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Social Support Networks among Delinquent Youth: An 8-Year Follow-up Study

Naomi A. Zwecker, Ph.D.^a, Anna J. Harrison, Ph.D.^{c,d}, Leah J. Welty, Ph.D.^{b,e}, Linda A. Teplin, Ph.D.^b, and Karen M. Abram, Ph.D.^{b,*}

^aOCD & Anxiety Program of Southern California, 2656 29th Street, Suite 208 Santa Monica, CA 90405

^bDepartment of Psychiatry and Behavioral Sciences, Northwestern University Feinberg School of Medicine, 710 N Lake Shore Drive, Suite 900, Chicago IL, 60611

^cZuckerberg San Francisco General Hospital and Trauma Center, Division of Infant, Child, and Adolescent Psychiatry, 1001 Potrero Avenue, Building 5, Suite 7G15, San Francisco, CA 94110

^dUniversity of California San Francisco, Department of Psychiatry, Weill Institute for Neurosciences

^eDepartment of Preventive Medicine, Northwestern University Feinberg School of Medicine

Abstract

Supportive social networks are key to the successful transition to young adulthood. Yet, we know little about networks of delinquent youth, a population at risk for disrupted social connections. This study describes the structure and function of social support networks among delinquent youth eight years after detention; median age 24 years. Nearly one-fifth of participants had no one that they could count on, and one-third had only one person in their support network. Participants tended to have very dense networks composed almost entirely of family. Findings underscore the importance of expanding social supports for delinquent youth as they age.

Keywords

Social Support; Delinquent Youth; Emerging Adulthood; Young Adulthood; Network Characteristics

Introduction

Every year in the United States, more than 900,000 juveniles are arrested; approximately 250,000 cases result in incarceration (Puzzanchera, 2013). Most of these youth return to their communities. As they age into young adulthood, juvenile delinquents are prone to poor outcomes, such as continued criminal activity, substance abuse and unemployment (Abram et al., 2017; Lambie & Randell, 2013; Snyder & Sickmund, 2006; Teplin, Welty, Abram,

*Corresponding Author: Karen Abram, Ph.D., Health Disparities & Public Policy Program, Department of Psychiatry and Behavioral Sciences, Northwestern University Feinberg School of Medicine, 710 N. Lake Shore Drive, Suite 900, Chicago, IL 60611, 312-503-3505, k-abram@northwestern.edu.

Dulcan, & Washburn, 2012). To improve the outcomes of delinquent youth, it is important to understand the characteristics that may promote desistance from crime and attainment of adult social roles (Massoglia & Uggen, 2010).

The nature and quality of relationships with others is one such characteristic. Social networks can influence behavior positively or negatively (Ennett, Bailey, & Federman, 1999). For example, relationships with other delinquent youth may exacerbate criminal behavior and contribute to poor outcomes (Dodge, Dishion, & Lansford, 2007). Alternatively, contact with supportive family members, mentors, and friends can be protective (Molnar, Cerda, Roberts, & Buka, 2008). Social support networks play a key role in the transition from adolescence to young adulthood (Anthony et al., 2010; Mears & Travis, 2004; Steinberg, Chung, & Little, 2004). However, delinquent youth are at risk for disrupted social connections. They often cycle in and out of detention centers, jails, and prisons as they age. Incarceration interrupts familial and friendship ties (Rose & Clear, 2003). Persistent criminal lifestyles may alienate loved ones (Martinez & Abrams, 2013). Finally, limited education and criminal records impair their ability to find work, often a source of social support (Anthony et al., 2010).

Several studies describe the social support networks of individuals involved in the criminal justice system (G. D. Bond, Thompson, & Malloy, 2005; Canada, 2013; Clarke-McLean, 1996; Owens & McCrady, 2014; Papachristos, Meares, & Fagan, 2012; Pettus-Davis, 2014; Singer, Bussey, Song, & Lunghofer, 1995; Skeem, Eno Louden, Manchak, Vidal, & Haddad, 2009). Findings suggest that networks are small and homogenous; however our knowledge is limited. Studies had small samples (n=42 to n=256), limiting the ability to examine sociodemographic differences in social support. One study assessed teens (Clarke-McLean, 1996) and the others assessed adults across a wide age range (G. D. Bond et al., 2005; Canada, 2013; Papachristos et al., 2012; Pettus-Davis, 2014; Pettus-Davis, Scheyett, & Lewis, 2014; Singer et al., 1995; Skeem et al., 2009). Most studies examined networks of currently incarcerated inmates (G. D. Bond et al., 2005; Clarke-McLean, 1996; Owens & McCrady, 2014; Pettus-Davis, 2014; Singer et al., 1995). Moreover, some studies examined only a single aspect of a social network, such as its stability (G. D. Bond et al., 2005; Clarke-McLean, 1996). This provides limited information because networks may also differ in size, density, and positive or negative influence. None of the studies focused on youth as they enter young adulthood. This period of young adulthood is important to examine because it is characterized by exploration, unpredictability, and transitions in identity and stability (J.J. Arnett, 2000).

Using data from [BLINDED FOR REVIEW] Project, a large-scale longitudinal study examining the health needs and outcomes of detained youth, this study examines the social support networks of youth eight years after detention, as they enter young adulthood. The study addresses two questions: 1) What is the structure (i.e., size, density) of the social support networks of delinquent youth? 2) What is the function (i.e., prosocial and antisocial influence) of their social support networks? Findings highlight the need for specific interventions targeted to at-risk youth and the members of their social support network.

Methods

Sample and Procedures

We recruited a stratified random sample of 1829 youth at intake to the Cook County Juvenile Temporary Detention Center (CCJTDC) in Chicago, Illinois, between November 20, 1995, and June 14, 1998, who were awaiting the adjudication or disposition of their case. The CCJTDC is used for pretrial detention and for offenders sentenced for fewer than 30 days. To ensure adequate representation of key subgroups, we stratified our sample by sex, race/ethnicity (African American, non-Hispanic white, Hispanic, other), age (10-13 years or 14 years), and legal status (processed in juvenile or adult court). The final sampling fractions ranged from 0.018 to 0.689.

All detainees who were awaiting the adjudication or disposition of their case were eligible to participate in the study. Among these, 2275 detainees were randomly selected; 4.2% (34 youth and 62 parents or guardians) refused to participate. There were no significant differences in refusal rates by sex, race/ethnicity, or age. Twenty-seven youth left the detention center before an interview could be scheduled; 312 left CCJTDC while we attempted to locate their caretakers for consent. Eleven others were excluded from the sample because they were unable to complete the interview. The final sample size was 1829: 1172 males, 657 females; 1005 African Americans, 296 non-Hispanic whites, 524 Hispanics, 4 “other” race/ethnicity; age range, 10 to 18 years (mean, 14.9 years; median, 15 years). Face-to-face structured interviews were conducted at the detention center in a private area, most within 2 days of intake.

Data for analyses are from follow-up interviews conducted eight years after detention. This was either the 4th or 6th follow-up interview for participants (a random subsample of participants received additional follow-up interviews). We began measuring social support networks at the eight-year interview because participants were entering young adulthood (median age, 24 years), which is a critical time for engaging in risky behavior (J.J. Arnett, 1996; Jeffrey Jensen Arnett, 1998; J.J. Arnett, 2000; Bachman et al., 2002; Binson, Dolcini, Pollack, & Catania, 1993; Catania et al., 1992; Tapert, Aarons, Sedlar, & Brown, 2001; Thornberry, Wei, Stouthamer-Loeber, & Van Dyke, 2000).

Follow-up structured clinical interviews took place irrespective of where participants were living, including correctional facilities. Female participants were interviewed by female interviewers. Interviewers had graduate degrees in psychology or an associated field and had experience interviewing at-risk youth; one-third were fluent in Spanish. All interviewers were trained for at least 1 month. We tried to interview in person all participants who were living in the community (65.7%). Those who lived more than two hours away by car were interviewed by telephone (8.5%). Phone interviews are an acceptable substitute to contain costs and maintain subject contact, and have been shown to produce reliable data, particularly if respondents have been interviewed before (Shapiro et al., 1985). Remaining participants were interviewed in person at correction facilities (25.7%). Participants were paid \$75 for the 8-year follow-up interview, which lasted approximately 3- to 4-hours.

Procedures to Obtain Assent and Consent at Baseline and Follow-Up

For each interview, participants signed either an assent form (if they were <18 years old) or a consent form (if they were ≥18 years old). The [BLINDED FOR REVIEW] Institutional Review Board and the Centers for Disease Control and Prevention Institutional Review Board approved all study procedures and waived parental consent for persons younger than 18 years, consistent with federal regulations regarding research with minimal risk (Sherbourne & Stewart, 1991). We nevertheless attempted to contact parents of minors to obtain their consent and to provide them with information on the study, and used an independent participant advocate to represent the minors' interests.

Sample Characteristics

The final sample used for this study (N=1258) consisted of 771 males (61.3%) and 487 females (38.7%), 740 African-Americans (58.8%), 195 non-Hispanic Whites (15.5%), 321 Hispanics (25.5%), and 2 participants who identified as “other” race/ethnicity (0.2%). The mean age of participants was 23.5 years (standard deviation = 1.5); median age was 24.0 years.

Missing Data

All participants who received their eight-year follow-up between 7.7 and 10 years of the baseline interview were included in our analyses. We chose 10 years for the cutoff because, in this high-risk and highly mobile sample, participants can be difficult to track; using a stricter cutoff would restrict the generalizability of the sample. Of the 1829 youth interviewed at baseline, 80 (4.4%) participants died prior to receiving an eight-year follow-up interview, 47 (2.6%) participants withdrew from the study; 262 (14.3%) participants were lost to follow-up; and 182 (9.9%) participants received the follow-up interview more than 10 years after baseline. Our final sample was 1258 (68.8% of the original sample and 71.9% of those who were still living). The average time between baseline and the follow-up interview was 8.6 years (standard deviation 0.55). There were no demographic differences in retention rates except that Hispanic participants were more likely to be lost to follow-up than either African Americans or non-Hispanic whites ($\chi^2=25.05$, $p<.001$). Potential bias from demographic differences in attrition was adjusted by weighting the statistical analyses by sampling strata (see “Statistical Analysis” below).

Measures and Variable Definitions

Using a *personal network approach* to assess social support networks (Wasserman & Faust, 1994), we asked participants to name the people with whom they interact and provide information about them. Questions were adapted from the Indianapolis Network Mental Health Study, part of the Indiana Consortium for Mental Health Services and Research (Pescosolido, 1989). Consistent with prior studies (Burt, 1984; Cornwell & Laumann, 2006; Marsden, 1987), members of a social support network were defined as people with whom participants “discuss important matters with or can really count on.”

Researchers have focused on two dimensions of social support networks. Structural characteristics refer to the *form* of naturally occurring groups. Functional characteristics

refer to the *influence* group members have on each other's behaviors (Due, Holstein, Lund, Modvig, & Avlund, 1999; Friedman et al., 1997; Rothenberg et al., 1998).

Network structure.—We assessed four characteristics of network structure:

Network size is a count of the number of network members.

Network density is the proportion of network ties (two members of a network know each other) that are present compared to all possible network ties (Fischer & Shavit, 1995). Scores for density range from 0 to 1. A network density of 0.33 means that 33% of all possible ties are present; in a network of 4 people—which has 6 possible ties—2 pairs know each other. Density can be calculated only for networks containing at least two people.

Proportion female is the ratio of the number of females in the network compared to the total number of network members. It ranges from 0 to 1: 0 indicates that there are no females in the network, whereas 1 indicates that everyone in the network is female.

Proportion family is the ratio of family members to the total number of network members. Proportion family is defined only for networks with 1 or more members and includes all biological and non-biological relatives (e.g., step, adoptive etc.) as well as one's spouse/partner.

Network function.—We assessed three characteristics of network function:

Negative support refers to the frequency with which the participant felt “hassled, controlled or intruded upon” by the network member.

Disapproves of substance use is an indicator of a prosocial influence. It refers to a network member who the participant perceived would disapprove of the participant using alcohol, marijuana, or other drugs.

Uses substances is an indicator of an antisocial influence. It refers to a network member who frequently used alcohol or marijuana, or ever used illicit drugs other than marijuana.

Statistical Analysis

To generate descriptive and inferential statistics that reflect CCJTDC's population, each participant was assigned a sampling weight augmented with a nonresponse adjustment to account for missing data. Taylor series linearization was used to estimate standard errors (Cochran, 1977; Levy and Lemeshow, 1999). STATA statistical software, version 11.0, was used for all analyses.

We used Poisson regression to examine gender and racial/ethnic (African American, non-Hispanic white, Hispanic) differences in network variables. We examined racial/ethnic differences separately for males and females. The dependent variables were the network variables, which were either counts (e.g. number of people in network) or rates (e.g. percentage of network that uses alcohol or marijuana often). Models for rates included offsets to account for network size. For density, the offset was the log of the number of

possible connections among network members [$w(w-1)/2$, where w is network size]. For all other rate variables, the offset was the log of the network size. For dependent variables that exhibited evidence of over-dispersion (variance > mean), we used negative binomial regression instead of Poisson regression.

Results

We describe findings by characteristics of network structure and network function.

Structural Characteristics of Social Support Networks

Network size.—Social support networks ranged in size from 0 to 11 persons, with an average network size of 1.8 people (Table 1). There were no significant gender differences in network size. More than 17% of males and more than 12% of females reported no social support network at all (i.e. network size of zero).

Hispanics had smaller networks than non-Hispanic whites, irrespective of gender. Among males, Hispanics had networks that were 32% smaller (mean 1.4 vs. 2.1, IRR 0.68 [0.56-0.82]) and among females, networks were 38% smaller (mean 1.7 vs. 2.7, IRR 0.62 [0.49-0.80]). Among males, African American had networks that were 32% larger than Hispanics (mean 1.9 vs. 1.4, IRR 1.32 [1.11-1.58]). Network size was not significantly different between African American and Hispanic females. Among females, African Americans had smaller networks than non-Hispanic whites (mean 1.8 vs. 2.7, IRR 0.66 [0.54-0.82]). There was no significant difference between non-Hispanic whites and African Americans among males.

Density (proportion of possible network pairs who know each other).—Table 1 shows that among participants who had networks of at least two people, over three quarters had a network density greater than 0.74. The mean density was 0.8 (standard error [se]=0.03). There were no significant gender differences in network density and no significant racial/ethnic differences among males. Among females, African Americans and Hispanics had denser networks than non-Hispanic whites: density was 46% higher in African Americans and 40% higher in Hispanics (respectively, mean density 0.8 vs. 0.6, IRR 1.46 [1.19-1.79]; mean density 0.7 vs. 0.6, IRR 1.40 [1.10 – 1.78]).

Proportion female.—Networks were overwhelmingly female. The mean percentage of females in participants' networks (among networks with at least one person) was 0.8 (se 0.02). There were no significant gender differences. Among males, proportion female was 23% higher in African Americans and 18% higher in Hispanics than in non-Hispanic whites (respectively, mean 0.8 vs. 0.7, IRR 1.23 [1.09-1.38]; 0.8 vs. 0.7, IRR 1.18 [1.04-1.34]). The same trend was true for females: Proportion female was 34% higher in African Americans and 25% higher in Hispanics than non-Hispanic whites (respectively, mean 0.7 vs. 0.5, IRR 1.34 [1.18-1.52]; mean 0.7 vs. 0.5, IRR 1.25 [1.07-1.45]).

Proportion family—The mean proportion family for our participants' networks was 0.9 (se 0.02). Nearly 80% of males and over 60% of females had networks composed entirely of family. Males had more family members in their networks than females (Table 1: mean 0.9

vs. 0.8; IRR 1.17 [1.11-1.24]). Among males, compared with non-Hispanic whites, both African Americans' networks and Hispanics' networks were composed of more family members (respectively: mean 0.9 vs. 0.8, IRR 1.20 [1.08-1.33]; mean 0.9 vs. 0.8; IRR 1.16 [1.04-1.30]). Among females, there were no significant racial/ethnic differences.

Functional Characteristics

Negative support.—The average amount of negative support in a network was 48% (Table 2). Males experienced negative support from over 50% of network members. In contrast, females experienced negative support from less than 20% of network members. Males perceived more than twice the negative support as females (IRR 2.29 [1.88-2.79]). Two thirds of females had networks with no negative support and nearly 10% had networks with all negative support. There were no significant racial/ethnic differences in negative support among males or females.

Disapproves of substance use.

Disapproves of using alcohol and/or marijuana.: On average, 12.1% (se 2.1) of network members disapproved of using alcohol or marijuana. More than 80% of participants had networks in which no one disapproved of using alcohol or marijuana. In contrast, fewer than 10% of participants had networks in which everyone disapproved of using alcohol or marijuana. There were no significant gender or racial/ethnic differences.

Disapproves of drugs other than marijuana.: On average, nearly three quarters of network members disapproved of drugs other than marijuana (73.7%; se 3.1). Compared with females, males had more network members who disapproved of using drugs other than marijuana (75.8% vs. 48.0%, IRR 1.64 [1.39-1.93]). Nearly 45% of females had networks in which no one disapproved of drugs other than marijuana, whereas less than 20% of males had networks in which no one disapproved of drugs other than marijuana. Among males, African Americans and Hispanics had 45% more and 58% more members of their networks disapprove of using drugs other than marijuana compared to non-Hispanic whites (respectively, 75.3% vs. 61.3%, IRR 1.45 [1.10-1.91]; 83.2% vs. 61.3%, IRR 1.58 [1.21-2.07]). Among females, there were no significant racial/ethnic differences.

Uses substances.—On average, about 20% of network members frequently used alcohol and/or marijuana (Table 2). There were no significant differences between males and females. Among males, African Americans had fewer members of their network frequently use alcohol and/or marijuana than non-Hispanic whites and Hispanics (respectively 15.8% vs. 29.5%, IRR 0.53 [0.35-0.82]; 15.8% vs. 36.3%, IRR 0.53 [0.33-0.85]). Among females, African Americans had fewer members of their network frequently use alcohol and/or marijuana than non-Hispanic whites (15.9% vs. 24.4%, IRR 0.61 [0.41-0.90]). On average, 6.2% (se 1.7) of network members had *ever* used drugs other than marijuana. Table 2 shows that compared with females, males had more members of their network who had used drugs other than marijuana (6.5% vs. 2.6%, IRR 2.22 [1.09-4.50]). There were no significant racial/ethnic differences.

Discussion

Although the period of life between ages 18 to 30 often represents a time of growth in social support networks, eight years after detention, youth have small and insular social support networks. More than one out of six reported having no one on whom they can rely. Among those with social support, the mean network size was only 1.8 members.

Table 3 summarizes the size and density of the social support networks of participants in the [BLINDED FOR REVIEW] Project, the general population, and other at-risk populations. Network size in our sample (mean 1.8) is smaller than the general population and smaller or equal to that of other at-risk populations. The largest recent study examining the structure of the social support networks of the adult general population is the General Social Survey (GSS) conducted in 2004 (McPherson, Smith-Lovin, & Brashears, 2006). In the GSS, the mean network size was 2.08 and 24% reported having no network (McPherson et al., 2006). Although percentages are comparable to ours, it is important to remember that the GSS included individuals across the full range of adulthood while our sample was composed only of young adults. McPherson found that network size decreases with age: younger individuals in the general population have significantly larger networks (McPherson et al., 2006) and older individuals have smaller social support networks. If they had limited their sample to young adults, we would expect the general population sample to have much larger social support networks and a much smaller percentage of persons having no network.

The size of social support networks in our sample is less than or equal to those in other high-risk samples. Our findings are most similar to those found by Randolph and colleagues who examined the social support networks of chronically mentally ill women (ages 19-63). Randolph et al., defined social support network as individuals they would “talk to for advice or about things that are very personal, private, and related to health” and found that their mean size of social support networks was 1.98 (standard deviation of 1.38) (Randolph et al., 2007). They found that 11.2% reported having no social support network (Randolph et al., 2007), compared with 17.3% in our sample. The mean size of social support networks was higher in the three studies of drug-using adults (ranged from 6.8 to 6.9) than our study (Latkin, Forman, Knowlton, & Sherman, 2003; Latkin et al., 1995; Owens & McCrady, 2014). However, these studies defined social support networks more liberally than in our study (Latkin et al., 2003; Latkin et al., 1995; Owens & McCrady, 2014). The mean size of social support networks in our sample was also lower than in a study of adult prison inmates (3.1) (Pettus-Davis, 2014) and adults in mental health court (2.7) (Canada, 2013).

The social support networks of our participants are extremely dense (0.8) compared with other samples. That is, nearly all network members know each other. More than 75% of our participants had a network density greater than 0.74. As shown in Table 3, network density was higher in our sample than among adults (18+) in the general population (0.66) (McPherson et al., 2006). In 2004, only 42% of Americans had a network density greater than 0.74 (McPherson et al., 2006). In other words, people in the general population tend to have networks in which about half of the members know another person in the network. Density was also higher in our sample than among adults in mental health court (0.43) (Canada, 2013) and inner city drug users (0.61) (Latkin et al., 1995). McPherson (2006)

found that network density increases with age (McPherson et al., 2006); therefore, our findings are especially striking because our sample is younger than those of other studies. We would expect the differences to be even larger if the samples were more comparable. The mean proportion of family members in our participants' social support networks was also much higher than the general population (0.9 vs. 0.54) (McPherson et al., 2006).

Why are the social support networks in our sample so small and tightly connected (dense) compared with the general population? Many factors may contribute to the weak social support networks of delinquent youth. The first is history of incarceration. By eight years after detention, more than 80% of our sample had been re-incarcerated at least once. Incarceration disrupts social support systems (Draine & Wolff, 2009; Fagan, West, & Holland, 2004). Family members and friends may choose to avoid contact after their relatives are released, particularly if they had been victimized by the participant (Visher & Travis, 2003). Released offenders may be stigmatized by the community, making it difficult to establish new supports (Rose & Clear, 2003). Alternately, persons with poor social support networks may be more likely to engage in criminal behaviors that lead to incarceration than individuals with supportive social networks (Draine & Wolff, 2009; Visher & Travis, 2003).

A second reason for small, dense networks in our sample is the high degree of adverse interpersonal events in childhood and adolescence. At baseline, more than 40% of females and 11% of males reported a history of sexual abuse between the ages of 10 to 18; 35% of females and 15% of males reported a history of severe physical abuse (King et al.). Moreover, over one fifth of these youth experienced the death of a caregiver before they were age 18 years (Bassett, 2013). Intimate loss and history of maltreatment can impair one's ability to form attachments in future relationships. Children who view others as caring and available, and themselves as worthy of the care of others, will engage in behaviors that promote the building of social supports. Individuals who see others as rejecting and hostile and themselves as powerless and unworthy will not engage in behaviors that promote the growth of social supports (Bowlby, 1969). Therefore, children with multiple adverse experiences—such as delinquent youth—may have difficulty building a strong cohesive social support network (Liem & Boudewyn, 1999).

Third, substance use, disruptive behavioral disorders, and personality disorders are prevalent in justice-involved populations (Kaszynski et al., 2014; Teplin, Abram, McClelland, Dulcan, & Mericle, 2002; Teplin et al., 2012). Friends and family may withdraw from the burden caring for someone with persistent addiction, antisocial activities, or interpersonal volatility (Hawkins & Abrams, 2007). Alternatively, individuals with externalizing disorders may isolate themselves and withdraw from their social supports if they experience their supports as adding tension to their lives (Hawkins & Abrams, 2007). Often these two processes—being pushed away and withdrawing—occur simultaneously (Hawkins & Abrams, 2007).

Finally, delinquent youth have limited opportunity to adopt prosocial adult roles across key domains, such as education, employment, and forming a family. Thus they have fewer opportunities to meet new people and form supportive relationships as they transition to adulthood. Previously incarcerated individuals have poor educational attainment (Western &

Pettit, 2010) and higher rates of intellectual deficiencies compared to the general population (Lansing et al., 2014; Zamora, 2009). Fewer than 20% of young adults who have been incarcerated graduate high school (Levine & Wagner, 2005). They also are less likely to be employed because of poor work histories (Western & Pettit, 2010) and felonies or convictions. Few are in committed interpersonal relationships (Osgood, Foster, & Courtney, 2010). Additionally, many continue to engage in criminal activity, leading to greater isolation from family and social supports (Emanuel, 2010).

Nearly half of social support network members were perceived as intrusive or controlling (negative support). There may be several explanations for this finding. First, support networks were primarily composed of family members. People tend to have more negative interactions with family members than with friends, and can more easily terminate a friendship characterized by negative interactions than a familial relationship (Schuster, Kessler, & Aseltine, 1990). Second, our participants are often engaged in antisocial activities. Therefore, those around them may be critical in response. Alternatively, it is possible that families of our participants have few resources or support of their own and may have difficulty managing their own stress. Nonetheless, relationships characterized as intrusive and controlling may preserve a feeling of hopelessness and lack of agency in our participants.

Males were twice as likely to perceive negative support in their networks compared with females. We know that males exhibit more risky behaviors, engage in greater drug use, and are more antisocial than females at this stage (Abram et al., 2017; Teplin et al., 2012). Thus they may receive more disapproval from their networks. Additionally, males' networks are composed primarily of females. Compared with females, males may experience comments by females as more controlling and intrusive than they would from males (Umberson, 1992)

Limitations

Our data are subject to the reliability and validity of self-report. Participants who were tired, uncooperative, or pressed for time may have named fewer network members to shorten the interview (McPherson et al., 2006). We minimized this bias, however, by first asking participants to name all of their social support network members and then asking individual questions about each network member. The module on social support networks was also administered in the first quarter of the interview.

Missing data may have also biased the network findings. Participants who were lost at follow-up may have had fewer contacts, making them more likely to be lost; as a result, it is possible if we had this data the average network size would be even smaller.

Our operationalization of network structure and function is limited. To identify members of participants' social support networks, we asked them to identify people they can "discuss important matters with or can really count on." Participants may have substantial social interactions with people they do not feel they can count on. To measure function, we assessed network members' use of substances and disapproval of substances. Although these are vital components of prosocial and antisocial influence, there are likely other aspects of social support networks that influence participants, either positively or negatively, including

whether network members influenced participants to be involved in a crime, seek education, or be employed. We also did not assess other important dimensions of social networks—such as the frequency and quality of interactions, or barriers to forging connections—that would enhance the meaning of these results.

Implications

Empirical studies of social support interventions for at-risk youth have been limited, and such interventions are often outside the domains of mental health and correctional facilities. Yet, we know that social support networks have a significant influence on the quality of life (Corrigan, Phelan, Corrigan, & Phelan, 2004; Lincoln, 2000). Although social support can buffer individuals against stressors, expand self-esteem, reduce dependence on individuals who may not be of good influence, and improve mental and physical health (Crime and Justice Institute, 2006), inadequate social support can impede proper development (Farenga & Ness, 2005).

Although a number of treatment approaches have been shown to bolster social support in clinical populations, no program has been designed to specifically improve social support in delinquent youth (J. Bond, Kaskutas, & Weisner, 2003; Groh, Jason, & Keys, 2008; Kaskutas, Bond, & Humphreys, 2002). Mentoring is a promising strategy (Rhodes & DuBois, 2006). Mentoring programs match youth with an older, experienced guide, who helps the youth to navigate the transition to adulthood by challenging and supporting them (Philip, 2000). Mentorship interventions are designed to strengthen existing family social supports, increase positive social supports, and reduce negative supports. Mentoring programs increase social support by strengthening relationships with parents and peers and improving school and work performance (Bauldry, 2006; Keating, Tomishima, Foster, & Alessandri, 2002; Spencer & Jones-Walker, 2004). The Adolescent Diversion Program matched over 4,000 first time young offenders with university students and found these relationships promoted increased family and community support for the young offenders (Smith, Wolf, Cantillon, Thomas, & Davidson, 2004). A recent meta-analysis of mentoring programs demonstrates an overall positive effect of mentoring on a wide range of outcomes, including the social/relational domain (DuBois, Portillo, Rhodes, Silverthorn, & Valentine, 2011).

Although mentorship programs are often put in place for youth having difficulty in school, youth involved in the justice system are often truant or drop out of school. Therefore, mentorship programs should be put in place when they leave the justice system, a natural and important opportunity to help strengthen the social support networks of these young people. Returning home after release poses tremendous obstacles (Spiropoulos & Gardiner) and requires a great deal of support to successfully reintegrate into society.

Future studies should investigate how to improve measures of social support. Social support is a complex and multi-dimensional phenomenon (Cohen & Syme, 1985; Donald & Ware, 1984; Sherboourne & Stewart, 1991). Most measures fail to take into account the negative aspects of social support (Sherboourne & Stewart, 1991). They also rarely assess emotional support; tangible support such as housing or money, guidance and feedback; closeness; longevity of relationships; and the extent to which interactions are balanced (Berkman,

Glass, Brissette, & Seeman, 2000; Cohen & Syme, 1985; Latkin et al., 2003; Lincoln, 2000; Wasserman & Faust, 1994).

Conclusions

Eight years after detention, nearly one in five young adults had no one that they could count on. One-third had only one social support network and most have very tightly connected (dense) networks, suggesting limited and narrow systems of support. Many of these youth fare poorly as they age; most still struggle in many areas (Abram, Choe, Washburn, Romero, & Teplin, 2009; Emanuel, 2010). Although social support networks can improve outcomes (Corrigan et al., 2004; Lincoln, 2000; Nyamathi, Flaskerdud, & Leake, 1997), for these youth it is often a neglected area of rehabilitation or care, falling outside of the purview of most service system domains. By integrating strategies, such as mentoring programs, into the justice system and community health systems, we may be able to improve their prospects for a fulfilling and productive adulthood.

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Gender differences in the structural characteristics of social support networks of delinquent youth 8 years after baseline (detention), Chicago, IL^a

Table 1.

	Total (n=1258)			Male (n=771)			Female (n=487)			Males vs. Females	
	n	%	Mean (SE)	n	%	Mean (SE)	n	%	Mean (SE)	IRR ^{ef}	(95% CI)
Total Network Size	1254		1.8 0.09	767		1.8 0.09	487		1.9 (0.06)	0.97	(0.86- 1.09)
0	204	17.3		143	17.7		61	12.7			
1	373	28.8		226	28.7		147	30.4			
2	370	29.2		219	29.0		151	30.9			
3	169	12.3		90	12.0		79	16.1			
4	79	8.1		53	8.3		26	5.4			
5+	59	4.3		36	4.2		23	4.5			
Density ^b	646		0.8 0.03	384		0.8 0.03	262		0.7 (0.02)	1.08	(0.96- 1.22)
< 0.25	90	11.4		43	10.9		47	17.9			
0.25-0.49	49	5.8		26	5.6		23	8.5			
0.50-0.74	55	7.5		33	7.5		22	7.2			
> 0.74	452	75.2		282	75.9		170	66.4			
Proportion Female ^c	1030		0.8 0.02	610		0.8 0.02	420		0.7 (0.02)	1.04	(0.97- 1.12)
0.00-0.32	113	9.9		68	9.9		45	10.5			
0.33-0.66	345	26.8		183	26.0		162	37.8			
0.67-1.00	572	63.2		359	64.2		213	51.7			
Proportion Family ^d	1013		0.9 0.02	602		0.9 0.02	411		0.8 (0.02)	1.17	(1.11- 1.24)*
0.00	91	6.2		48	5.9		43	10.6			
0.01-0.33	9	0.3		5	0.2		4	1.0			
0.34-0.66	189	13.4		87	12.5		102	24.7			
0.67-0.99	29	3.0		21	3.0		8	1.8			
1.00	695	77.1		441	78.3		254	61.8			

* $P < 0.05$

^aData are weighted to reflect the demographic characteristics of the Cook County Juvenile Temporary Detention Center.

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^g Network density is defined among those with a network of 2 or more people as the proportion of all network ties that are present out of all possible network ties. We calculate density as $K/(N \times (N-1)/2)$, where K is the number of pairs of network members who know each other and N is the total number of network members.

^h Proportion female is defined as the ratio of the number of females over the total number of males and females in the network. Proportion female is only defined for networks with 1 or more members.

ⁱ Proportion family is defined as the ratio of the number of family members over the total number of family and non-family members in the network. Proportion family is only defined for networks with 1 or more members.

^e Log linear regression is used to compare network size by gender.

^f Log linear regression with an offset is used to compare density, family ratio, and gender ratio by gender. The offset for density is the number of possible ties. The offset for gender ratio and family ratio is network size.

Gender differences in the functional characteristics of social support networks of delinquent youth 8 years after baseline (detention), Chicago, IL ^a

Table 2.

	Total (n=1258)			Male (n=771)			Female (n=487)			Male vs. Female	
	n	%	Mean ^b (SE)	n	%	Mean ^b (SE)	n	%	Mean ^b (SE)	IRR	(95% CI)
<i>Negative support</i>											
Controlling or intrusive	998		47.9 (2.7)	588		50.2 (3.0)	410		19.7 (1.6)	2.29	(1.88-2.79)*
None	499	37.8		224	35.4		275	67.2			
Some	249	27.2		151	27.5		98	23.7			
All	250	34.9		213	37.0		37	9.1			
<i>Disapproves of substance use</i>											
Disapproves of using alcohol/marijuana	714		12.1 (2.1)	407		11.5 (2.3)	307		19.6 (2.0)	0.71	(0.45- 1.10)
None	557	82.8		334	83.6		223	72.6			
Some	82	10.2		39	9.9		43	14.3			
All	75	7.0		34	6.5		41	13.1			
Disapproves of using other drugs	714		73.7 (3.1)	407		75.8 (3.3)	307		48.0 (2.7)	1.64	(1.39-1.93)*
None	219	21.3		82	19.3		137	44.6			
Some	91	11.3		45	11.0		46	14.9			
All	404	67.5		280	69.7		124	40.5			
<i>Uses substances</i>											
Uses alcohol and/or marijuana often	714		19.5 (2.4)	408		19.7 (2.5)	306		17.3 (1.7)	0.98	(0.74- 1.31)
None	477	69.7		269	69.8		208	68.7			
Some	157	20.0		82	19.6		75	24.2			
All	80	10.3		57	10.6		23	7.1			
Uses other drugs ever	713		6.2 (1.7)	408		6.5 (1.9)	305		2.6 (0.7)	2.22	(1.09-4.50)*
None	661	89.5		374	89.1		287	94.4			
Some	39	7.2		23	7.4		16	4.9			
All	13	3.3		11	3.5		2	0.7			

* $p < 0.05$

^aData are weighted to reflect the demographic characteristics of the Cook County Juvenile Temporary Detention Center.

b_7 Mean of the percent of the network that provides negative support, disapproves of substance use, or uses substances.

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Table 3.

Size and density of social support networks across samples

Study	Sample Description	N	Age	Mean Size (SD)	Mean Density (SD)
[BLINDED FOR REVIEW]	Juvenile justice	1258	18-30	1.8 (.09)	0.8 (.03)
McPherson et al., 2006	General population	1467	18+	2.08 (2.05)	0.66 (0.33)
Pettus-Davis, 2014	Prison inmates	165	18+	3.1 (.22)	-----
Canada, 2013	Mental health court	80	19-65	2.7 (1.22)	0.43 (0.16)
Randolph et al., 2007	Chronic mentally ill women	98	19-63	1.98 (1.38)	-----
Owens & McCrady, 2014	Probationers with substance use problems	50	18+	6.8 (3.0)	-----
Latkin, Mandell, Oziemkowska, et al., 1995	Inner-city drug users	330	18+	6.92 (2.90)	0.61 (0.30)
Latkin et al., 2003	Inner-city drug users	1051	18+	6.9 (3.0)	-----