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Gang Membership Between Ages 5 and 17 Years in the United States

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ABSTRACT

Purpose: This study determined the frequency, prevalence, and turnover in gang membership between ages 5 and 17 years in the United States.

Methods: Data were from the National Longitudinal Survey of Youth 1997, which is representative of youth born between 1980 and 1984. Age-specific patterns of gang joining, participation, and leaving are estimated based on youths (N = 7,335) self-reported gang membership at the baseline and eight subsequent interviews, which were combined with population age estimates from the 2010 U.S. Census to produce national estimates of gang membership. Sampling variance-adjusted bounds were estimated based on assumptions about missing cases and survey design effects. Demographic and socioeconomic variables are used to compare differences between gang and nongang youth.

Results: Youth gang members were disproportionately male, black, Hispanic, from single-parent households, and families living below the poverty level. We estimated that there were 1,059,000 youth gang members in the United States in 2010 (bounds ranging from 675,000 to 1,535,000). The prevalence of youth gang membership was 2.0% (1.2%–2.8%), peaking at age 14 years at 5.0% (3.9%–6.0%). Annually, 401,000 (204,000–639,000) juveniles join gangs and 378,000 (199,000–599,000) exit gangs, with a turnover rate of 36%.

Conclusions: We discovered that significantly more people are involved with gangs than previous estimates would suggest. Clinicians and policy makers must recognize that youth gang members may not conform to popular perceptions of gang demographics. The patterns of youth gang membership observed in this study support prevention programs aimed at children before the teen years. This strategy is more likely to succeed than gang intervention or suppression strategies aimed at teens. © 2015 Society for Adolescent Health and Medicine. All rights reserved.

IMPLICATIONS AND CONTRIBUTION

Youth gang membership is a public health issue, but little is known about the magnitude of the problem in the United States. This study reports key estimates of the frequency and prevalence of youth gang membership and the ages when youth are most likely to join and leave gangs. This information can be used to shape clinical interactions with gangaffected youth and gangrelated policy making.

Violence is among the leading causes of death for youth in the United States [1]. Homicide victimization rates for gang members are at least 100 times greater than those of the broader U.S. population [2]. Youth gang membership is a public health issue [3,4]. Numerous studies have shown that gang membership is a high-risk life state related to a wide range of adverse health risk

unsafe sexual practices, gun carrying, illicit drug sales, arrest, nonfatal intentional injury, homicide, and educational, economic, and familial hardship [2,5–13]. These adverse consequences are greatest during active periods of youth gang membership, but continue even after leaving a gang and into adulthood [6,10,14]. Such high levels of violence and enduring health risk behaviors among youth gang members require the attention and services of public health officials and health care practitioners.

behaviors, including juvenile delinquency, substance abuse,

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Although dozens of studies have linked youth gang membership with proximal and distal health risk behaviors, little is known about the extent of youth gang membership in the United States or how levels of gang membership change during adolescence. If public health officials and health care practitioners are to respond to gangs by allocating resources and devising programming [3,4], a critical first step is to estimate accurately the magnitude and nature of the juvenile gang member population. The only national estimates of youth gang membership are derived from representative surveys of personnel in U.S. law enforcement agencies about gang activity in their respective jurisdictions. A 2010 survey produced an estimate of 756,000 gang members and indicated that about 40% were juveniles [15,16]. But there are questions about the accuracy of the national portrait of gang membership painted by estimates derived from law enforcement agencies [17-22]. Contrary to law enforcement estimates, research on gangs reports that gang membership is heavily concentrated among juveniles [20,22,23]. Even minor systematic biases by demographics (e.g., gender and race/ethnicity) or recording practices (e.g., socioeconomic status and criminal seriousness), when aggregated across law enforcement agencies, could result in a distorted representation of youth gang activity and risks missing an important driver of violence and risky behaviors among adolescents. Moreover, no surveillance system is capable of documenting youth who join and leave gangs, resulting in a national blind spot about the scope of youth gang membership.

The best way to get a clear national picture of who is joining and leaving gangs is to find out from the gang members themselves. In this report, we used individual-level survey data from a nationally representative longitudinal sample of youth and an established methodology to answer the following four questions: (1) what are the demographic and socioeconomic characteristics of youth gang members? (2) what is the frequency and prevalence of youth gang membership? (3) how many youth join and leave gangs annually? and (4) how is risk for gang membership, including joining, participation, and leaving, distributed across childhood and adolescence? The results direct clinicians and policy makers to key periods of childhood and adolescence when youth are at the greatest risk for gang membership.

Methods

The National Longitudinal Survey of Youth 1997 (NLSY97), conducted by the Bureau of Labor Statistics, is a nationally representative sample of youth born between 1980 and 1984 and living in the United States at the initial interview. From the first round of interviews in 1997, there have been 14 additional rounds of data collection (through 2011), which correspond roughly to annual assessments. The present study was based on the first nine rounds of data collection where measures of gang membership were included. The NLSY97 was generated based on a stratified, multistage cluster probability sampling design. In the first stage, a large sample (>90,000) of housing units was selected using standard area probability sampling methods. The second stage involved the selection of a target sample of 9,808 age-eligible youth identified from an initial screening for participation [24].

The target sample comprised two subsamples: (1) a "crosssectional" sample (N = 7,335) designed to achieve national representativeness without weighting and (2) a "supplemental" sample (N = 2,473) that oversamples black and Hispanic youth. This study used the cross-sectional sample, among whom 6,748 completed an interview at the initial wave [24]. Youths who participated in the initial interview were allowed to miss later waves and remain in the study, but nonparticipation at wave 1 precluded interviews at subsequent waves.

Study participants self reported membership in a gang, which is a reliable and valid method to measure gang membership [10,22,25,26]. The NLSY97 provided a definition of a gang when asking study participants about the presence of gangs in their neighborhood or school: "By gangs, we mean a group that hangs out together, wears gang colors or clothes, has set clear boundaries of its territory or turf, and protects its members and turf against other rival gangs through fighting or threats" [27]. This definition was presented before asking about the study participants' gang membership status. Computer-assisted selfinterviewing was used for gang membership questions and other sensitive topics such as illegal behavior. The present study was granted exempt status by the institutional review board at Sam Houston State University (protocol #2014-05-16722).

Measures

All measures of gang membership reported here consist of mutually exclusive binary attributes ("yes" = 1 and "no" = 0). At the baseline interview, study participants were asked (1) have you ever belonged to a gang? Youth who answered "yes" were then asked (2) how old were you when you first joined a gang? A follow-up question determined present gang membership (3) have you been a member of a gang in the past 12 months? For a "yes" response, the age of gang exit would be recorded during follow-up interviews. A "no" response would prompt the final question (4) how old were you when you last belonged to a gang? The reported age was recorded as the age of exit from the gang, and the analysis makes the assumption that these events occurred at the midpoint of the age they reported. This allowed us to document gang membership before the baseline interview, as field and survey research has reported the onset of gang membership in childhood and preadolescence [28–32].

Measures of gang membership were included in each followup interview of the NLSY97 through wave 9, where study participants were asked "have you been a member of a gang since the last interview date?" From waves 2 to 5, all study participants who had to that point denied gang membership, were asked if they had "ever" been a gang member. A "yes" response prompted questions about the age of joining and leaving a gang. In some cases (N = 132), age of gang onset and exit conflict with earlier denials of gang membership, but we take later responses at face value, recording gang membership during the self-reported age range. The age window for gang membership ranged from ages 5 to 17 years. Although there are examples in the gang literature of youths believing they were born into gangs, age 5 years was the minimum gang joining age allowed in the NLSY97. We focus on youth because gang joining in adulthood is less common, and at wave 9, respondents ranged in age from 20 to 25 years [23].

Analytic strategy

We report overall and age-specific estimates of the number of gang members (frequency), rate of gang membership per 100 persons (prevalence), and the frequency and rate of gang joining and leaving (turnover). Age-specific estimates of gang membership rates are combined with the 2010 U.S. Census Bureau single age estimates to report the frequency and turnover in gang membership in 2010. Patterns of juvenile gang membership are assumed to remain stable between the study period and the 2010 decennial census.

In the NLSY97, missing cases because of nonresponse or noninterview range from 587 to 782 for study participants between ages 5 and 17 years. Under weak assumptions about these cases, we create lower bound (LB) and upper bound (UB) estimates around all four measures of gang membership: frequency, prevalence, joining, and leaving. The UB estimates make the assumption that missing cases report gang membership at three times the age-specific rate of the observed sample, whereas the LB estimates assume that all missing cases do not report gang membership. For both boundaries, the target sample (N = 7,335) constitutes the denominator. In addition to these conservative bounds, we also present figures that assume cases are missing at random (MAR) with respect to gang membership.

We construct 95% confidence intervals around these estimates by drawing 1,000 bootstrap samples and using the standard deviation of each parameter's bootstrap distribution, adjusted for survey design, as the standard error of the estimate. We use a survey design effect multiplier of 2.0 to correct estimated standard errors for the cluster sampling design of the NLSY97 [31]. We report the lower limit of the confidence interval for the LB estimates (95% LB), and the upper limit of the confidence interval for the UB estimates (95% UB). Because these sampling variance-adjusted bounds are constructed using implausibly extreme assumptions about missing cases while accounting for design effects and sampling variance in a nationally representative sample, it is highly likely that they contain the actual number of juvenile gang members in the United States.

Results

Table 1 reports demographic differences between those who never reported juvenile gang membership and those who did. Gang members are significantly more likely than their nonmember peers to be male, Hispanic, and nonwhite. Although economically disadvantaged minorities are represented in much higher numbers in gang populations than in the general population, most youth gang members are still nonpoor and white, and 30% of them are female.

Table 2 reports the overall national estimates of the frequency and prevalence of youth gang membership. MAR estimates are

Table 1
Demographics of juvenile gang members compared with nongang members

	Never in gang (%)	Ever in gang (%)
Male	49.2	70.6
Hispanic	12.9	20.1
Race		
White	72.6	58.4
Black	15.6	23.6
Asian	2.3	2.5
Other	9.4	15.5
Lives with both biological parents (wave 1)	55.0	37.0
Family income below poverty level (wave 1)	11.6	22.5
Ν	6,096	652

Missing cases are assumed to be missing at random. All differences are statistically significant (p < .0001).

Table 2

National estimate of youth gang membership frequency and prevalence in 2010^a

	95% LB	LB	MAR	UB	95% UB
Frequency	675,000	966,000	1,059,000	1,244,000	1,535,000
Prevalence (%)	1.2	1.8	2.0	2.3	2.8

95% LB and 95% UB = lower and upper bound confidence interval; LB and UB = lower and upper bound missing data assumptions interval; MAR = missing at random estimate.

^a Estimates are pooled across age and extrapolated from the 2010 U.S. Census Bureau single age estimates.

reported in boldface. Moving outward, we report the UB and LB estimates based on weak assumptions about missing cases. We report our most conservative estimates, the sampling varianceadjusted bound estimates, in the outermost columns. These bounds are also presented in parentheses after MAR estimates throughout the text.

We estimate that there were 1,059,000 (675,000–1,535,000) juvenile gang members in the United States in 2010 and that the overall prevalence of youth gang membership was 2.0%. About 1 of every 50 persons between ages 5 to 17 years self reports active gang membership. Under weak missing data assumptions, the LBs and UBs of the prevalence of gang membership are 1.2% and 2.8%, respectively. These tight boundaries indicate that gang membership is rare among youth in the United States.

Figure 1 displays age-specific rates of gang membership in the NLSY97 from ages 5 to 17 years. Gang membership is strongly age-graded, evidenced by the growth and decline in the prevalence of gang membership in Figure 1. The rate of gang membership surpasses 1% (.5%–1.6%) of youth in the United States by age 10 years and rapidly increases during the preteenage years, leading to its peak of 5% (3.6%–6.8%) at age 14 years. Thereafter, the prevalence of gang membership decreases rapidly as youths approach adulthood.

Table 3 displays estimates for turnover in gang membership. This is based on self-reports of gang status transitions of either joining or leaving a gang. An estimated 401,000 (204,000–639,000) youth joined a gang in 2010 and 378,000 (199,000–599,000) left a gang. The gang leaving figure is 94% the value of the joining figure, reflecting carryover of gang membership into adulthood for a small percentage of members. Based on these estimates, we calculate a turnover rate in juvenile gang membership of $37\% (100 \times \{378,000/[(1,036,000+1,059,000)/2]\})$.

Just as gang membership is not evenly distributed across the life course, not all youth join and leave gangs at similar ages. Figure 2 reports the rates of joining and leaving gangs from ages 6 to 17 years. Not until age 12 do we observe the rate of gang joining exceed 1%. Most gang-involved study participants join gangs between ages 12 and 15 years, and the modal age of gang joining is 13 years. We estimate that 2.3% (1.5%–3.4%) of the U.S. youth join gangs at age 13 years. The age distribution of gang leaving is closely linked to the distribution of gang joining, but more negatively skewed, reflecting variability in the duration of gang membership.

Discussion

This study found that there are more than one million juvenile gang members in the United States. It is useful to compare this estimate with the National Youth Gang Survey (NYGS), the

D.C. Pyrooz and G. Sweeten / Journal of Adolescent Health xxx (2015) 1-6

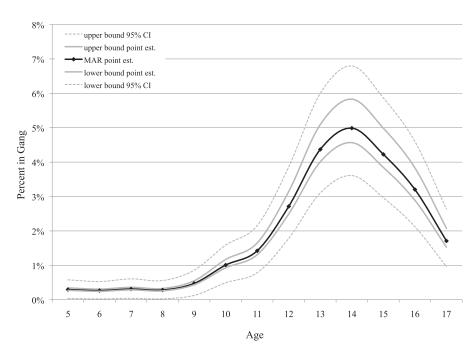


Figure 1. The age-graded prevalence of youth gang membership in the United States, ages 5 to 17 years. CI = confidence interval, MAR = missing at random estimate.

only other source of national estimates of youth gang membership, derived from annual surveys of personnel in law enforcement agencies about gang activity in their respective jurisdictions. The results of the NYGS indicate that roughly 40% of gang members in the United States are juveniles. In 2010, the NYGS estimates that there were 756,000 gang members of any age, which corresponds to 302,000 youth gang members [15,16]. Our MAR estimate of youth gang members is more than three times greater than the estimate produced by the NYGS. Our conservative LB is 2.2 times as large as the NYGS estimate, indicating that the population of juvenile gang members to date has been grossly underrecognized.

The discrepancy between the estimates produced by surveys of law enforcement personnel and surveys of youth is likely driven by the different strategies used to document juvenile gang membership. Law enforcement data are likely to include gang members who are generally older, more criminally involved and violent, and therefore of greater interest to law enforcement agencies, reflecting a top-down strategy of documenting youth gang members [17,22,33]. Youth who briefly experiment with gangs or are peripherally committed to gangs are less likely to be included in law enforcement surveillance systems and instead

 Table 3

 National estimate of annual gang joining and leaving frequency among youth in 2010^a

	95% LB	LB	MAR	UB	95% UB
Gang joining	204,000	367,000	401,000	469,000	639,000
Gang leaving	199,000	345,000	378,000	446,000	599,000

95% LB and 95% UB = lower and upper bound confidence interval; LB and UB = lower and upper bound missing data assumptions interval; MAR = missing at random estimate.

^a Estimates are pooled across age and extrapolated from the 2010 U.S. Census Bureau single age estimate.

captured in national surveys, reflecting a bottom-up strategy for documentation. Although the estimates produced in the present study are greater than those found in law enforcement data, at a prevalence of 2.0% between ages 5 and 17 years, gang membership remains a rare social category among youth in the United States.

Youth gang members, whether documented by law enforcement or in surveys of youth, are an important at-risk population of interest to policy makers, public officials, and health care professionals because of their well-established health risk behaviors, which is why it is necessary to have accurate information on youth gang membership. Public health officials, for example, have discussed the underrecognition of gangs in the context of violence and emergency care since the 1990s [34,35]. Others have identified gangs as being a driver of bullying and intimidation in schools [36]. Should "gang" be missing from diagnosis of violence in emergency rooms or school bullying, the underlying sources of these problem behaviors might be attributed incorrectly to other risk factors and the associated responses misdirected.

For every 401,000 youth who join, another 378,000 youth exit gangs each year. These significant numbers represent the target population for prevention and intervention programs. Our results direct practitioners and policy makers to specific age groups where youth are most likely to join and leave gangs. Although we find reports of gang membership as early as age 5 years, the bulk of participation occurs after age 10 years. The risk for joining a gang is greatest at age 13 years but declines quickly as youth approach adulthood. These findings suggest that the middle school years, particularly before the age of 12 years, are appropriate for practitioners to identify established risk factors for gang membership-negative life events, antisocial tendencies, prodelinquent attitudes, low parental supervision, and delinquent peers [20]—and for the implementation of effective prevention programs, such as Gang Resistance Education and Training (G.R.E.A.T.) [37]. Preventing someone from joining a

D.C. Pyrooz and G. Sweeten / Journal of Adolescent Health xxx (2015) 1-6

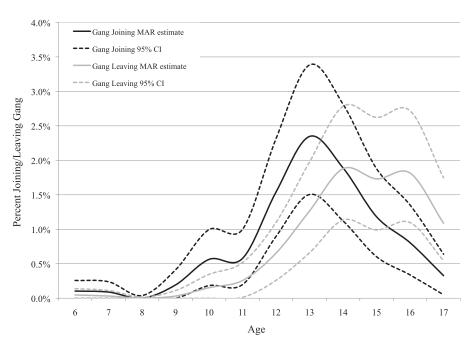


Figure 2. The age-graded prevalence of gang joining and leaving in the United States, ages 6 to 17 years. CI = confidence interval, MAR = missing at random estimate.

gang is far more effective in warding off proximal and distal consequences than persuading an active gang member to leave, especially because gang membership has enduring consequences even after cessation [6,10,14].

The population of gang members in the United States turns over with great frequency on an annual basis. Most youth who join a gang leave it long before adulthood. Unlike gang prevention, there are no known programs with rigorous evaluations that have been found to facilitate desistance from gangs. Because gang members are likely to desist relatively quickly and under the circumstances of natural social processes (e.g., disillusionment, maturation, family, and romantic relationships) [38], these findings would suggest that intervention efforts should be reserved for those at greatest risk of long-term persistence. Accordingly, given the negative collateral consequences of official intervention, particularly for gang members [39], general intervention programming applied to all gang members would be a misguided use of resources. Instead, secondary intervention programming could target key risk behaviors associated with continuity in gang membership, including participating in gang fights, gang symbols (such as clothing, argot, graffiti, and hand signs), expressed gang allegiances, gang-involved peers, and time spent with gangs, as well as marked changes in the aforementioned risk factors for gang joining [7,32].

Juvenile gang membership in the United States does not conform to popular perceptions of gangs as poor black or Hispanic boys [40]. Our findings reveal that although males, blacks, Hispanics, and youth from single-parent households and families living below poverty are statistically more likely to have a history of juvenile gang membership, none of these factors are monolithic to gangs because there is a large portion of females, whites, and youth from two-parent and nonpoverty families also participating in gangs. Although gender, race, ethnicity, family structure, and socioeconomic status do indeed differentiate gang from nongang youth, we would encourage clinicians and public health officials who are concerned with youth gangs to base their prevention and intervention efforts on dynamic rather than static factors.

The results provided in this study must be balanced against study limitations. Although self-reports are the accepted measure of gang membership, social desirability and identity uncertainty may result in discrepant responses. Baseline retrospective selfreports might not reflect childhood and preadolescence gang membership as well as contemporaneous self-reports, although the estimates are consistent with the behaviors reported in prior field and survey research. Importantly, childhood gang membership is comparatively minimal compared with gang membership in adolescence. Also, these analyses function at a national level and cannot determine if and how youth gang membership has been underestimated at lower levels of aggregation.

This study produced national estimates of the frequency, prevalence, and turnover in juvenile gang membership based on surveys of youth. With more than one million juvenile gang members in the United States constituting 2% of youths aged 5 to 17 years, official estimates of the population of gang members to date has been severely underestimated. Most youth join gangs in their early teen years and leave gangs rather quickly, resulting in high turnover on an annual basis. These patterns of juvenile gang membership support programs aimed at prevention strategies.

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