



Social support and pregnancy attitudes among youth experiencing homelessness



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ABSTRACT

Youth experiencing homelessness demonstrate high rates of pregnancy and pregnancy involvement. Many homeless youth view pregnancies positively; some extant research has depicted this group's pro-pregnancy attitudes as a function of youth being in desperate need of resources, such as money, food, clothing, housing, and healthcare. Several studies report that female homeless youth, in particular, feel trapped by their need for monetary resources. Their lack of economic capital may thus cause some of them to go to great lengths, including becoming pregnant, merely to maintain access to supports, especially when pregnancy is perceived as desired by a partner who provides such benefits. However, knowledge of the association between youths' receipt of specific sources and types of social support and their pregnancy attitudes is limited. Social network data were collected from 1003 homeless youth (ages 13–25). Logistic regressions assessed whether specific forms of social support (informational, instrumental, emotional), provided by youths' social network members (street-based peers, home-based peers, family members, service providers, serious partners), are associated with youths' pro-pregnancy attitude endorsements. Multivariate results demonstrated that youth who reported receipt of instrumental support (e.g., monetary resources) from a serious partner were significantly more likely to endorse pro-pregnancy attitudes compared to their peers who did not receive such form of support. Findings suggest a need for creating dyadic communication and prevention activities that facilitate homeless youths' conversations about their economic resource needs, as part of discussions about their pregnancy motivations and relationship goals, in ways that foster informed, self-determined reproductive health decision-making.

1. Background literature

Over 3 million young people between the ages of 18 and 25 experience homelessness or housing instability each year in the United States (Morton et al., 2018; Morton, Dworsky, & Samuels, 2017). Youth experiencing homelessness (YEH) constitute a sub-population in which pregnancy rates are among the very highest in the U.S. A large-scale, U.S. study recently found that approximately 1.1 million children have a young parent who experienced homelessness within the previous year (Dworsky, Morton, & Samuels, 2018). The study also reported that among all sampled young women experiencing homelessness (ages 18–25), 44% are pregnant or mothers; among the sample of young men experiencing homelessness (ages 18–25), 18% are fathers or have a pregnant partner (Dworsky et al., 2018). Other regional studies indicate comparable findings, with 30–60% of female YEH reporting past or

current pregnancies (Cauce, Stewart, Whitbeck, Paradise, & Hoyt, 2005; Crawford, Trotter, Hartshorn, & Whitbeck, 2011; Haley et al., 2002; Winetrobe et al., 2013), and 22–43% of young male YEH indicating prior pregnancy involvement (Wagner, Carlin, Cauce, & Tenner, 2001; Winetrobe et al., 2013).

1.1. Pro-pregnancy attitudes among youth experiencing homelessness

Prior studies have shown that 20–40% of YEH respondents agreed that they are actively interested in becoming pregnant or being involved in a pregnancy within the following year (Begun, Combs, Torrie, & Bender, 2019; Cowley & Farley, 2001; Tucker et al., 2012; Winetrobe et al., 2013). For many YEH, pregnancy and parenthood are perceived as conduits toward accessing health care and other social services that they would otherwise lack (Begun, 2015; Begun, Combs, Torrie, &

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Bender, 2019a; Gauce et al., 2005; Haley, Roy, Leclerc, Boudreau, & Boivin, 2004; Smid, Bourgois, & Auerswald, 2010; Tucker et al., 2012). Pregnancy and parenting have been described by YEH as motivating factors for the incorporation of positive life changes, such as finishing school, reducing substance use, or obtaining housing and employment (Begun, Torrie, Combs, & Frey, 2019c; Hathazi, Lankenau, Sanders, & Jackson Bloom, 2009). Furthermore, pregnancy is seen by some youth as an opportunity to foster emotional bonds with a child as a way to heal the fractured bonds that many YEH experienced in their respective families of origin (Alschech & Begun, in press; Begun et al., 2019c; Thompson, Bender, Lewis, & Watkins, 2008; Tucker et al., 2012; Winetrobe et al., 2013). Having a child has also been described by some YEH as a means by which their connections back to their families may be strengthened (Begun et al., 2019c). Developing a more nuanced understanding of YEHs' pregnancy attitudes, and the contextualized factors that may play a role in driving such views, holds important research and service provision implications. The most effective approaches to prevention and service delivery may require tailoring or adaptation when considering the unique circumstances of these youths' lives (Begun, Combs, Schwan, Torrie, & Bender, 2018).

Furthermore, research has shown that certain types of interpersonal connections are associated with YEHs' pro-pregnancy attitude endorsements. Among YEH who indicate having contact with family members, and among YEH who report being in a relationship with a serious partner, significant associations have been shown between such social network connections and youths' endorsements of positive pregnancy attitudes (Tucker et al., 2012). Other characteristics that have shown positive associations with pro-pregnancy attitudes include identifying as male, as well as youths' longer homelessness duration (Tucker et al., 2012). Prior research has also found that the most demonstrative predictor of an adolescent woman's attitudes toward pregnancy is their perceptions of a serious (male) partner's desire for a baby (Cowley & Farley, 2001). However, as noted by Smid et al. (2010), adolescent males'—especially *homeless* adolescent males'—perspectives are conspicuously absent from pregnancy-related literature, interventions, and service provision efforts. Despite this exclusion, young men's influences and attitudes toward pregnancy are important, and their involvement in pregnancy decision-making and attitude-formation illustrates a critical omission in research and prevention.

Accordingly, it appears that YEHs' pregnancy attitudes are neither formed in isolation nor solely at the individual level. Instead, youths' pregnancy views are likely influenced by the attitudes and behaviors exhibited by those around them in addition to the social support offered (or not offered) by people to whom youth are connected. These findings point to a need for further research that emphasizes the impact of broader "ecological" or social network influences on YEHs' pregnancy attitudes and behaviors. In doing so, a critical aspect of exploring these young people's social networks is the recognition of the diversity of their social relationships, as research shows that homeless youths' social network compositions are indeed quite heterogeneous (Rice, Milburn, & Rotheram-Borus, 2007; Rice, Stein, & Milburn, 2008; Wenzel et al., 2012). YEH have networks that extend well beyond street-based peers (Johnson, Whitbeck, & Hoyt, 2005; Rice et al., 2007, 2008; Rice, Monro, Barman-Adhikari, & Young, 2010; Wenzel et al., 2012). One study found that over 80% of YEH named at least one non-street relationship as comprising a part of their respective social networks (Johnson et al., 2005). Wenzel et al. (2012) found that a majority of YEH reported dependence on one or more family member(s) for instrumental (e.g., money or necessities) and emotional support. YEHs' connections to pro-social individuals and groups have been linked to reduced risk behavior engagement and, more specifically, participation in fewer risky sexual practices (Rice et al., 2007, 2008; Tyler, 2008; Wenzel, Tucker, Golinelli, Green, & Zhou, 2010).

1.2. Egocentric social network analysis

Such network heterogeneity creates complexities in understanding risk behavior engagement among YEH, especially as this group typically has many different types of people, or "referent-group members" (i.e., home-based peers, street-based peers, family members, staff members and service providers, and serious partners), with whom they interact. A form of network analysis, "egocentric" social network analysis (Wasserman & Faust, 1994) facilitates the statistical examination of YEHs' support networks and how different forms of social support, provided by each respective referent-group, may be differentially associated with youths' attitudes and behaviors. Investigating these associations is essential given the potential vulnerability of these youth to the power and influence of others who provide them with much needed, sometimes even life-saving, resources and basic necessities for survival.

Most studies have not focused on YEHs' pregnancy attitudes in such a manner. The study that most closely resembles this line of inquiry used several egocentric social network analysis variables and found that YEH were less likely to endorse positive pregnancy attitudes if they had higher numbers of network members who regularly attended school as well, and also if they had fewer network members who they perceived as engaging in risky sex (Tucker et al., 2012). Youth were more likely to hold pro-pregnancy attitudes if they felt a greater commitment to a serious romantic partner, and if they listed a larger number of family members as comprising their social networks (Tucker et al., 2012). Yet, youths' receipt of specific forms of social support from their heterogeneous social networks in relationship to their pregnancy attitudes has not been the explicit focus of any research to date.

1.3. Social capital theory

Social Capital Theory (Bourdieu, 1986; Lin, 1999; Putnam, 2000) provides a useful theoretical lens to conceptualizing the relationship between social network supports and YEHs' endorsement of various health attitudes. Social capital is borne out of individuals' and groups' social interactions and relationships (Bourdieu, 1986; Lin, 1999; Putnam, 2000) and has been described as the capacity for an individual to obtain resources and other benefits simply by being a member of a given social network (Portes, 1998; Warschauer, 2004). Social capital, in comparison to how economic "capital" is typically characterized (e.g., wages, property), is instead the informational and instrumental resources and emotional support obtained specifically via individuals' social ties to others (Lin, 1999).

Putnam (2000) further delineated social capital as either *bonding* or *bridging*. Bonding capital, among homeless youth, equates to connecting with other street-based peers (Stablein, 2011). Such bonds play a role in developing group-based cohesion and can be valuable in light of the challenging circumstances often faced collectively this group. These relationships can also represent instability and thus do not typically provide opportunities for developing healthy behaviors (Whitbeck, 2009). Bridging capital, alternatively, epitomizes YEHs' relationships to home-based and pro-social individuals. These relationships often signify an "escape" from the challenges of street life. They may also represent the providers of emotional, informational, and instrumental support (Karabanow & Naylor, 2010; Mitchell & LaGory, 2002).

The primary research question explored by this study is: Are forms of social support (emotional, instrumental, informational), received from specific referent-group members, respectively, associated with youths' endorsements of pro-pregnancy attitudes? YEHs' pregnancy attitudes are hypothesized as being explicitly influenced by their needs for emotional connections to others, information on how and where helpful resources may be obtained, and tangible necessities. Moreover, this study explores how receipt of these forms of social support are comparatively associated with YEHs' pregnancy attitude formation, particularly as they are provided by "bonding" versus "bridging" types

of youths' specific referent-groups.

2. Methods

2.1. Sampling, Recruitment, and procedures

Secondary survey and social network data were analyzed from a larger study (MH R01 903336; PI: Eric Rice, University of Southern California), which had an aim of assessing the large interconnected networks of homeless youth. Cross-sectional quantitative data were obtained from homeless youth ($N = 1046$), aged 13–25 years between 2011 and 2013. Data collection took place at two drop-in centers in Los Angeles, California. Recruitment was conducted by graduate student research assistants who were onsite at both locations to approach youth for the duration of each site's respective service provision hours. Any client older than 13 years of age receiving services at either agency was eligible to participate. A consistent pair of two research assistants was responsible for all recruitment efforts to prevent youth from participating in the study multiple times. Signed voluntary informed consent was obtained from each youth who agreed to participate in the study. Informed consent was obtained from youth 18 years of age or older and informed assent was obtained from youth under the age of 18 years. The Principal Investigator's university-based institutional review board (IRB) waived parental consent, as homeless youth under age 18 are deemed unaccompanied minors and may not have an adult guardian who could provide consent.

2.2. Participants

The baseline sample was comprised of 1046 participants. After removing cases from the baseline sample with missing or incomplete data, results were examined from 1003 respondents. As shown in Table 1, the majority of the sample were male ($n = 729$, 72.7%) and whites were the largest racial or ethnic group ($n = 393$, 39.2%). The

Table 1
Sample Characteristics of Homeless Youth in Los Angeles, California. ($N = 1003$).

Characteristic	n	(%)
Sex ^a		
Male	729	(72.7)
Female	274	(27.3)
Race or Ethnicity		
American Indian or Alaska Native	28	(2.8)
Asian	6	(0.6)
Black	242	(24.1)
Native Hawaiian or Pacific Islander	6	(0.6)
White	393	(39.2)
Latinx	134	(13.4)
Multi-racial	194	(19.3)
High School Graduate	683	(68.1)
Current School Attendance	132	(13.2)
Current Employment	124	(12.4)
"Traveler" Status	370	(36.9)
Alcohol or Drug use Prior to Sex	396	(39.5)
Sexual Abuse History	129	(12.9)
Foster Care History	318	(31.7)
Prior Pregnancy or Pregnancy Involvement	415	(41.4)
Pregnancy Attitudes		
Anti-pregnancy	598	(59.6)
Pro-pregnancy	405	(40.4)
	M	SD
Age	21.4	2.2
Time Homeless (years)	2.9	3.2

^a Some categories may not total 100% due to rounding or way in which variable was measured.

average age of participants was 21.4 years ($SD = 2.2$), and youth had been homeless, on average, for 2.9 years ($SD = 3.2$). Regarding views on pregnancy, 40.4% ($n = 405$) of youth indicated endorsements of pro-pregnancy attitudes.

2.3. Instruments

The survey consisted of two parts: (1) an audio computer-assisted self-interview (ACASI), which included sociodemographic questions and items pertaining to attitudes and behaviors specific to each respondent; and (2) a face-to-face social network interview (F2F-SNI), which inquired about individuals nominated by youth as comprising their social networks, including nominees' characteristics, attitudes, and behaviors. Both interview portions could be completed in English or Spanish. Study participation required about 60 min for each participant, with each participant receiving \$20 in cash or gift cards in exchange for their time. Survey items and procedures were approved by the aforementioned university-based IRB.

2.3.1. Audio-computer assisted self-interview (ACASI)

The ACASI asked participants to enter their answers to questions privately into the computer after either silently reading questions as they appeared on the screen or after listening via headphones to questions being read aloud. After participants entered their responses, subsequent questions were selected by the computer using a series of pre-programmed skip patterns. The ACASI data collection approach was used because it has shown in prior research to reduce non-response rates, particularly to questions regarding potentially sensitive topics such as substance use, illegal activities, and sexual behaviors (Ghanem, Hutton, Zenilman, Zimba, & Erbeling, 2005; Macalino, Celentano, Latkin, Strathdee, & Vlahov, 2002; Morrison-Beedy, Carey, & Tu, 2006).

2.3.2. Face-to-face social network interview (F2F-SNI)

The F2F-SNI was then used to generate all data pertaining to youths' social networks that were used in the current study. The F2F-SNI provides respondents with visual stimulus, which has shown to enhance youths' abilities to focus when recalling and dispensing a large amount of social network data (Rice, Kurzban, & Ray, 2012). As part of the F2F-SNI, participants' social network data were collected by research assistants using a name generator. Participants supplied information for up to 50 people with whom they had interacted during the previous 30 days. When youth finished nominating individuals in their networks, information for each nominee was collected, such as first name and last initial, aliases, gender, sex, race or ethnicity, each nominee's relationship type with regard to the participant (e.g., home-based peer, street-based peer, family member, staff member, serious partner), and questions about the attitudes and behaviors of network members nominated.

2.4. Measures

Variables were selected, based on prior theoretical and empirical findings, to meet the overall goal of understanding associations between homeless youths' sources of social support and the outcome of homeless youths' pro-pregnancy attitude endorsements. After controlling for sociodemographics and other life experience variables, associations were tested between youths' receipt of emotional, instrumental, and informational support, respectively, provided by youths' specific referent-group member types (e.g., home-based peers, street-based peers, family members, staff, serious partners), respectively, and youths' pro-pregnancy attitude endorsements.

2.4.1. Sociodemographics and other life experiences

Sociodemographic measures included sex (0 = male, 1 = female); race or ethnicity (0 = non-White, 1 = White); age (measured as continuous variable, in number of years); education level (0 = non-

graduate of high school, 1 = high school graduate); current school attendance (0 = no, 1 = yes); current employment (0 = not currently employed, 1 = currently employed); and time spent homeless (measured as continuous variable, in number of years). Participants were also asked whether they had engaged in a series of other life experiences, including: transience or “traveler” status (“Have you ever been a ‘traveler’? A traveler is someone who moves by themselves or with friends from city to city after a short period of time”; 0 = no, 1 = yes); alcohol or drug use prior to sex (“Did you drink alcohol or use drugs before you had sex the last time?”; 0 = no, 1 = yes); sexual abuse history (0 = no, 1 = yes); foster care history (0 = no, 1 = yes); and prior pregnancy (ies) or involvement (“Have you ever been pregnant or gotten someone else pregnant?” (0 = no, 1 = yes).

2.4.2. Sources of social support

To evaluate sources of emotional support, after youth finished nominating their network members in the F2F-SNI, they were asked, “Who can you count on when you need to talk, or is someone you can confide in?” Similarly, to assess sources of instrumental support, youth were asked, “Who could you borrow \$100 from if you needed it?” Finally, to examine sources of informational support, youth were asked, “Who do you talk to about where to get social services (help with housing, food, clothes, case-work, etc.)?” Each type of social support was examined specific to referent-group type (e.g., family_emotional; family_instrumental; family_informational, and so forth). Each variable was dichotomized to reflect either 0 = no support received or 1 = receipt of support from one or more network member(s). As youth commonly reported receipt of no support across many of these categories, the variables were dichotomized, based on median scores, to reflect none versus any support. Each of these referent-group social support predictor variables were placed into a model to examine respective associations with youths’ pregnancy attitude endorsements.

2.4.3. Outcome variable: Pro-pregnancy attitudes

Youths’ pregnancy attitudes were measured using three statements, which were combined to form a single pro-pregnancy attitudes scale variable (Cronbach’s alpha = 0.71). These statements were: (1) “Getting pregnant, or getting someone pregnant, at this time in your life is one of the worst things that could happen to you”; (2) “It wouldn’t be all that bad if you got, or if you got someone, pregnant at this time in your life”; and (3) “I would like to get pregnant, or get someone pregnant, within the next year.” Likert-scale response options for each statement were: 1 = Strongly Agree; 2 = Agree; 3 = Neither Agree nor Disagree; 4 = Disagree; and 5 = Strongly Disagree. The second and third items were reverse-coded such that all questions conveyed that 1 = most anti-pregnant attitudes and 5 = most pro-pregnant attitudes. Based on prior literature noting that there are no differences in either sociodemographic characteristics or pregnancy outcomes (within the following year) among young people who endorse pregnancy-ambivalent attitudes compared to those who hold overtly pro-pregnancy attitudes (Jaccard, Dodge, & Dittus, 2003; Rosengard, Phipps, Adler, & Ellen, 2004), and to fit the requirements of logistic regression, participants’ responses were subsequently dichotomized. Recoded responses of “1” and “2” were combined to represent anti-pregnancy attitudes (“0”), whereas recoded responses of “3”, “4”, and “5” were combined to denote pro-pregnancy attitudes (“1”).

2.5. Data analyses

Data analyses were conducted using SAS Version 9.4 and SPSS Version 23.0. To preserve degrees of freedom and ensure statistical power, an accepted strategy (Hosmer & Lemeshow, 2004) was employed to minimize the number of variables used without weakening the comprehensive nature of the conceptual model itself. In this statistical approach, analyses predicting associations with the dependent variable progressed in two stages. First, bivariate logistic regressions

were conducted to determine statistically significant (unadjusted) associations between each independent variable, respectively, and the outcome variable. Each bivariate association was examined via a pairwise approach, which is essentially the same as assessing a correlation matrix. Any independent variable that was significantly associated with the outcome variable at a threshold of $p < .05$ was retained in a subsequent multivariate logistic regression model to determine any statistically significant (adjusted) associations. One exception was the variable for sex, which was retained in the multivariate model. Given the physiology-specific nature of pregnancy, this variable was deemed important to retain as a control variable regardless of indications of significance in bivariate tests. Variance Inflation Factor (VIF) was also assessed to detect any potential concerns of multicollinearity among the independent variables. After controlling for sociodemographics and other life experiences variables, the pro-pregnancy attitudes variable was regressed on the variables indicating different types of social support (i.e., emotional, instrumental, and informational, respectively), specific to each referent-group member type (i.e., home-based peers, street-based peers, family, staff, serious partners).

3. Results

3.1. Descriptive results

Table 2 presents descriptive results pertaining to youths’ sources and types of social support. Youth reported varying levels of receipt of emotional, instrumental, and informational support from home-based peers, street-based peers, family members, staff members, and serious partners. When examining social support received, and from specific referent-groups, many YEH reported receiving no social support at all from certain sources. For example, only 23.3% ($n = 234$) of youth said they received emotional support from a staff member. Just 16.7% ($n = 167$) of youth said they received informational support from a family member. The area in which youth seemed to be most broadly supported was in receiving emotional support from home-based peers;

Table 2

Descriptive Statistics of Social Support Provided to Youth, by Specific Referent-Group (N = 1003).

Specific Referent-Group Members Providing Social Support (by Social Support Type)	Youth Has One or More Referent-Group Member Providing Social Support	(%)
Home-based Peers		
Emotional Support	696	(69.4)
Instrumental Support	555	(55.3)
Informational Support	265	(26.4)
Street-based Peers		
Emotional Support	505	(50.3)
Instrumental Support	265	(26.4)
Informational Support	324	(32.3)
Family Members		
Emotional Support	572	(57.0)
Instrumental Support	449	(44.8)
Informational Support	167	(16.7)
Staff Members		
Emotional Support	234	(23.3)
Instrumental Support	57	(5.7)
Informational Support	276	(27.5)
Serious Partners		
Has a Serious Partner who Provides Emotional Support		
Yes	281	(28.0)
No	722	(72.0)
Has a Serious Partner who Provides Instrumental Support		
Yes	238	(23.7)
No	765	(76.3)
Has a Serious Partner who Provides Informational Support		
Yes	337	(33.6)
No	666	(66.4)

Table 3
Associations between Social Support Provided, by Specific Referent-Group, and Homeless Youths' Pro-Pregnancy Attitude Endorsements (N = 1003).

Characteristics	Bivariate Statistics		Multivariate Statistics	
	Unadj. OR	95% CI	Adj. OR	95% CI
Sex (male)	1.12	0.84–1.48	1.00	0.74–1.34
Race (non-White)	0.79	0.61–1.03		
Age	1.04	0.98–1.11		
Education Level (non-high school graduate)	0.83	0.64–1.09		
Current School Attendance (no)	1.11	0.76–1.60		
Current Employment (no)	1.00	0.68–1.47		
Time Homeless	1.07**	1.03–1.11	1.05*	1.01–1.10
Traveler Status (no)	1.08	0.83–1.40		
Alcohol or Drug Use Prior to Sex (no)	0.77	0.54–1.00		
Sexual Abuse History (no)	0.73	0.48–1.12		
Foster Care History (no)	1.30	0.99–1.70		
Prior Pregnancy or Pregnancy Involvement (no)	1.74***	1.35–2.26	1.61***	1.23–2.10
Emotional Support: Home-based Peers (none)	0.76	0.51–1.13		
Instrumental Support: Home-based Peers (none)	0.85	0.60–1.20		
Informational Support: Home-based Peers (none)	0.64**	0.48–0.85	0.76	0.38–1.51
Emotional Support: Street-based Peers (none)	0.74	0.53–1.02		
Instrumental Support: Street-based Peers (none)	0.93	0.70–1.24		
Informational Support: Street-based Peers (none)	0.60**	0.45–0.80	0.74	0.47–1.17
Emotional Support: Family Members (none)	0.76	0.54–1.07		
Instrumental Support: Family Members (none)	0.91	0.66–1.24		
Informational Support: Family Members (none)	0.66**	0.50–0.87	0.99	0.47–2.09
Emotional Support: Staff Members (none)	0.78	0.60–1.06		
Instrumental Support: Staff Members (none)	0.69**	0.53–0.90	1.07	0.63–1.81
Informational Support: Staff Members (none)	0.84	0.63–1.12		
Emotional Support: Serious Partners (none)	1.17	0.90–1.53		
Instrumental Support: Serious Partners (none)	1.46*	1.09–1.95	1.37*	1.01–1.86
Informational Support: Serious Partners (none)	1.14	0.86–1.50		
Pseudo R-Square			0.09	
2 Log Likelihood			310.42	

Note. Only significant variables (in bivariate analyses) at $p < .05$ were included in the final adjusted analyses. * $p < .05$. ** $p < .01$. *** $p < .001$.

over two-thirds ($n = 696$, 69.4%) of youth noted receipt of emotional support from at least one home-based peer.

3.2. Bivariate and multivariate results

Logistic regression modeling examined whether various forms of social support, provided to youth by specific referent-groups, were associated with youths' endorsements of pro-pregnancy attitudes. Referring to Table 3, bivariate results revealed that longer homelessness duration was significantly associated with youths' endorsement of pro-pregnancy attitudes ($OR = 1.07$, $p < .01$). Youth who had been pregnant or involved in a pregnancy one or more times were also significantly more likely to endorse pro-pregnancy attitudes compared to youth who had never been pregnant or involved in a pregnancy ($OR = 1.74$, $p < .001$). Youth who reported receipt of informational social support from home-based peers ($OR = 0.64$, $p < .01$), street-based peers ($OR = 0.60$, $p < .01$), and family members ($OR = 0.66$, $p < .01$) were significantly less likely to endorse pro-pregnancy attitudes compared to their peers who did not receive such forms of support. Also, youth who indicated that they received instrumental social support from staff members were significantly less likely to endorse pro-pregnancy attitudes than their peers who did not receive this support from service providers and staff ($OR = 0.69$, $p < .01$). However, youth who reported that they received instrumental support from a serious partner were significantly more likely to endorse pro-pregnancy attitudes compared to their peers who did not receive this form of support from a serious partner ($OR = 1.46$, $p < .05$).

In the multivariate model, longer homelessness duration was again significantly associated with youths' endorsements of pro-pregnancy attitudes ($OR = 1.05$, $p < .05$). Youth who had been pregnant or involved in a pregnancy one or more times in the past were 1.61 times more likely to endorse pro-pregnancy attitudes compared to youth who had never been pregnant or involved in a pregnancy ($OR = 1.61$,

$p < .001$). Youth who received instrumental support from a serious partner were 1.37 times more likely to endorse pro-pregnancy attitudes compared to their peers who did not receive this form of support from a serious partner ($OR = 1.37$, $p < .05$).

4. Discussion

4.1. Receipt of social support among YEH

This study represents the first egocentric social network analysis to examine YEHs' pregnancy attitudes as they relate to the type of social support received (emotional, instrumental, and informational) by youths' social network members (home-based peers, street-based peers, family members, staff members, and serious partners). At least one home-based peer provided emotional support to 69.4% of youth, which aligns with results reported by Johnson et al. (2005) in that nearly 80% of the youth identified a relationship in their social network that was formed prior to experiencing homelessness. Furthermore, 67.4% of Wenzel et al. (2012) sample reported receipt of tangible (i.e., instrumental) or emotional support from relatives, demonstrating similar connections among youth to their home-based or familial relationships. However, youths' receipt of instrumental and informational support from family was considerably lower than Wenzel et al. (2012) findings (44.8% and 16.7%, respectively). Some of such differences may be attributed to how these forms of support were combined into a composite variable in the Wenzel et al. (2012) study, in comparison to how these variables were more narrowly operationalized in the current study.

4.2. Pregnancy attitudes among YEH

A noteworthy proportion of this sample (40.4%) endorsed pro-pregnancy attitudes. Tucker et al. (2012) similarly reported that 35.7% of homeless youth would be "a little pleased" or "very pleased" if they

discovered that they or their partner was pregnant. Contrary to previous research findings that identifying as male is associated with pro-pregnancy attitudes (Tucker et al., 2012), no such associations were found in the current study. Future research would benefit from efforts that further explore these seemingly inconsistent and unclear relationships regarding pregnancy among YEH.

4.3. Exploring the relationship between social support and youths' pregnancy attitudes

Bivariate results highlighted the potential of informational support from family members, home-based peers, and street-based peers in significantly reducing the likelihood of pro-pregnancy attitude endorsement. While these findings note the important influence that family members may have on youths' pregnancy attitudes, they do not directly coincide with previous literature that reported a significant association between family contact and positive pregnancy attitudes (Tucker et al., 2012). Although research in this area is sparse and inconsistent, it is likely that the influence of family members on YEHs' pregnancy attitudes and decision-making is largely dependent on the quality of the relationship. YEH who endorse pro-pregnancy attitudes may believe that a pregnancy would strengthen their connection to family members (Alschech & Begun, in press; Begun et al., 2019c; Tucker et al., 2012). Conversely, it is plausible that youth with strong ties to family are less likely to see pregnancy as a necessary means of obtaining support. Further research is again needed to determine family members' specific roles played in youth's pregnancy attitude formation.

Moreover, the importance of peers, both home-based (i.e. bridging social capital) and street-based (i.e. bonding social capital), is evident with regard to informational support. Research has demonstrated the positive influence of pro-social, home-based peers in reducing the likelihood of positive pregnancy attitudes (Tucker et al., 2012) and lower engagement in risk-taking behaviors such as unprotected sex (Rice et al., 2007, 2010), having multiple sex partners (Rice et al., 2010), and drug use (Rice et al., 2007), all of which are reasonably linked to pregnancy behaviors. Likewise, Tucker et al. (2012) found that with the more school-attending peers in a homeless youth's network, the less likely they were to hold positive pregnancy attitudes. Continued contact with pro-social peers, such as those regularly attending school, may motivate homeless youth in achieving their education-related goals (Tucker et al., 2012). However, the positive influence of street-based peers with regard to mitigating pro-pregnancy attitudes has not been substantiated in extant literature, making this an unexpected finding. This aspect, in particular, warrants additional research, as these findings may signify an opportunity to differently conceptualize theoretical tenets of bonding versus bridging forms of social capital among this population (Putnam, 2000; Stablein, 2011), and more specifically with regard to topics of pregnancy and parenting. This observation may also suggest there is potential utility in further developing and testing peer-led reproductive and sexual health interventions and pregnancy prevention efforts among YEH and their street-based networks.

Instrumentally supportive relationships with staff members or service providers were also significantly associated with a lower likelihood of pro-pregnancy attitudes among YEH. Living in a shelter environment has been shown to predict having more friends and reduced engagement in detrimental behaviors among YEH (Rice et al., 2008). In another study, the presence of a natural mentor, defined as "someone they could go to for support and guidance, to make an important decision, or who inspires them to do their best," significantly predicted a lower percentage of unprotected sex among homeless female youth (Zimmerman, Bingenheimer, & Notaro, 2002 as cited in Tevendale, Lightfoot, & Slocum, 2009, p. 158). It could be that some of these "natural mentors" are service providers working in the shelters within which youth reside. Combined, perhaps the receipt of instrumental support from staff members plays a role in reducing homeless youths'

perceived need to become pregnant in order to receive needed resources, and as a result, youth are less likely to endorse pro-pregnancy attitudes. Of note, such findings were not significant at the multivariate level and therefore, were not included in the final (adjusted) model.

In the final multivariate model, longer homelessness duration, prior pregnancy involvement and instrumental support from a serious partner were significantly associated with an increased likelihood of pro-pregnancy attitude endorsement. Past studies have demonstrated the positive relationship between homelessness duration and risk of pregnancy involvement (Haley et al., 2004; Thompson et al., 2008; Tucker et al., 2012). Haley et al. (2004) found in their sample of young women experiencing homelessness, compared to never pregnant adolescents, that those with a history of pregnancy were first homeless at an earlier age (13.9 years compared to 14.7 years) and that the average number of years since their first homelessness episode was significantly higher (4.0 compared to 3.0 years). Thompson et al. (2008) also reported an increased likelihood of pregnancy among female adolescents who were away from home for longer periods of time. YEH may identify pregnancy as a means of access to services, such as healthcare or housing, that they may not have had for several years (Begun, 2015; Begun et al., 2019a; Smid et al., 2010). As homelessness duration increases, so too does the need for financial, social, medical, and emotional supports. Moreover, research has often concluded that some YEH see pregnancy and parenting as a catalyst for "getting off the streets" and engaging in personal transformation (Begun et al., 2019c; Haley et al., 2004, p. 318; Hathazi et al., 2009). The longer one experiences homelessness, the more compelled they may be to better their lives through stable housing or employment, reduced substance use, or education (Winetrobe et al., 2013).

Prior pregnancy involvement was the variable most highly correlated at the bivariate level with pro-pregnancy attitudes. However, extant literature depicts an inconsistent picture among this population. While Halcón and Lifson (2004) found that a history of pregnancy was not associated with unprotected sex at last intercourse, Haley et al. (2004) indicated that female homeless youth with past pregnancy experience were significantly less likely to use condoms with their regular sexual partners. Additional research is needed to examine the relationship between prior pregnancy and current pregnancy attitudes among YEH, as such sentiments are perhaps rooted in youths' experiences and perceptions of parenthood (Alschech & Begun, in press; Begun et al., 2019c; Begun, Frey, Combs, & Torrie, 2019b).

Finally, a serious partner's instrumental support was significantly related to pro-pregnancy attitudes at the multivariate level. While research has not investigated such relationships, indirect inferences can be made. Tucker et al. (2012) reported a significant positive association between relationship commitment and pro-pregnancy attitudes. Other studies have shown that homeless women in secure romantic relationships are less likely to use effective contraceptive methods, with some respondents reporting a belief that having a child would improve their relationship with a serious partner (Begun et al., 2019a; Gelberg et al., 2008; Tucker et al., 2012). Direct or implicit pressure from partners may exist and may even supercede youths' own pregnancy attitudes (Begun et al., 2018; Ensign, 2001; Haley et al., 2004). As described by a sample of YEH, abortion was something that many young women would not consider due to their male partners' denouncing views (Begun et al., 2018). For some of these young women, fear of violence by their partner or their relationship ending were instrumental factors in their decisions (Begun et al., 2018; Smid et al., 2010). Young homeless women may feel dependent on their male partners for shelter and protection, which could affect their perceived power to advocate for their own wishes (Tevendale et al., 2009). Relationship tension is often noted among couples navigating pregnancy decision-making, and YEH report that their partners' opinions are most influential in their decision-making (Smid et al., 2010).

4.4. Limitations

The study's findings should be interpreted in light of several limitations. First, the cross-sectional design does not allow for causal inferences to be made. Longitudinal research in this area could allow for a more comprehensive understanding of homeless youths' sexual and reproductive trajectories over time. Longitudinal work could also contribute to the identification of causal pathways by which support from youths' social networks promotes the development of certain attitudes regarding pregnancy and reproduction. In addition, the dichotomous nature of logistic regression limits the nuance and complexity of each participant's identity, including aspects of youths' gender identities, sexualities, foster care circumstances, and severity and types of housing instability over time. Furthermore, many variables were based on self-reported data. As a result, there exists a risk of social desirability bias and some answers may be under- or over-reported. Various attempts to mitigate this possibility were made, including the use of computer-assisted self-interview methods (i.e., the ACASI) as well as reminding participants that their responses were de-identified and confidential. However, it is not possible to guarantee that responses are entirely free of bias. Also noteworthy, the sample consisted of only service-seeking youth, which hinders the ability to generalize the findings to youth disconnected or disengaged from services. Relatedly, this study sampled participants from Los Angeles, California, limiting the generalizability of results to other geographic regions that differ in characteristics such as service access, urbanicity, social policy, and infrastructure. Future research in this domain should consider involving homeless youth without ties to services and in different settings and contexts.

4.5. Implications

The results of this research yield several practice and research implications. First, it is clear that network members play a key role in YEHs' pregnancy attitudes, reinforcing the notion that pregnancy beliefs are not constructed in isolation. However, the specific types of support from particular referent-group members are poignant to consider. These results challenge the typical social capital dichotomy of bonding versus bridging capital sources, particularly as there may be promise in reconceptualizing street-based peers as an additional and positive intervention construct with regard to providing informational support about pregnancy prevention strategies and safer reproductive and sexual health practices. As noted by Rice et al. (2012), many YEH have a diversity of members in their peer networks that are instrumental in supporting favorable individual outcomes among youth, such as reducing engagement in risk-taking behaviors. Given these results, prevention and intervention efforts should not only engage YEH, but also their surrounding social networks in promoting healthy behaviors, including medically accurate health information acquisition. Intervention models could leverage the positive influence of peer networks, both home-based and street-based, to disseminate such prevention and education resources. Research has suggested that addressing social norms, attitudes, and behaviors at network-based levels can shift individual-level beliefs regarding contraception and pregnancy, encouraging the exchange of informational support from peers (Tyler, 2008). Moreover, service providers might consider mobilizing contact with family members that are identified as playing positive roles in the youths' lives and thus, represent a valuable protective factor (Milburn et al., 2005). To meet the social support needs of youth without established ties to peers or family, natural mentorship programs could be explored to further engage service providers in such roles (Crawford et al., 2011; Whitbeck, 2009). Matching YEH with service providers that understand the needs and daily lives of this population, and further, perhaps other adult mentors who have navigated similar circumstances in their own lives, such as homelessness, pregnancy, and parenting, could also perhaps facilitate vital sources of support and guidance (Crawford et al., 2011).

Another finding to emerge from this research is the influence of youths' receipt of instrumental support from a serious partner. For many YEH, serious partners are particularly influential in their reproductive lives. Such impacts are strengthened when the partner acts as a provider of important, tangible assistance, such as money, shelter, and basic necessities (Tucker et al., 2012). This points to the need for prevention and education efforts to engage not only young women who may be capable of becoming pregnant, but also their partners. As noted by Smid et al. (2010), "providers should inquire about the youth's relationship with her partner, explore issues of safety, provide support for decision-making and, when appropriate, include the male partner in discussions and medical and social services appointments" (p. 152). Although many pregnancy prevention efforts target individual or broader group-based learning, a more concerted couples-based or "dyadic" initiative may show greatest promise for effectiveness (Slesnick, Dashora, Letcher, Erdem, & Serovich, 2009; Tucker et al., 2012). However, given research that describes the pervasive risk of conflict and violence between intimate partner dyads during this vulnerable time of pregnancy and family planning decision-making, it is of utmost importance that service workers inquire about their clients' relationships and include them in such activities only when it is safe and appropriate to do so (Begun et al., 2018; Smid et al., 2010). Again, such intervention modalities require more research to establish their feasibility and effectiveness.

In summary, research has identified pregnancy as a vulnerable yet potentially transformative time for YEH (Haley et al., 2004; Rew & Horner, 2003; Smid et al., 2010; Winetrobe et al., 2013). Indeed, pregnancy and parenting may represent catalysts and motivating forces for drastic life changes such as securing stable employment and starting treatment for mental health or substance use issues. Others see pregnancy as a conduit to needed resources, as a form of redemption, or a way to overcome their traumatic pasts (Smid et al., 2010, all of which are conditions shaped by youths' access or lack of access to vital social supports. Therefore, innovative approaches to service delivery, intervention development, and prevention efforts are needed that draw from the strengths and resiliencies as well as the complexities and voids that often concurrently exist within youths' social networks. In bolstering youths' access to needed information, services, and tangible social supports, youths' abilities could be facilitated so as to ensure their rights and knowledge in making self-determined health decisions regarding whether or when to become pregnant, and if or when to become parents.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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Appendix A. Supplementary material

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.childyouth.2020.104959>.

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