping techniques, and physical and psychological health. Homelessness predisposes young people to increased vulnerability to victimization, and engagement in behaviors that are not lawful or permissible within the community, such as survival sex, may be a way to alleviate pressures relating to lack of food, shelter, money, or clothing. Homeless youth must find a way to navigate these experiences and manage the resulting repercussions often without the support of trusted family and friends. It may be that gender differences in health risks among homeless youth arise as a manifestation of trauma associated with sexual victimization among young women. Findings from studies investigating associations between sexual victimization or engagement in sexual risk behavior and physical and psychological health problems, including disparity by gender, are required to inform prevention and intervention approaches aimed to address and decrease health concerns among homeless youth.

Relations between Homelessness and Sexual Offending, Sexual Victimization or Sexual Risk Behavior

No studies reported analyses investigating predictive relationships between homelessness and perpetration of sexual offences, two investigated predictive associations between homelessness and sexual victimization, and seven investigated predictive associations between homelessness and engagement in sexual risk behaviors. Of these studies, five were conducted using cross-sectional data; hence, the findings are limited in their ability to infer temporal ordering of homelessness and subsequent sexual victimization or risk-taking. Given the lack of representation of published studies from outside the US, it is unclear whether the strength of associations between homelessness and sexual offences or sexual victimization or

sexual risk behavior varies by country. No reviewed studies outside the US presented analyses examining associations between homelessness and sexual victimization. Several Canadian studies conducted analyses investigating associations between homelessness and street prostitution, but similar analyses in studies conducted within or outside the US were not apparent.

Studies comparing the strength of relationships between homelessness, perpetration of sexual offences, experience of sexual victimization, and engagement in sexual risk behavior, in various countries, are warranted. Variation in situational covariates between countries may influence the likelihood of sexual victimization among homeless youth or their engagement in sexual risk behavior. For example, Milburn et al (2006) reported at least 50% of homeless youth in their study received the Government financial stipend ‘youth allowance’ (available to young people aged 16-24 years who are studying full-time, undertaking a full-time Australian Apprenticeship, training, or looking for work). Although findings from this study showed no difference in rates of sex work between youth in Australia compared to those in the US, financial support such as this may influence such behavior. Differences in levels of social exclusion experienced by homeless youth and social policy may vary by country and influence the behavior of homeless youth. For example, Australia has a strong primary community and hospital-based health-care system ensuring the availability of free or low-cost access to health services. In relation to sexual risk behavior, differences in legislation pertaining to engagement in street prostitution and sex work (and associated legal penalties) may impact engagement in this behavior. In sum, the behavior and experiences of homeless youth may vary internationally as a result of the economic, social, and legal contexts faced by individuals. Studies of this nature are required to determine how variation in these situational factors across countries may be associated with differences in levels of sexual offences,

sexual victimization, and sexual risk behaviors, and how these factors could be targeted as a modifiable process by which to reduce the incidence of such behavior.

No clear relationships between the experience of homelessness and experience of sexual victimization or sexual risk behavior among youth were evident. Furthermore, few studies accounted for situational variables in the analyses. It has been suggested that behaviors engaged in and experienced while homeless are a consequence of the situational circumstances encountered by young people in this environment and within the lifestyle in which these young people are embedded, in order to survive (Farrow et al., 1992; McCarthy & Hagan, 1991). For example, experiencing homelessness affords little to no opportunity to adhere to laws and regulations that prohibit conduct like living off earnings from sexual risk behavior, or conducting affairs such as waiting in a public space for the purposes of street prostitution or sex work.

Similarly, being entrenched in the culture and lifestyle of homelessness and experiencing a lack of access to money for food or other commodities may predispose youth to increased vulnerability to victimization through exposure to subcultures of sexual victimization or risk-taking, violent peer relationships, a lack of appropriate shelter (Kennedy & Baron, 1993; Schreck, Wright, & Miller, 2002), and perceptions that violence and victimization are normative behaviors within this environment (Kipke et al., 1997a). Therefore, it is important to understand which situational factors arising from being homeless contribute to potential relationships between homelessness and perpetration of sexual offences, experience of sexual victimization, and engagement in sexual risk behavior by these young people. Importantly, homelessness and these outcomes may be associated through shared risk factors, thus it is important to investigate which situational factors contribute to the likelihood of these experiences and behaviors, over and above homelessness itself. Similarly, situational factors such as hunger or low to no financial stability may mediate relationships between

homelessness and sexual victimization or risk-taking. Further investigations accounting for situational variables are especially warranted.

Study Limitations

Limitations of reviewed studies. Several limitations to the reviewed studies are noted. Firstly, the majority of reviewed studies presented cross-sectional data analyses, and hence, are limited in their ability to infer the temporal ordering of relationships between the relevant variables. Few studies adjusted for covariates related to the situational context of homelessness. To examine if the situational context of homelessness is associated with changes in the relationships between homelessness and sexual offences, sexual victimization and sexual risk behavior, moderation and mediation analyses are required. These studies could examine how these situational factors can be targeted as a modifiable process by which to reduce the incidence of such behavior. Secondly, it is acknowledged that no reviewed studies directly compared rates of behavior among homeless youth to a matched comparison group of non-homeless youth. Thirdly, for some reviewed studies the calculation of effect sizes was not feasible given insufficient reporting of data. The estimation of effect sizes is important for reporting and interpreting potential differences in the occurrence of sexual offenses perpetrated, victimization experienced, and engagement in sexual risk behavior for subgroups of homeless youth. In addition, few studies directly compared rates of sexual offences, sexual victimization, and sexual risk behavior among homeless youth with those in the general population. Attempts to compare the magnitude of effect sizes for differences in rates of sexual offences, sexual victimization, and sexual risk behavior among sub-groups of homeless youth (and for homeless youth compared to youth in the general population), and associations between homelessness and these behaviors, across countries were restricted by the lack of representation of published studies from outside the US.

Finally, the majority of reviewed studies did not describe the theoretical framework forming the foundation on which the research was conducted. Theoretical perspectives, such as social-situational or psychological perspectives are required to determine how the perpetration of sexual offences, sexual victimization or sexual risk behavior among homeless youth may be a consequence of experiencing homelessness.

Limitations of the current review. Several limitations to this literature review and the interpretation of the findings are acknowledged. Firstly, in this paper a conservative method was used that included reviewing only those studies investigating specific forms of sexual offences perpetrated, sexual victimization experienced, and sexual risk behavior among homeless youth, rather than other behaviors (e.g., physical or property offending and victimization), or broader measures of violence and victimization. However, it is likely that at least some participants in these studies were “versatile” offenders, engaging in a range of different offences, or had experienced multiple forms of victimization.

Secondly, variation exists in the measures of homelessness analyzed. For example, constructs such as length of time homeless (e.g., 3-, 6-, 12-months), number of runaway episodes, previous street experience, and current homelessness were utilized across studies reporting associations between homelessness and the outcomes investigated in this review. Thirdly, disparity exists in constructs measuring sexual offences perpetrated against, and sexual risk behavior among, homeless youth. For example, some studies examined constructs such as rape or forced penetration, or sex work and street prostitution, survival sex or trading sex respectively. Similarly, some studies reported findings for broad measures of survival sex, whereas other findings related to trading sex for a specific commodity (e.g., money).

Further, this review was concerned with self-reported experience of the perpetration of sexual offences, sexual victimization, or engagement in sexual risk behaviors among homeless youth, and as such, studies reporting police contact for sexual offences, or arrest for

engagement in sexual risk behavior were omitted. Finally, 'grey literature' examining the topic was excluded from the review due to a focus on peer reviewed studies.

CONCLUSIONS

The current study presents a novel review of published studies reporting on relationships between homelessness and sexual offences perpetrated, sexual victimization, and sexual risk behavior among youth. Studies examining the perpetration of sexual offences by homeless youth are sparse. Homeless youth frequently describe being raped and sexually assaulted, and engaging in street prostitution and survival sex. Rates of these experiences and behaviors are generally higher for females. It is unclear how homelessness and sexual victimization or sexual risk behavior are related given the lack of consideration for the situational context of homelessness in the analyses of reviewed studies. Future prospective research, examining the influence of the situational context of homelessness, is important to developing understanding of how homelessness may influence the perpetration of sexual offences, sexual victimization, and engagement in sexual risk behavior. Investigations of the influence of victimization and sexual risk behavior on the physical and psychological health of homeless youth are also warranted. Research findings such as these can then contribute to the advancement of current intervention and prevention efforts designed to meet the health needs of homeless youth.

REFERENCES

- Alder, C. (1991). Victims of violence: The case of homeless youth. *Australian & New Zealand Journal of Criminology*, 24(1), 1-14. doi: 10.1177/000486589102400101
- Australian Bureau of Statistics. (2004). 4523.0 - sexual assault in australia: A statistical overview. Retrieved 27/07/2012, 2012, from <http://www.abs.gov.au/AUSSTATS/abs@.nsf/Lookup/4523.0Main+Features12004?OpenDocument>
- Australian Bureau of Statistics. (2010). 1370.0 - measures of australia's progress, 2010, sexual assault. Retrieved 27/07/2012, 2012, from [http://www.abs.gov.au/ausstats/abs@.nsf/Lookup/by%20Subject/1370.0~2010~Chapter~Sexual%20assault%20\(4.4.2.2\)](http://www.abs.gov.au/ausstats/abs@.nsf/Lookup/by%20Subject/1370.0~2010~Chapter~Sexual%20assault%20(4.4.2.2))
- Australian Bureau of Statistics. (2011). 2050.0.55.002 - position paper - australian bureau of statistics (abs) review of counting the homeless methodology Retrieved 07/06/2012, 2012, from <http://www.abs.gov.au/ausstats/abs@.nsf/Latestproducts/90DB868E528D3EEBCA2578DF00228CEE?opendocument>
- Australian Bureau of Statistics. (2012). 2049.0 - census of population and housing: Estimating homelessness. Retrieved 20/03/2013, 2013, from [http://www.ausstats.abs.gov.au/ausstats/subscriber.nsf/0/EB59F237159F7102CA257AB100170B61/\\$File/20490_2011.pdf](http://www.ausstats.abs.gov.au/ausstats/subscriber.nsf/0/EB59F237159F7102CA257AB100170B61/$File/20490_2011.pdf)
- Bailey, S. L., Camlin, C. S., & Ennett, S. T. (1998). Substance use and risky sexual behavior among homeless and runaway youth. *Journal of Adolescent Health*, 23(6), 378-388.
- Baron, S. W., & Hartnagel, T. F. (1998). Street youth and criminal violence. *Journal of Research in Crime and Delinquency*, 35(2), 166-192. doi: 10.1177/0022427898035002003

- Barry, P. J., Ensign, J., & Lippek, S. H. (2002). Embracing street culture: Fitting health care into the lives of street youth. *Journal of Transcultural Nursing, 13*(2), 145-152. doi: 10.1177/104365960201300208
- Beadnell, C. (Ed.). (2012). *The law handbook*. Victoria: Fitzroy Legal Service.
- Bearsley-Smith, C. A., Bond, L. M., Littlefield, L., & Thomas, L. R. (2008). The psychosocial profile of adolescent risk of homelessness. *European Child & Adolescent Psychiatry, 17*(4), 226-234. doi: 10.1007/s00787-007-0657-5
- Canadian Homelessness Research Network. (2012). Canadian definition of homelessness. Retrieved 9/12/2013, 2013, from <http://www.homelesshub.ca/ResourceFiles/06122012CHRNhomelessdefinition.pdf>
- Cauce, A. M., Paradise, M., Ginzler, J. A., Embry, L., Morgan, C. J., Lohr, Y., & Theofelis, J. (2000). The characteristics and mental health of homeless adolescents: Age and gender differences. *Journal of Emotional and Behavioral Disorders, 8*(4), 230-230.
- Centre for Reviews and Dissemination. (2008). Systematic reviews: Crd's guidance for undertaking reviews in health care. Layerthorpe: University of York.
- Chamberlain, C., & Mackenzie, D. (1992). Understanding contemporary homelessness: Issues of definition and meaning. *Australian Journal of Social Issues, 27*(4), 274-297.
- Chamberlain, C., & Mackenzie, D. (2008). *Counting the homeless 2006*. Canberra: Australian Bureau of Statistics.
- Chen, X., Thrane, L. E., Whitbeck, L. B., & Johnson, K. D. (2006). Mental disorders, comorbidity, and postrunaway arrests among homeless and runaway adolescents. *Journal of Research in Adolescence, 16*(3), 379-402. doi: 10.1111/j.1532-7795.2006.00499.x
- Chen, X., Thrane, L. E., Whitbeck, L. B., Johnson, K. D., & Hoyt, D. R. (2007). Onset of conduct disorder, use of delinquent subsistence strategies, and street victimization

- among homeless and runaway adolescents in the midwest. *Journal of Interpersonal Violence*, 22(9), 1156-1183. doi: 10.1177/0886260507303731
- Chen, X., Tyler, K. A., Whitbeck, L. B., & Hoyt, D. R. (2004). Early sexual abuse, street adversity, and drug use among female homeless and runaway adolescents in the midwest. *Journal of Drug Issues*, 34(1), 1-21. doi: 10.1177/002204260403400101
- Clatts, M. C., & Davis, W. R. (1999). A demographic and behavioral profile of homeless youth in new york city: Implications for aids outreach and prevention. *Medical Anthropology Quarterly*, 13(3), 365-374.
- Coates, J., & McKenzie-Mohr, S. (2010). Out of the frying pan, into the fire: Trauma in the lives of homeless youth prior to and during homelessness. *Journal of Sociology & Social Welfare*, 37(4), 65-96.
- Cochran, B. N., Stewart, A. J., Ginzler, J. A., & Cauce, A. M. (2002). Challenges faced by homeless sexual minorities: Comparison of gay, lesbian, bisexual, and transgender homeless adolescents with their heterosexual counterparts. *American Journal of Public Health*, 92(5), 773-777.
- Crown Prosecution Service. (2013). Sexual offences. Retrieved 17/12/2013, 2013, from http://www.cps.gov.uk/news/fact_sheets/sexual_offences/
- Ensign, J. (1998). Health issues of homeless youth. *Journal of Social Distress and the Homeless*, 7(3), 159-174.
- Ensign, J., & Bell, M. (2004). Illness experience of homeless youth. *Qualitative Health Research*, 14(9), 1239-1254. doi: 10.1177/1049732304268795
- Farrow, J. A., Deisher, R. W., Brown, R., Kulig, J. W., & Kipke, M. D. (1992). Health and health needs of homeless and runaway youth: A position paper of the society for adolescent medicine. *Journal of Adolescent Health*, 13(8), 717-726.

- Finkelhor, D., Ormrod, R., Turner, H., & Hamby, S. L. (2005). The victimization of children and youth: A comprehensive, national survey. *Child Maltreatment, 10*(1), 5-25. doi: 10.1177/1077559504271287
- Fitzpatrick, K. M., Irwin, J., LaGory, M., & Ritchey, F. (2007). Just thinking about it: Social capital and suicide ideation among homeless persons. *Journal of Health Psychology, 12*(5), 750-760. doi: 10.1177/1359105307080604
- French, R., Reardon, M., & Smith, P. (2003). Engaging with a mental health service: Perspectives of at-risk youth. *Child and Adolescent Social Work Journal, 20*(6), 529-548. doi: 10.1023/B:CASW.00000003142.13457.0a
- Gaetz, S. (2004). Safe streets for whom? Homeless youth, social exclusion, and criminal victimization. *Canadian Journal of Criminology and Criminal Justice, 46*(4), 423-455.
- Greene, J. M., Ennett, S. T., & Ringwalt, C. L. (1999). Prevalence and correlates of survival sex among runaway and homeless youth. *American Journal of Public Health, 89*(9), 1406-1409. doi: 10.2105/ajph.89.9.1406
- Gwadz, M. V., Gostnell, K., Smolenski, C., Willis, B., Nish, D., Nolan, T. C., . . . Ritchie, A. S. (2009). The initiation of homeless youth into the street economy. *Journal of Adolescence, 32*(2), 357-377. doi: 10.1016/j.adolescence.2008.01.004
- Halcon, L. L., & Lifson, A. R. (2004). Prevalence and predictors of sexual risks among homeless youth. *Journal of Youth and Adolescence, 33*(1), 71-80. doi: 10.1023/A:1027338514930
- Hein, L. C. (2011). Survival strategies of male homeless adolescents. *Journal of the American Psychiatric Nurses Association, 17*(4), 274-282. doi: 10.1177/1078390311407913

- Homeless Link. (2013). About homelessness. Retrieved 9/12/2013, 2013, from <http://homeless.org.uk/about-homelessness#.UqU2OOLG-Sp>
- Hyde, J. (2005). From home to street: Understanding young people's transitions into homelessness. *Journal of Adolescence*, 28, 171-183. doi: 10.1016/j.adolescence.2005.02.001
- Kennedy, L. W., & Baron, S. W. (1993). Routine activities and a subculture of violence: A study of violence on the street. *Journal of Research in Crime and Delinquency*, 30(1), 88-112. doi: 10.1177/0022427893030001006
- Kidd, S. A., & Carroll, M. R. (2007). Coping and suicidality among homeless youth. *Journal of Adolescence*, 30(2), 283-296. doi: <http://dx.doi.org/10.1016/j.adolescence.2006.03.002>
- Kipke, M. D., Simon, T. R., Montgomery, S. B., Unger, J. B., & Iversen, E. F. (1997a). Homeless youth and their exposure to and involvement in violence while living on the streets. *Journal of Adolescent Health*, 20(5), 360-367.
- Kipke, M. D., Unger, J. B., Oconnor, S., Palmer, R. F., & LaFrance, S. R. (1997b). Street youth, their peer group affiliation and differences according to residential status, subsistence patterns, and use of services. *Adolescence*, 32(127), 655-669.
- Kushel, M. B., Evans, J. L., Perry, S., Robertson, M. J., & Moss, A. R. (2003). No door to lock: Victimization among homeless and marginally housed persons. *Archives of Internal Medicine*, 163(10), 2492-2499.
- Kushel, M. B., Vittinghoff, E., & Haas, J. S. (2001). Factors associated with the health care utilization of homeless persons. *Journal of the American Medical Association*, 285(2), 200-206. doi: 10.1001/jama.285.2.200

- Little, M., Gorman, A., Dzendoletas, D., & Moravac, C. (2007). Caring for the most vulnerable: A collaborative approach to supporting pregnant homeless youth. *Nursing for Women's Health, 11*(5), 458-466. doi: 10.1111/j.1751-486X.2007.00213.x
- MacLean, M. G., Embry, L. E., & Cauce, A. M. (1999). Homeless adolescents' paths to separation from family: Comparison of family characteristics, psychological adjustment, and victimization. *Journal of Community Psychology, 27*(2), 179-187.
- Martijn, C., & Sharpe, L. (2006). Pathways to youth homelessness. *Social Science & Medicine, 62*, 1-12. doi: 10.1016/j.socscimed.2005.05.007
- McCarthy, B., & Hagan, J. (1991). Homelessness: A criminogenic situation? *British Journal of Criminology, 31*(4), 393-410.
- McCarthy, B., & Hagan, J. (1992a). Mean streets: The theoretical significance of situational delinquency among homeless youths. *American Journal of Sociology, 98*(3), 597-627. doi: <http://dx.doi.org/10.1086/230050>
- McCarthy, B., & Hagan, J. (1992b). Surviving on the street: The experiences of homeless youth. *Journal of Adolescent Research, 7*(4), 412-430. doi: <http://dx.doi.org/10.1177/074355489274002>
- McCarthy, B., & Hagan, J. (2005). Danger and the decision to offend. *Social Forces, 83*(3), 1065-1096. doi: <http://dx.doi.org/10.1353/sof.2005.0040>
- McIntyre, J. K., & Widom, C. S. (2011). Childhood victimization and crime victimization. *Journal of Interpersonal Violence, 26*(4), 640-663. doi: 10.1177/0886260510365868
- Milburn, N. G., Rotheram-Borus, M. J., Rice, E., Mallet, S., & Rosenthal, D. (2006). Cross-national variations in behavioral profiles among homeless youth. *American Journal of Community Psychology, 37*(1-2), 63-76. doi: <http://dx.doi.org/10.1007/s10464-005-9005-4>

- Ministry of Public Safety and Solicitor General. (2007). Sexual assault: Victim service worker handbook. Retrieved 17/12/2013, 2013, from <http://www.pssg.gov.bc.ca/victimservices/service-provider/docs/victim-service-worker-sexual-assault.pdf>
- Moher, D., Liberati, A., Tetzlaff, J., Altman, D. G., & Group, T. P. (2009). Preferred reporting items for systematic reviews and meta-analyses: The prisma statement. *PLoS Medicine*, 6(7), e1000097. doi: 10.1371/journal.pmed1000097
- Montgomery, S. B., Hyde, J., De Rosa, C. J., Rohrbach, L. A., Ennett, S., Harvey, S. M., . . . Kipke, M. D. (2002). Gender differences in hiv risk behaviors among young injectors and their social network members. *The American Journal of Drug and Alcohol Abuse*, 28(3), 345-475.
- Morrison, Z. (2009). Homelessness and sexual assault. Melbourne, Victoria: Australian Centre for the Study of Sexual Assault.
- National Coalition for the Homeless. (2011). Who is homeless? Retrieved 9/12/2013, 2013, from <http://www.nationalhomeless.org/factsheets/who.html>
- National Crime Prevention. (1999). Living rough: Preventing crime and victimisation among homeless young people. Canberra: National Crime Prevention, Attorney-General's Department.
- Office on Violence Against Women. (2013). Sexual assault. Retrieved 17/12/2013, 2013, from <http://www.ovw.usdoj.gov/sexassault.htm>
- Olley, B. (2006). Social and health behaviors in youth of the streets of ibadan, nigeria. *Child Abuse & Neglect*, 30(3), 271-282. doi: <http://dx.doi.org/10.1016/j.chiabu.2005.10.011>
- Pears, J., & Noller, P. (1995). Youth homelessness: Abuse, gender, and the process of adjustment to life on the streets. *Australian Journal of Social Issues*, 30(4), 405-424.

- Quilgars, D., Johnsen, S., & Pleace, N. (2008). Youth homelessness in the uk: A decade of progress? York: Joseph Rowntree Foundation.
- Raising the Roof. (2009). Youth homelessness in canada: The road to solutions. Toronto: Raising the Roof.
- Rice, E., Stein, J. A., & Milburn, N. G. (2008). Countervailing social network influences on problem behaviors among homeless youth. *Journal of Adolescence*, 31(5), 625-639. doi: <http://dx.doi.org/10.1016/j.adolescence.2007.10.008>
- Ritchey, F., La Gory, M., & Mullis, J. (1991). Gender differences in health risks and physical symptoms among the homeless. *Journal of Health & Social Behavior*, 32(1), 33-48.
- Schreck, C. J., Wright, R. A., & Miller, J. M. (2002). A study of individual and situational antecedents of violent victimization. *Justice Quarterly*, 19(1), 159-180. doi: 10.1080/07418820200095201
- Simons, R. L., & Whitbeck, L. B. (1991a). Running away during adolescence as a precursor to adult homelessness. *Social Service Review*, 65(2), 224-247.
- Simons, R. L., & Whitbeck, L. B. (1991b). Sexual abuse as a precursor to prostitution and victimization among adolescent and adult homeless women. *Journal of Family Issues*, 12(3), 361-379. doi: 10.1177/019251391012003007
- Stein, J. A., Milburn, N. G., Zane, J. I., & Rotheram-Borus, M. J. (2009). Paternal and maternal influences on problem behaviors among homeless and runaway youth. *American Journal of Orthopsychiatry*, 79(1), 39-50. doi: 10.1037/a0015411
- Stewart, A. J., Steiman, M., Cauce, A. M., Cochran, B. N., Whitbeck, L. B., & Hoyt, D. R. (2004). Victimization and posttraumatic stress disorder among homeless adolescents. *Journal of the American Academy of Child and Adolescent Psychiatry*, 43(3), 325-331. doi: 10.1097/00004583-200403000-00015

- Tabachnick, B. G., & Fidell, L. S. (2013). *Using multivariate statistics* (6th ed.). Boston, United States of America: Pearson Education Inc.
- Terrell, N. E. (1997). Street life: Aggravated and sexual assaults among homeless and runaway adolescents. *Youth & Society*, 28(3), 267-290.
- Terry, M. J., Bedi, G., & Patel, N. D. (2010). Healthcare needs of homeless youth in the united states. *Journal of Pediatric Sciences*, 2(1), e17-e28.
- Tevendale, H. D., Lightfoot, M., & Slocum, S. L. (2009). Individual and environmental protective factors for risky sexual behavior among homeless youth: An exploration of gender differences. *AIDS Behavior*, 13(1), 154-164. doi: 10.1007/s10461-008-9395-z
- Thrane, L. E., Yoder, K. A., & Chen, X. (2011). The influence of running away on the risk of female sexual assault in the subsequent year. *Violence and Victims*, 26(6), 816-829.
- Tyler, K. A., & Beal, M. R. (2010). The high-risk environment of homeless young adults: Consequences for physical and sexual victimization. *Violence and Victims*, 25(1), 101-115. doi: 10.1891/0886-6708.25.1.101
- Tyler, K. A., Hoyt, D. R., & Whitbeck, L. B. (2000). The effects of early sexual abuse on later sexual victimization among female homeless and runaway adolescents. *Journal of Interpersonal Violence*, 15(3), 235-250. doi: 10.1177/088626000015003001
- Tyler, K. A., Hoyt, D. R., Whitbeck, L. B., & Cauce, A. M. (2001a). The effects of a high-risk environment on the sexual victimization of homeless and runaway youth. *Violence and Victims*, 16(4), 441-455.
- Tyler, K. A., Hoyt, D. R., Whitbeck, L. B., & Cauce, A. M. (2001b). The impact of childhood sexual abuse on later sexual victimization among runaway youth. *Journal of Research on Adolescence*, 11(2), 151-176.

- Tyler, K. A., & Johnson, K. D. (2006). A longitudinal study of the effects of early abuse on later victimization among high-risk adolescents. *Violence and Victims, 21*(3), 287-306.
- Tyler, K. A., Johnson, K. D., & Brownridge, D. A. (2008). A longitudinal study of the effect of child maltreatment on later outcomes among high-risk adolescents. *Journal of Youth and Adolescence, 37*(5), 506-521.
- Tyler, K. A., Whitbeck, L. B., Hoyt, D. R., & Cauce, A. M. (2004). Risk factors for sexual victimization among male and female homeless and runaway youth. *Journal of Interpersonal Violence, 19*(5), 503-520. doi: 10.1177/0886260504262961
- Unger, J. B., Simon, T. R., Newman, T. L., Montgomery, S. B., Kipke, M. D., & Albornoz, M. (1998). Early adolescent street youth: An overlooked population with unique problems and service needs. *Journal of Early Adolescence, 18*(4), 325-348. doi: 10.1177/0272431698018004001
- Weber, A. E., Boivin, J., Blais, L., Haley, N., & Roy, E. (2004). Predictors of initiation into prostitution among female street youths. *Journal of Urban Health: Bulletin of the New York Academy of Medicine, 81*(4), 584-595. doi: 10.1093/jurban/jth142
- Whitbeck, L. B., Chen, X., Hoyt, D. R., Tyler, K. A., & Johnson, K. D. (2004). Mental disorder, subsistence strategies, and victimization among gay, lesbian, and bisexual homeless and runaway adolescents. *The Journal of Sex Research, 41*(4), 329-342.
- Whitbeck, L. B., Hoyt, D. R., & Ackley, K. A. (1997). Abusive family backgrounds and later victimization among runaway and homeless adolescents. *Journal of Research on Adolescence, 7*(4), 375-392.
- Whitbeck, L. B., Hoyt, D. R., Johnson, K. D., & Chen, X. (2007). Victimization and posttraumatic stress disorder among runaway and homeless adolescents. *Violence and Victims, 22*(6), 721-734.

- Whitbeck, L. B., Hoyt, D. R., & Yoder, K. A. (1999). A risk-amplification model of victimization and depressive symptoms among runaway and homeless adolescents. *American Journal of Community Psychology, 27*(2), 273-296. doi: 10.1023/A:1022891802943
- Whitbeck, L. B., Hoyt, D. R., Yoder, K. A., Cauce, A., & Paradise, M. (2001). Deviant behavior and victimization among homeless and runaway adolescents. *Journal of Interpersonal Violence, 16*(11), 1175-1204. doi: 10.1177/088626001016011005
- Whitbeck, L. B., & Simons, R. L. (1990). Life on the streets: The victimization of runaway and homeless adolescents. *Youth & Society, 22*(1), 108-125.
- Whitbeck, L. B., & Simons, R. L. (1993). A comparison of adaptive strategies and patterns of victimization among homeless adolescents and adults. *Violence and Victims, 8*(2), 135-152.

Table 1. Description of studies meeting review criteria.

Author	Country of Origin	Quantitative/Qualitative	Cross-sectional/Longitudinal	Location	Primary Sampling Unit	Data Collection Method	Date data collected	Sample size	Gender (% female)	Average Age (yrs)
Alder (1991)	AUS	Qualitative	Cross-sectional	Melbourne	Service and street-based sites	Structured interview	1989	51	Not stated	Not stated
Bailey, et al., (1998)	USA	Quantitative	Longitudinal	Washington DC	Service and street-based sites	Structured interview	1995-6	327	Approx 50	15
Cauce, et al., (2000)	USA	Quantitative	Cross-sectional	Seattle, Bremerton, Everett (Washington)	Service based sites	Survey/Diagnostic interview	1995	364	42	16.4
Chen, et al., (2007)	USA	Quantitative	Cross-sectional	St. Louis, Kansas City, Omaha, Lincoln, Des Moines, Cedar Rapids, Iowa City, Wichita	Service and street-based sites	Structured interview	2000	428	56	17.4
Chen, et al., (2004)	USA	Quantitative	Cross-sectional	St. Louis and Kansas City, Missouri, Wichita, Kansas, Lincoln, Nebraska, Des Moines, Iowa	Service and street-based sites	Structured interview	Not stated	361	100	16

Clatts & Davis (1999)	USA	Quantitative and Qualitative	Cross-sectional	New York City	Street-based sites	Structured interview	1993-4	260	26	Not stated
Coates & McKenzie-Mohr (2010)	Canada	Quantitative	Cross-sectional	Maritime provinces	Service-based sites	Survey/Interview	Not stated	102	35	Not stated
Gaetz (2004)	Canada	Quantitative and Qualitative	Cross-sectional	Toronto	Service-based sites	Structured interview	2001	208	39	20
Greene, et al., (1999)	USA	Quantitative	Cross-sectional	Not stated	Service and street-based sites	Structured interview	1992	1159	61	16-18
Gwadz, et al., (2009)	USA	Quantitative and Qualitative	Cross-sectional	New York City	Service-based sites	Structured interview	Not stated	80	50	19
Halcon & Lifson (2004)	USA	Quantitative	Cross-sectional	Minneapolis	Service and street-based sites	Structured interview	1998-9	203	40.4	19.2 Males 18.4 Females
Hammersley & Pearl (1996)	Scotland	Quantitative	Cross-sectional	Glasgow	Service-based sites	Semi-structured interview	1994	100	44	Not stated
Hein (2011)	USA	Quantitative and Qualitative	Cross-sectional	Los Angeles, California, Washington D.C., Indianapolis, Ohio, Nevada, Tennessee	Service and street-based sites	Semi-structured interview	Not stated	70	0	19
Kipke, Simon, et	USA	Quantitative	Cross-sectional	Los Angeles	Service and street-based	Structured interview	1994-5	432	34	19.0

al., (1997)					sites					
Kipke, Unger, et al., (1997)	USA	Quantitative	Cross-sectional	Los Angeles	Service and street-based sites	Structured interview	1993-4	752	29	16-21
MacLean, et al., (1999)	USA	Quantitative	Cross-sectional	Seattle	Drop-in centre	Structured interview	Not stated	356	42	16.5
McCarthy & Hagan (1991)	Canada	Quantitative	Cross-sectional	Toronto	Service and street-based sites	Survey	1987-8	390	33	17.7
McCarthy & Hagan (1992a) ^c	Canada	Quantitative	Cross-sectional	Toronto	Service and street-based sites	Survey	1987-8	390	33	17.7
McCarthy & Hagan (1992b) ^c	Canada	Quantitative	Cross-sectional	Toronto	Service and street-based sites	Survey	1987-8	390	33	17.7
McCarthy & Hagan (2005)	Canada	Quantitative & Qualitative	Longitudinal	Toronto, Vancouver	Service and street-based sites	Structured interview	1992	482	Not stated	19.8
Milburn, et al., (2006)	USA & Australia	Quantitative and Qualitative	Cross-sectional	Melbourne, Los Angeles	Service and street-based sites	Structured interview	Not stated	USA 618 AUS 673	USA 51.6 AUS 50.4	USA 16.9 AUS 17.7
Olley (2006)	Nigeria	Quantitative and Qualitative	Cross-sectional	Ibadan	Street-based sites	Survey/Semi-structured interview	Not stated	169	10.7	18.4
Rice et al., (2008)	USA	Quantitative	Cross-sectional	Los Angeles County	Service and street-based sites	Structured interview	Not stated	696	Not stated	17
Simons & Whitbeck (1991a)	USA	Quantitative	Cross-sectional	Des Moines, Iowa	Service based sites	Semi-structured interview	Not stated	84	52	16-17
Simons &	USA	Quantitative	Cross-	Des Moines,	Service-based	Semi-structured	Not	40	100	16-17

Whitbeck (1991b)			sectional	Iowa	sites	interview	stated			
Stein, et al., (2009)	USA	Quantitative	Cross-sectional	Los Angeles County	Service and street-based sites	Structured interview	Not stated	501	49.5	17
Stewart, et al., (2004)	USA	Quantitative	Cross-sectional	Seattle	Service and street-based sites	Semi-structured interview	1995-8	374	46	17
Terrell (1997)	USA	Quantitative	Cross-sectional	Des Moines, Iowa	Service and street-based sites	Structured interview	Not stated	240	40	15-18
Tyler & Beal (2010)	USA	Quantitative	Cross-sectional	Not stated	Street-based sites	Structured interview	2004-5	127	28	21.5
Tyler, et al., (2001a) ^c	USA	Quantitative	Cross sectional	Seattle	Service and street based sites	Structured interview	1996-8	372	45.4	17
Tyler, et al., (2001b) ^c	USA	Quantitative	Cross-sectional	Seattle	Service and street-based sites	Structured interview	1996-8	372	45.4	17
Unger, et al., (1998)	USA	Quantitative	Cross-sectional	California	Service and street-based sites	Structured interview	1993-5	245	49	12-15
Weber, et al., (2004)	Canada	Quantitative	Longitudinal	Montreal	Service-based sites	Structured interview	1995-2000	148	100	18.8
Whitbeck, et al., (2004)	USA	Quantitative	Cross-sectional	St. Louis, Kansas City, Omaha, Lincoln, Des Moines, Cedar Rapids, Iowa City, Wichita	Service and street-based sites	Structured interview	Not stated	428	Not stated	17.4

Whitbeck, et al., (1997)	USA	Quantitative	Cross-sectional	Missouri, Iowa, Nebraska, Kansas	Service and street-based sites	Structured interview	Not stated	108	59	16
Whitbeck, et al., (2007)	USA	Quantitative	Cross-sectional	St. Louis, Kansas City, Omaha, Lincoln, Des Moines, Cedar Rapids, Iowa City, Wichita	Service and street-based sites	Structured interview	Not stated	428	56	17.4
Whitbeck, et al., (2001)	USA	Quantitative	Cross-sectional	Missouri, Iowa, Nebraska, Kansas, Seattle	Service and street-based sites	Structured interview	1995-6	602 ^a 372 ^b	60 ^a 45.4 ^b	16.27 ^a 17.17 ^b
Whitbeck & Simons (1990)	USA	Quantitative	Cross-sectional	Not stated	Service and street-based sites	Structured interview	Not stated	84	52	16-17

Note. Service sites include shelters and drop-in centers. Street-based sites include street corners, populated areas/blocks, parks, alleys, bars, and fast-food restaurants. Government providers refer to examination of child protection records.

^aParticipants from the Midwest homeless and runaway adolescent project

^bParticipants from the Seattle homeless youth project

^cAnalyzed sample unchanged between studies.

Table 2. Empirical studies reporting rates of sexual offences and relationships between homelessness and sexual offences perpetrated by homeless youth.

Author	Current housing status	Sexual offences	Statistical analysis method	Findings	Effect size
Clatts & Davis (1999)	Various living arrangements	Pimping	Percentages	<i>Sexual offences (analytic sample):</i> 2% reported pimping another person	
Gwadz, et al., (2009)	Various living arrangements	Pimping	Percentages <i>t</i> -test (by gender)	<i>Sexual offences (Lifetime, analytic sample):</i> 20.0% reported pimping someone <i>Sexual offences (Lifetime, males):</i> 12.2% reported pimping someone <i>Sexual offences (Lifetime, females):</i> 28.2% reported pimping someone <i>Sexual offences</i> No significant difference in rates of pimping another person (χ^2 not stated, NS)	n/a

Note. Various living arrangements include independent living (apartment, house, sole contributor to housing financial expenses), living in share accommodation, living with parents or relatives, living with previous foster care parents, homeless, client in a treatment facility).

χ^2 = chi-square

n/a = insufficient data reported for calculation of effect size

NS = not statistically significant.

Table 3. Empirical studies reporting rates of sexual victimization and relationships between homelessness and sexual victimization experienced by homeless youth.

Author	Current housing status	Measure of homelessness	Sexual victimization	Statistical analysis method	Findings	Effect size
Alder (1991)	Various living arrangements		Sexual assault	Percentages	<i>Sexual victimization (analytic sample):</i> 52% reported having been sexually assaulted <i>Sexual victimization (male sample):</i> 29% reported having been sexually assaulted <i>Sexual victimization (female sample):</i> 76% reported having been sexually assaulted	
Cauce, et al., (2000)	Various living arrangements		Rape	Percentages Chi-square analysis (by gender)	<i>Sexual victimization (male sample):</i> 1% reported having been raped <i>Sexual victimization (female sample):</i> 15% reported having been raped <i>Sexual victimization</i> Females more likely to report rape ($\chi^2=26.04^{***}$)	$\phi .27$
Chen, et al., (2007)	Various living arrangements		Unwanted sex Sexual assault or rape	Percentages	<i>Sexual victimization (analytic sample):</i> 37.0% reported having experienced unwanted sex 19.6% reported having been sexually assaulted or raped <i>Sexual victimization (child-onset conduct disorder):</i> 36.6% reported having experienced unwanted sex 16.8% reported having been sexually assaulted or raped <i>Sexual victimization (adolescent-onset conduct disorder):</i> 37.4% reported having experienced unwanted sex 22.8% reported having been sexually assaulted or raped	
Coates & McKenzie-	Various living		Rape Sexual abuse	Percentages	<i>Sexual victimization (male sample):</i> 0% reported having been raped	

Mohr (2010)	arrangements				2% reported having been sexually abused <i>Sexual victimization (female sample):</i> 11% reported having been raped 3% reported having been sexually abused	
Gaetz (2004)	Various living arrangements		Sexual assault	Percentages	<i>Sexual victimization (analytic sample):</i> 31.9% reported having been sexually assaulted <i>Sexual victimization (male sample):</i> 18.9% reported having been sexually assaulted <i>Sexual victimization (female sample):</i> 51.4% reported having been sexually assaulted	
Hammersley & Pearl (1996)	Various living arrangements	Homelessness	Sexual advances or assault		<i>Sexual victimization (analytic sample):</i> 28% reported having experienced sexual advances or assault	
Kipke, Simon, et al., (1997)	Various living arrangements	Length of time homeless	Sexual assault Sexual assault, molestation or rape	Percentages Logistic regression	<i>Sexual victimization (analytic sample):</i> 15% reported having been sexually assaulted 16% reported witnessing someone being sexually assaulted 44% reported fearing being sexually assaulted, molested or rape <i>Sexual victimization</i> Length of time homeless: No effect on sexual assault, molestation or rape: 3-12 months homeless (OR 1.38, NS) 36+ months homeless (OR 2.35, NS) Increased sexual assault, molestation or rape: 12-36 months homeless (OR 2.97*) No effect on witnessing someone being sexually assaulted: 3-12 months homeless (OR 1.85, NS) 12-36 months homeless (OR 2.00, NS) Increased witnessing someone being sexually assaulted: 36+ months homeless (OR 3.66*) No effect on fear of being sexually assaulted, molested or raped:	<i>d</i> .08 <i>d</i> .21 <i>d</i> .26 <i>d</i> .15 <i>d</i> .17 <i>d</i> .31

					3-12 months homeless (OR 1.40, NS) 12-36 months homeless (OR 1.13, NS) 36+ months homeless (OR 1.25, NS)	<i>d</i> .08 <i>d</i> .03 <i>d</i> .05
MacLean, et al., (1999)^	Various living arrangements	Runaway	Rape	Percentages <i>t</i> -test (by entry into homelessness)	<i>Sexual victimization (runaway sample):</i> 8.8% reported having been raped <i>Sexual victimization (kicked out sample):</i> 2.5% reported having been raped <i>Sexual victimization (removed from home sample):</i> 9.5% reported having been raped <i>Sexual victimization</i> No significant differences in rates of rape (<i>t</i> not reported, NS)	n/a
Olley (2006)	Homeless		Rape	Percentages	<i>Sexual victimization (analytic sample):</i> 11% reported having been raped <i>Sexual victimization (11-18 years):</i> 7.1% reported having been raped <i>Sexual victimization (19-24 years):</i> 17.1% reported having been raped	
Simons & Whitbeck (1991a)	Various living arrangements		Rape	Percentages	<i>Sexual victimization (analytic sample):</i> 26% reported having been raped 11% reported witnessing someone being raped <i>Sexual victimization (male sample):</i> 10% reported having been raped <i>Sexual victimization (female sample):</i> 43% reported having been raped	
Simons & Whitbeck (1991b)	Various living arrangements		Rape	Percentages	<i>Sexual victimization (analytic sample):</i> 43% reported having been raped	
Stewart, et al., (2004)	Various living arrangements		Forced to watch someone do something sexual	Percentages <i>t</i> -test (by gender)	<i>Sexual victimization (analytic sample):</i> 5.1% reported having been forced to watch someone do something sexual 10.7% reported having been forced to touch someone	

			<p>Forced to touch someone sexually</p> <p>Forced to expose oneself sexually in person or for a camera</p> <p>Kissed or touched sexually (buttocks, breast, genitals)</p> <p>Attempted or actual sexual penetration</p>		<p>sexually</p> <p>5.1% reported having been forced to expose oneself sexually in person, or for a camera</p> <p>29.9% reported having been kissed or touched sexually</p> <p>19.5% reported attempted or actual sexual penetration</p> <p><i>Sexual victimization</i></p> <p>No significant difference in rates of being forced to watch someone do something sexual ($t .86$)</p> <p>No significant difference in rates of being forced to touch someone sexually ($t 1.67$)</p> <p>No significant difference in rates of being forced to expose self sexually in person or for a camera ($t 2.40$)</p> <p>Females higher rates of being kissed or touched sexually ($t 3.81$)</p> <p>Females higher rates of attempted or actual sexual penetration ($t 3.06$)</p>	<p>$d .04$</p> <p>$d .14$</p> <p>$d .30$</p> <p>$d .75^{**}$</p> <p>$d .49^{**}$</p>
Terrell (1997)	Various living arrangements	Length of time homeless	<p>Sexual proposition</p> <p>Sexual assault</p>	<p>Percentages</p> <p>Bivariate correlations</p> <p>Logistic regression</p>	<p><i>Sexual victimization (analytic sample):</i></p> <p>36.6% reported having been propositioned for sexual favors</p> <p>20.7% reported having been sexually assaulted</p> <p><i>Sexual victimization (male sample):</i></p> <p>29.9% reported having been propositioned for sexual favors</p> <p>9.5% reported having been sexually assaulted</p> <p><i>Sexual victimization (female sample):</i></p> <p>46.3% reported having been propositioned for sexual favors</p> <p>36.8% reported having been sexually assaulted</p> <p><i>Sexual victimization</i></p> <p>Length of time homeless (males):</p>	

					<p>No correlation with sexual assault (r .09, NS) No effect on sexual assault (β .30, NS)</p> <p>Length of time homeless (females): No correlation with sexual assault (r .07, NS) No effect on sexual assault (β .11, NS)</p>	<p>d .18 n/a</p> <p>d .14 n/a</p>
Tyler, et al., (2001b)	Various living arrangements		<p>Forced to engage in a sexual act Forced to touch someone sexually Kissed or touched sexually against ones will Attempted sexual penetration</p>	Percentages	<p><i>Sexual victimization (analytic sample):</i> 28.9% reported having been forced to engage in a sexual act 11.0% reported having been forced to touch someone sexually 30.7% reported having been kissed/touched sexually against their will 19.8% reported experiencing attempted sexual penetration 32% reported having been sexually victimized</p> <p><i>Sexual victimization (male sample):</i> 12.8% reported having been forced to engage in a sexual act 5.1% reported having been forced to touch someone sexually 16.3% reported having been kissed/touched sexually against their will 7.7% reported having experiencing attempted sexual penetration</p> <p><i>Sexual victimization (female sample):</i> 48.1% reported having been forced to engage in a sexual act 18.0% reported having been forced to touch someone sexually 48.1% reported having been kissed/touched sexually against their will 34.6% reported experiencing attempted sexual penetration</p>	

Whitbeck & Simons (1990)	Various living arrangements		Sexual assault	Percentages	<i>Sexual victimization (analytic sample):</i> 25.9% reported having been sexually assaulted <i>Sexual victimization (male sample):</i> 9.7% reported having been sexually assaulted <i>Sexual victimization (female sample):</i> 42.5% reported having been sexually assaulted	
--------------------------	-----------------------------	--	----------------	-------------	--	--

Note. Various living arrangements include independent living (apartment, house, sole contributor to housing financial expenses), living in share accommodation, living with parents or relatives, living with previous foster care parents, homeless, client in a treatment facility).

^ Sample categorized by form of separation from the family. Runaway sample includes youth having made an independent decision to leave the family home. Kicked out sample includes youth whose parents made the decision for them to leave the family home. Removed from home sample includes youth removed from the family home by authorities (e.g., child protection).

** $p < .01$

r = correlation coefficient, χ^2 = chi-square, ϕ = Phi coefficient, d = Cohen's d , t = t statistic.

n/a = insufficient data reported for calculation of effect size

NS = not statistically significant

PTSD = post-traumatic stress disorder

Table 4. Empirical studies reporting rates of sexual risk behavior and relationships between homelessness and sexual risk behavior among homeless youth.

Author	Current housing status	Measure of homelessness	Sexual risk behavior	Statistical analysis method	Findings	Effect size
Bailey, et al., (1998)	Various living arrangements		Survival sex	Percentages	<i>Sexual risk behavior (analytic sample):</i> 25.3% reported having received survival sex 28.3% reported engaging in survival sex	
Chen, et al., (2004)	Various living arrangements	Age on own Time on own	Survival sex	Bivariate correlations Multivariate regression	<i>Sexual risk behavior</i> Age on own: Negative correlation with survival sex ($r = -.13^*$) Decreased survival sex ($\beta = -.19^{**}$) Time on own: Positive correlation with survival sex ($r = .13^*$) Increased survival sex ($\beta = .20^{**}$)	$d = .26$ $f^2 = .12$ $d = .26$ $f^2 = .12$
Clatts & Davis (1999)	Various living arrangements		Street prostitution Pornography	Percentages	<i>Sexual risk behavior (analytic sample):</i> 25% reported prostitution 3% reported engaging in pornography	
Greene, et al., (1999)	Various living arrangements		Survival sex	Percentages	<i>Sexual risk behavior</i> 27.5% reported engaging in survival sex (homeless sample) 9.5% reported engaging in survival sex (shelter sample)	
Gwadz, et al., (2009)	Various living arrangements		Trading sex Sex work	Percentages Chi-square analysis (by gender)	<i>Sexual risk behavior (Lifetime):</i> 33.8% reported trading sex for money, drugs, food, shelter, other (analytic sample) 31.7% reported trading sex for money, drugs, food, shelter, other (male sample) 35.9% reported trading sex for money, drugs, food, shelter, other (female sample)	

					<p><i>Sexual risk behavior (past 3-months):</i> 16.3% reported sex work (analytic sample) 14.6% reported sex work (male sample) 17.9% reported sex work (female sample)</p> <p><i>Sexual risk behavior</i> No difference in rates of trading sex for money, drugs, food, shelter or other items, or sex work in the past 3 months (χ^2 not stated, NS)</p>	n/a
Halcon & Lifson (2004)	Various living arrangements		Survival sex Trading sex	Percentages <i>t</i> -test (by gender)	<p><i>Sexual risk behavior (analytic sample):</i> 21.4% reported survival sex (analytic sample) 19.6% reported survival sex (male sample) 23.8% reported survival sex (female sample)</p> <p><i>Sexual risk behavior</i> No significant differences in rates of ever receiving money, food, drugs, clothing, shelter for sex (<i>t</i> not stated, NS)</p>	n/a
Hein (2011)	Homeless		Survival sex	Percentages Fisher's exact test (heterosexual vs. gay, bisexual and transgender youth)	<p><i>Sexual risk behavior (analytic sample):</i> 4% heterosexual youth reported survival sex 0% of bisexual youth reported survival sex 15% of gay youth reported survival sex 100% of transgender youth reported survival sex</p> <p><i>Sexual risk behavior</i> Homeless gay, bisexual and transgender youth higher rates of survival sex ($p < 0.05$)</p>	n/a
Kipke, Unger, et al., (1997)	Various living arrangements		Prostitution	Percentages	<p><i>Sexual risk behavior (analytic sample):</i> 46% reported engaging in prostitution</p>	
McCarthy & Hagan (1991)	Homeless	Homelessness	Prostitution	Percentages Chi-square analyses (being at home vs. being on the street)	<p><i>Sexual risk behavior (analytic sample):</i> 29.7% reported engaging in prostitution</p> <p><i>Sexual risk behavior</i> Transition to homelessness (full sample): Higher rates of prostitution ($\chi^2=108.01^{**}$)</p> <p>Transition to homelessness (male sample):</p>	$\phi .94$

					Higher rates of prostitution ($\chi^2=63.02^{**}$) Transition to homelessness (female sample): Higher rates of prostitution ($\chi^2=43.02^{**}$)	ϕ .49 ϕ .58
McCarthy & Hagan (1992a) ^c	Homeless	Runaway episodes Time homeless	Prostitution	Percentages Bivariate correlations Multivariate regression	<i>Sexual risk behavior (analytic sample):</i> 29.7% reported engaging in prostitution <i>Sexual risk behavior</i> Runaway episodes Positive correlation with prostitution (r .20 ^{**}) Increased prostitution (β .02 ^{**}) Time homeless Positive correlation with prostitution (r .23 ^{**}) Increased prostitution (β .07 ^{**})	d .41 f^2 .06 d .51 f^2 .06
McCarthy & Hagan (1992b) ^c	Homeless	Previous street experience Current homelessness Time homeless	Prostitution	Percentages Multivariate regression	<i>Sexual risk behavior (analytic sample):</i> 29.7% reported engaging in prostitution <i>Sexual risk behavior</i> Previous street experience Increased engagement in prostitution (β .17 ^{**}) Current homelessness No effect on prostitution (β .02, NS) Time homeless Increased prostitution (β .22 ^{***})	n/a n/a n/a
McCarthy & Hagan (2005)	Homeless	Months on the street	Prostitution	Multivariate regression	<i>Sexual risk behavior</i> Months on the street: No effect on prostitution (β -.001, NS)	n/a
Milburn, et al., (2006)	Homeless	Time homeless	Sex work	Percentages Chi-square analysis (by country and homeless status) Logistic regression	<i>Sexual risk behavior (analytic sample):</i> 7.9% of homeless (experienced) youth reported sex work 1.4% of homeless (newly) youth reported sex work 6.0% United States youth reported engaging in sex work 5.5% Australian youth reported engaging in sex work <i>Sexual risk behavior</i>	

					Country: No significant difference in rates of sex work ($\chi^2=.10$, NS) Experienced homeless youth: Higher rates of sex work ($\chi^2=22.1^*$) Time homeless (Newly homeless, Australia): Decreased survival sex (OR .26*) Time homeless (Newly homeless, USA): Decreased survival sex (OR .11**)	ϕ .01 ϕ .13 d .32 d .53
Olley (2006)	Homeless		Sex work Prostitution	Percentages Chi-square analysis (by age)	<i>Sexual risk behavior (analytic sample):</i> 49% reported sex work (analytic sample) 27.3% reported engaging in prostitution (11-18 years) 78.6% reported engaging in prostitution (19-24 years) <i>Sexual risk behavior</i> Homeless youth 19-24 years: Higher rates of prostitution (t not stated, $p<.01$)	n/a
Rice, et al (2008)	Homeless	Time homeless Residing in shelter/on street	HIV Sex Risk Behavior^^^	Bivariate correlations	<i>Sexual risk behavior</i> Time homeless: Positive correlation with HIV risk behavior (r .13***) Shelter/Street: No correlation with HIV sex risk behavior (r .02, NS)	d .26 d .04
Simons & Whitbeck (1991a)	Various living arrangements		Prostitution Friends' prostitution	Percentages	<i>Sexual risk behavior (analytic sample):</i> 11% reported engaging in prostitution 29% reported having a friend who engaged in prostitution	
Simons & Whitbeck (1991b)	Various living arrangements		Prostitution	Percentages	<i>Sexual risk behavior (analytic sample):</i> 18% reported engaging in prostitution	
Stein, et al., (2009)	Various living	Time homeless	Trading sex Pornography	Percentages Bivariate	<i>Sexual risk behavior (analytic sample):</i> 5% reported trading sex for money	

	arrangements			<p>correlations Multivariate regression</p>	<p>2% reported engaging in pornography 4% reported trading sex <i>Sexual risk behavior (male sample):</i> 6% reported trading sex for money 3% reported engaging in pornography 4% reported trading sex <i>Sexual risk behavior (female sample):</i> 5% reported trading sex for money 2% reported engaging in pornography 4% reported trading sex <i>Sexual risk behavior</i> Time homeless (full sample): Positive correlation with survival sex ($r .11^*$) No effect on survival sex (β not reported, NS) Time homeless (female sample): Positive correlation with survival sex ($r .16^*$) No effect on survival sex (β not reported, NS) Time homeless (male sample): No correlation with survival sex ($r .08$, NS) No effect on survival sex (β not reported, NS)</p>	<p>$d .22$ n/a $d .32$ n/a $d .16$ n/a</p>
Tyler & Beal (2010)	Various living arrangements	Age at first runaway Number of runaway episodes Length of time homeless	Selling sex	<p>Percentages Bivariate correlations</p>	<p><i>Sexual risk behavior (youth 12-15 years):</i> 16% reported selling sex <i>Sexual risk behavior</i> Age at first runaway: No correlation with selling sex ($r -.17$, NS) Number of runaway episodes: No correlation with selling sex ($r .14$, NS) Length of time homeless: No correlation with selling sex ($r .02$, NS)</p>	<p>$d -.34$ $d .28$ $d .04$</p>
Tyler, et al., (2001a)	Various living arrangements	Age at first runaway episode Number of	Survival sex	<p>Bivariate correlations</p>	<p><i>Sexual risk behavior</i> Age at first runaway episode: No effect on survival sex ($r -.06$, NS) Number of runaway episodes:</p>	<p>$d -.12$</p>

		runaway episodes			Positive correlation with survival sex ($r .15^{**}$)	$d .30$
Unger, et al., (1998)	Various living arrangements	Homelessness	Hustling or prostitution Pornography	Percentages Chi-square analysis (by type of homelessness)	<p><i>Sexual risk behavior (youth 12-15 years):</i> 8% reported engaging in hustling/prostitution for money 1% reported engaging in pornography for money</p> <p><i>Sexual risk behavior (youth 16-23 years):</i> 13% reported engaging in hustling/prostitution for money 1% reported engaging in pornography for money</p> <p><i>Sexual risk behavior Homelessness:</i> No significant difference rates of sex work ($\chi^2=3.01$, NS) No significant difference in rates of prostitution ($\chi^2=2.09$, NS)</p>	$\phi .11$ $\phi .09$
Weber, et al., (2004)	Homeless	Nights without a place to sleep Age at fist without a place to sleep	Prostitution Initiation into prostitution	Percentages Cox proportional hazards regression	<p><i>Sexual risk behavior (youth 12-15 years):</i> 11% reported engaging in prostitution</p> <p><i>Sexual risk behavior</i> Nights without a place to sleep: Positive correlation with initiation into prostitution (before age 16) (HR 1.7) Positive correlation with initiation into prostitution (before age 16) (AHR 2.0)</p> <p>Age at first without a place to sleep: Positive correlation with initiation into prostitution (younger than 18ys) (HR 2.0)</p>	
Whitbeck, et al., (2004)	Homeless	Age on own Ever on the street	Survival sex	Percentages Multivariate regression Logistic regression	<p><i>Sexual risk behavior (analytic sample):</i> 16.1% gay, lesbian and bisexual youth reported engaging in survival sex 10.4% heterosexual youth reported engaging in survival sex</p> <p><i>Sexual risk behavior (male sample):</i></p>	

					<p>27.8% gay youth reported engaging in survival sex 9.0% heterosexual youth reported engaging in survival sex</p> <p><i>Sexual risk behavior (female sample):</i> 11.4% lesbian youth reported engaging in survival sex 11.7% heterosexual youth reported engaging in survival sex</p> <p><i>Sexual risk offences (analytic sample):</i> 58.7% gay, lesbian and bisexual youth reported having been sexually victimized 33.4% heterosexual youth reported having been sexually victimized</p> <p><i>Sexual risk offences (male sample):</i> 42.1% gay youth reported having been sexually victimized 19.6% heterosexual youth reported having been sexually victimized</p> <p><i>Sexual risk offences (female sample):</i> 65.9% lesbian youth reported having been sexually victimized 45.2% heterosexual youth reported having been sexually victimized</p> <p><i>Sexual risk behavior</i></p> <p>Age on own: No effect on survival sex (β .96, NS)</p> <p>Ever on the street: Increased survival sex (OR 2.09*)</p>	<p>n/a</p> <p>d .18</p>
--	--	--	--	--	---	-------------------------

^cAnalyzed sample unchanged between studies.

^{^^}HIV Sex Risk Behavior includes items: (1) sex trading for money, (2) participating in pornography (photos, video, or film), (3) trading sex for a place to stay, and (4) a sum score of the number of sex partners they had with whom they had engaged in unprotected vaginal and (or) anal sex.