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## **American Indian Gang Involvement: Changes and Associated Risk Factors for Adolescents on Reservation Communities 1993-2013**

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I am submitting herewith a thesis written by Lauren Fox entitled "American Indian Gang Involvement: Changes and Associated Risk Factors for Adolescents on Reservation Communities 1993-2013." I have examined the final electronic copy of this thesis for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Master of Arts, with a major in Psychology.

Todd Moore, Major Professor

We have read this thesis and recommend its acceptance:

Gregory Stuart, Christian Elledge

Accepted for the Council:

Dixie L. Thompson

Vice Provost and Dean of the Graduate School

(Original signatures are on file with official student records.)

American Indian Gang Involvement: Changes and Associated Risk Factors for Adolescents on  
Reservation Communities 1993-2013

A Thesis Presented for the  
Master of Arts  
Degree  
The University of Tennessee, Knoxville

Lauren Page Fox  
August 2019

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**Dedication**  
For my family.

### **Acknowledgments**

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### **Abstract**

American Indian reservations are among emerging communities for gang activity in the United States, in which reports of a rise in youth and/or criminal gangs began occurring after the 1980s. Gang membership and activity has been found to present significant costs to the individual, community, and overall macrosystem, posing a public health risk, straining community resources, and leading to a myriad of individual negative life outcomes. The perceived increase in gang activity has been observed by law-enforcement and community stakeholders, but comparatively little empirical research has focused specifically on American Indian groups or reservation communities. Utilizing data from “Drug Use Among Young American Indians: Epidemiology and Prediction”, ANOVA and regression analysis was utilized to examine cross-sectional trends in gang involvement among 14,457 American Indian adolescents living on or near reservation communities across nineteen time points between 1993-2013.

Contrary to public opinion, result of this study failed to establish a consistent pattern of either growth or decline in gang membership across time when examining all reservations communities, and suggest that consistent trends may exist only within specific communities. Gang members were found to endorse significantly more alcohol use, marijuana use, anger, depressed mood, and victimization as a whole. However, only alcohol use, marijuana use, violent behavior, and depressed mood were demonstrated a significant interaction with time and gang membership. Across domains of individual, family, peer, school, and community risk factors, adolescents who endorsed gang membership also demonstrated more cumulative risk across than those who have never been in a gang. Finally, self-reported substance use, criminal behavior/delinquency, and perpetration of violence were found to significantly increase as level of gang affiliation increased.

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## Chapter 1

### Introduction and Literature Review

Gang activity has been an increasingly persistent and pervasive issue in the United States over the last century and shows no signs of abating, as gang membership has continued to grow significantly since the turn of the 21st century (Federal Bureau of Investigations, 2011; Simon, Ritter, & Mahendra, 2013). While the full scope of gang activity can be difficult to capture, data from the National Youth Gang Survey found that the number of youth gangs in the United States between the years 2002-2010 increased from 21,800 to 29,400--nearly 35% (Simon et al., 2013). Similarly, the Federal Bureau of Investigation's 2011 National Gang Threat Assessment found an almost 40% increase in adult gang members in the United States from 2009 to 2011, from approximately 1 million active members to approximately 1.4 million (Federal Bureau of Investigations, 2011).

As challenging as it is to capture such estimates in the United States, creating a cohesive international definition of gangs with which to utilize in epidemiological research appears at times to be close to impossible, as definitions, measures, and constructs vary widely across the globe. While gang activity is certainly not unique to any one country or society, the dynamics, culture, and effects of gangs can be a unique reflection of a culture and environmental context. Researchers and law enforcement agencies often utilize definitions of *gang* or *gang activity* that revolve around a dedicated or identifiable group, comprised of multiple individuals, for whom at least one primary purpose is criminal behavior or activity (Federal Bureau of Investigations, 2011; Moore, 1990a; Simon et al., 2013). This type of gang involvement is often associated with increased delinquent behavior (both violent and non-violent), decreased educational attainment, increased drug involvement, and increased risk for violence and victimization (Barnes, Beaver,

& Miller, 2010; Bjerregaard, 2010; Decker, Melde, & Pyrooz, 2013; Fox, 2017; Gordon et al., 2004; Taylor, Peterson, Esbensen, & Freng, 2007).

Criminal gang activity can cause a strain on the individual, community, and macrosystem. In some cities in the United States gang members account for seven of every ten self-reported violent offenses, and while the overall monetary cost of crime in the United States annually is an estimated \$655 billion, the average youth with six or more criminal offenses in their lifetime can specifically pose a cost to society of approximately \$5.7 million (Simon et al., 2013). As of 2011, the National Gang Intelligence Center estimates that gang members account for approximately 48% of violent crime in many jurisdictions in the United States, with that estimate increasing to as high as 90% of all violent crime in specific jurisdictions (Federal Bureau of Investigations, 2011). Additionally, while the popular image of gang members in American culture may elicit an mental image of adult men, research has shown that most youth who join gangs do so between that ages of 11-15 (Simon et al., 2013).

The current state of empirical psychological research focused on all aspects of gang dynamics and activities is far from comprehensive, as issues including political agendas and social dynamics can create discrepancies in definitions and identification of who or what counts as a "gang". Much of the research and understanding of gang dynamics in the United States stems from information gathered from large, urban, metropolitan centers. Comparatively little research has focused on gang dynamics in non-traditional communities, including those in rural and/or geographically isolated locations. American Indian reservation communities are typically examples of both; rural environments in geographic and/or culturally isolated settings. While some research and public opinion have pointed to a perceived increase in gang activity on or near reservation communities (Eckholm, 2009; Freng, Davis, McCord, & Roussell, 2012; Hailer &

Hart, 1999), it has not been clearly established if this perception is accurate and, if so, whether this increase can be observed across the many reservations communities the United States or if it is restricted to particular communities. Furthermore, current theoretical frameworks that have been developed to understand gang dynamics in other communities and contexts have not been extensively evaluated in American Indian gangs. Additionally, the scant research focused on gangs in indigenous communities which has been conducted thus far often does not account for much of the considerable within-group diversity of the American Indian population, as indigenous communities in the United States alone represent a wide array of distinct, diverse cultures.

The proposed study will examine the growth in gang involvement among adolescents in grades 7-12 across reservation communities in the United States at nineteen time points from 1993-2013. Additionally, increases in gang involvement will be compared to trends in reported substance use, delinquent and/or criminal behavior, and victimization community-wide. Finally, we will examine if individuals at increasing levels of gang involvement also endorse risk factors across more developmental domains—individual, family, peers, school, and community—than any one domain alone, as compared to non-gang involved peers.

### **The individual impact of gangs**

Gangs inherently involve some level of impact on multiple individuals, as they necessitate the existence of a group. However, the effects of gang membership do have implications at the individual level, as well. Practically speaking, membership in a criminal gang puts an individual at heightened lifetime risk for incarceration and contact with the criminal justice system (Simon et al., 2013). Much of the tracking and measurement of overall gang activity comes from the criminal justice system and police organizations, which unfortunately

contributes to the difficulty in ascertaining an accurate picture of gang dynamics (Moore, 1990). Hand-in-hand with the risks associated with incarceration are the potential for challenges in maintaining a satisfying quality of life; this is particularly true for individuals who obtain felony-level offenses, which can impact one's ability to gain employment, to vote, or to qualify for student loans, housing, and other benefits (Western, Kling, & Weiman, 2001).

Gang involvement is often tied to experiences of both perpetrated and experienced victimization. Young adults participating in gangs are more likely than their peers to have experienced some form of victimization (e.g., abuse, assault, sexual violence) in their lifetime, and are more likely to be victimized by their gang-affiliated peers after joining (Fox, 2017; Taylor et al., 2007). Girls in gangs tend to report higher instances of sexual victimization in childhood and higher risk of current victimization than male gang members (Fox, 2017). Gang members are also more likely to be revictimized by other gang members, but are likely to report lower feelings of risk of revictimization (Fox, 2017). Conversely, being a part of a violent or antisocial peer group, like a that of some youth gangs, increases the opportunities for becoming offenders of victimizing behavior as well. Gang dynamics and these cycles of victimization have been studied in multiple different settings, but have generally not been examined outside of the expected major urban centers focused on gang research (Howell & Egle, 2005), let alone in a context such as American Indian reservations.

Gang membership and affiliation has also been associated with increases in behaviors often characterized as delinquent, criminal, or antisocial. Depending upon the definitions utilized, these behaviors may include or be associated with significant drug involvement; this includes substance use (Bjerregaard, 2010; Decker et al., 2013) or sale/distribution (Bjerregaard, 2010; Decker et al., 2013; Gordon et al., 2004). Increases in substance use risk should then be

particularly concerning in those gangs which are based in communities or are comprised of demographic groups who are themselves already at increased risk of substance use, and the potential capacity for these risk factors to compound upon each other. American Indian youth have been found to engage in higher rates of substance use than their non-American Indian peers nationwide, with American-Indian youth living on reservations engaging in higher rates of substance use than those who do not (Beauvais, 1992).

A study conducted by Coid and colleagues (2013) also suggests that gang members pose an unaddressed public health risk, in that they experience higher levels of psychiatric morbidity than their male peers. In a study of 4,664 men ages 18-34 in Great Britain, the authors found that there existed a clear gradient in the use of psychiatric services when looking across three groups: violent men, nonviolent men, and gang members. Some of the outcomes more likely to be experienced by men who were violent and in a gang (as compared to non-violent men) are unsurprising, given the known risks of gang involvement: being more likely to endorse alcohol dependence, experiences of victimization as well as violent ruminations, and antisocial personality disorder. However, the data also suggested that these men were more likely to experience anxiety disorders, suicidality, and some features of psychosis (Coid et al., 2013). These results point to the possibility that gang involvement, particularly when it co-occurs with experiences of violence, may pose a considerable risk to an individual's overall mental health, and pose a public health concern in addressing their eventual mental health needs. When considering the earlier cited data that described the average age of those joining a gang as ranging between 11-15, this inordinate strain on one's mental capacities at such a developmentally vulnerable stage should be cause for alarm.

## **The burden of defining gangs**

A universally accepted concept or definition of a "gang" has yet to be established, particularly in academic research. Ultimately, how a gang is defined will be dependent on the source of the definition (Ball & Curry, 1995; Knox, 2006). Gathering data from individual self-report, ethnographic observation, criminal justice systems, or community stakeholders yield different results and are subject to the biases or goals of all parties involved. Over reliance on observations by and contact with the criminal justice system specifically leaves researchers open to the potential risks of creating an inaccurate or incomplete picture of the population. By contrast, self-identification has been suggested to be a particularly robust tool for establishing gang membership (Esbensen, Winfree, He, & Taylor, 2001).

This is important to keep in mind for the purposes of this particular study because establishing gang membership for academic research is essentially reliant on two methods: individual or group self-report, or indirect observation (generally by police or criminal justice personnel, community members, or public officials). But these methods essentially require the use of frameworks for defining "gang" or "gang membership" which is either created by the respondent but not controlled by the researcher, or created by the researcher and not controlled by the respondent. This creates an unfortunate opportunity for inaccuracies, as researchers are left with the two options of "You tell me that you are in a gang" or "I tell you that you are in a gang". While it is important to understand academic definitions of gang-activity, self-identified gang involvement essentially demands each individual and each gang organization creates and maintains their own definitions and affiliations, whether passively or actively.

Gang membership in a formal sense has generally been found to be a short-term condition; the majority of youth in gangs do not maintain membership beyond approximately



one year (Carson & Vecchio, 2015). However, as Carson and Vecchio (2015) point out, defining gang desistance can be as problematic as defining gangs at all and can encompass a change in self-identification and disengagement from gang activities, but does not necessarily preclude involvement in criminal or delinquent behaviors. This, again, relates back to the inherent conundrum in gang-research: does self-identification define a gang member? Individuals who desist gang membership may continue to be viewed and treated by law enforcement, rival gangs, or community agencies as gang members, and any future criminal activity they may be involved in (whether they be victims or perpetrators, or neither) has the potential to be viewed as gang related.

### **Theoretical frameworks about gangs**

One framework used to conceptualize the development of social groups into criminal or violent gangs is a concept of a *subculture of violence*, in which individuals are normed to support and encourage violent and aggressive behavior (Vigil, 2003). These norms can be conceived of as encouraging the escalation of what would normally be individual-level conflicts into issues of group honor or reputation. A *routine activities* framework, on the other hand, paints gang violence as resulting from a convergence of opportunity, time, and context; individuals spending increasing amounts of time in the presence of factors which would expose them to criminal behavior become more likely to engage in criminality themselves (Vigil, 2003). However, Vigil (2003) points out that both of these frameworks, while useful in conceptualizing gang dynamics, fail to accurately capture the reality of street gang culture as gathered through direct observation and ethnographic study. Conversely, utilizing populations of self-identified gang members will generally involve speaking with either former gang members or current ones; both possibilities run the risk of drastic over- or under-romanticization of their gang lifestyle (Moore, 1990). A

potential double-edged sword then begins to emerge for researchers collected data: using law enforcement or researcher-defined gang samples can lump a potentially inaccurate subset of individuals together under the umbrella of “gang”. Sampling self-report populations whom are identified by their contact with the criminal justice system, correctional facilities, or other institutional setting may result in biases or misrepresentations colored by the experiences that led them to said institutions in the first place (Moore, 1990).

One school of thought is that gangs develop as a natural response to the stresses of their respective environments, characterizing them essentially as almost a naturally occurring phenomenon. However, in any given community with a gang presence, the vast majority of the population is not a part of a gang (Hautala, J. Sittner, & Whitbeck, 2016; Vigil, 2003). Compared to both *routine activities* and the *subculture of violence* frameworks, a *multiple marginality framework* provides an integration of both individual psychological factors and social environmental factors in conceptualizing gang dynamics (Vigil, 2003). This framework is designed to address the myriad of factors which can influence both the development and behavior of gang members, including the push of macro-forces such as institutional racism and immigration, and the influence of a social group that encourages the development of a street identity (Vigil, 2003). The multiple marginality framework places the impetus for the growth of gangs within the context of the environment, where options for living conditions, employment, upward mobility (or lack thereof) together create patterns of parenting, policing, and education which affect the dynamics of individual and group identification (Conchas & Vigil, 2013). For marginalized communities, this confluence of factors creates conditions which are ideal for youth gang development, and has been recreated across a number of distinct groups throughout United State’s history as they have moved in and out of situations characterized by economic and

cultural disadvantage or isolation.

While the multiple marginality framework provides some structure for the contexts within which gangs develop and their working dynamics, the specific risks and protective factors at play for a given individual's likelihood of joining a gang can be better explained with a different theoretical framework. Thornberry et al. (2003) have proposed an *accumulated risk theory* for delinquency, which has been extended to a model of gang membership, in which cumulative risk across multiple developmental domains, including individual, family, peers, school, and community, puts adolescents and young adults at greatest risk for gang involvement, and not just a simple majority of risk factors alone (Howell & Egley, 2005). An increased load of risk factors across these domains are likely to outweigh any protective factors in those individuals who display more delinquent behavior and gang involvement. This framework stresses lifetime development in which environment and behavior maintain a bidirectional relationship, describing patterns of behavior as being shaped as a result of continuous interactions with one's environment, and not simply through environmental forces acting upon the individual (Howell & Egley, 2005). Microsystem dynamics, such as family structure and neighborhood resources, may shape the development of functional peer and prosocial relationships, which may then leave an individual vulnerable to adopting antisocial beliefs or less able to successfully cope with macrosystem stressors (e.g. racism, poverty) or negative life events (Howell & Egley, 2005).

This process is suspected to operate differently in late-onset gangs, coming about from the mid-1980's and beyond, as these groups are considered demographically and structurally distinct from their earlier established counterparts (Howell & Egley, 2005). This is significant considering that this is roughly the timeline in which the introduction and growth of American

Indian gangs began to be reported, putting them in a more late-onset or emergent category. In communities which are particularly rural and/or isolated, as well as those with racial or ethnic dynamics which are distinct from the larger US culture (i.e. the majority of reservations in the United States), gang-development frameworks still need to be studied for applicability.

Research by Donnermeyer and colleagues (2000) included one of the very limited number of studies examining self-reported gang involvement among American Indian youth, examining a subset of individuals from communities in the western United States. When compared to peers with no gang affiliation, gang-affiliated American Indian youth had higher direct and indirect involvement with drugs and delinquent activity, which increased with severity as level of affiliation increased—i.e., those who identified as being in a gang reported higher drug involvement than those who simply socialized with gangs (Donnermeyer, Edwards, Chavez, & Beauvais, 2000). While this is not unexpected when compared to gang dynamics across other ethnic or racial groups, Donnermeyer et al. (2000) point out that American Indian reservation communities present characteristics that make them unique among other American cities or towns.

Among non-American Indian youth, being poor, lacking adult supervision or family organization, subsequent delinquency, and ethnic minority status are all associated with gang involvement (Whitbeck, Hoyt, Chen, & Stubben, 2002). A 2016 study by Hautala, Sittner, and Whitbeck of childhood risk factors among a sample of midwestern American and Canadian indigenous youth found support for both cumulative risks and multiple marginality frameworks in future gang involvement. Yet the authors reported that at the highest levels of cumulative risk across their domains of 1) family characteristics, 2) school adjustment, 3) peer relationships, 4) individual characteristics, and 5) early delinquency, there was still an approximate 50%

probability of gang involvement. High levels of isolation, both geographic and cultural, paired with instances of transience (i.e. individuals being sent to live outside of the reservation for extended periods), systemic poverty and economic obstacles, as well as potential deterioration of cultural identities all must be taken into consideration as interconnected stressors that are likely to be found across reservation communities in the US. Therefore, examining risk factors for American Indian gang membership must account not only for the individual, but take into account the unique social, community, or even global risk factors that may be present for these individuals. Thus, the current study will utilize this accumulated risk framework for examining risk factors for gang membership for American Indian adolescents in reservation communities.

### **American Indian gangs**

Gang dynamics, theoretical frameworks, and cycles of victimization have been studied in multiple different settings, but often remain unexamined outside of the expected major urban centers focused on in gang research (Howell & Egley, 2005), particularly in a context like American Indian reservations. The proposed study aims to examine gang involvement among teenagers living on or near designated reservation communities, if there has been an increase in gang involvement across all communities over time, and if the presence of risk factors across multiple developmental domains carries a greater risk for involvement than a high degree of risk in one domain alone.

Journalists, researchers, and community stakeholders have started to draw attention to what is perceived as increased gang activity on Native American reservations over the last two decades (Hailer & Hart, 1999). In the 2009 New York Times piece *Gang Violence Grows on an Indian Reservation*, the new and growing nature of these reservation gangs are described as “[lacking] the reach of the larger gangs after which they style themselves, the Indian gangs have

emerged as one more destructive force in some of the country's poorest and most neglected places", suggesting a perception of reservation communities as having a particular vulnerability to the effects of gang activity (Eckholm, 2009). Of the limited research that exists, police awareness of gangs operating on or near reservation communities seems to place the beginning of a gang presence in the 1990s, growing to an estimated 370+ gangs operating by the turn of the 21st century (Freng et al., 2012). This could potentially put most reservation communities under the umbrella of *emergent* gang cities, or smaller cities with a gang culture developing after the 1980's (Tita & Ridgeway, 2007). However, the isolated nature and unique characteristics of many reservations could potentially set them apart from even the smallest non-reservation emergent cities. Yet it has not been clearly established if this perceived phenomenon of growing gang involvement is true across reservation communities throughout the United States, how the characteristics of such gangs would differ from youth gangs found in other communities, or why this might be occurring. In the proposed study, we hope to establish whether this perceived rise in gang activity is associated with an increase in self-reported gang involvement. We also will examine whether any increases in gang presence over time precede increases in reported substance use, victimization, or delinquent behavior community wide.

Given the valid evidence to suggest that the gang activity of American Indian communities may be a growing area of concern for community stakeholders, and has been for a few decades at least, the lack of empirical research into the phenomenon is concerning. One reason for this absence of interest may lie in the characteristic differences between gang activity on reservation communities and traditional, urban center gang activity. Generally speaking, rural gangs (and by extension, reservation-based gangs) operate differently from the more well-known urban gangs after which they can be modelled (Freng et al., 2012; Knox, 2006; Theriot & Parke,

2008). In reservation communities, gangs can operate with distinct lack of competition --i.e., very limited numbers of identifiable groups with relatively relaxed affiliations-- which may prevent some of the more violent and disruptive gang activity associated with rivalries from developing (Egley & Major, 2004; Freng et al., 2012; Hailer & Hart, 1999). By comparison, in areas where gang tensions do occur, such as major metropolitan cities, there is increased likelihood of homicide, aggressive recruiting tactics, and stricter group membership regulations (Simon et al., 2013).

Whereas increased instances of interpersonal violence and homicide, drug activity, and gendered violence are expected to accompany large-scale gang activity (Federal Bureau of Investigations, 2011; Knox, 2006; Simon et al., 2013), specific areas of concern for emergent reservation gang activity primarily include vandalism, delinquency, and access to, but not necessarily extensive use of, firearms (Freng et al., 2012; Hautala et al., 2016). While these types of infractions or misdemeanors may not elicit significant alarm in large, metropolitan cities, they still do have alarming implications in the context of reservation communities and point to a more emergent potential for gang growth. Based on currently available research, there exists only a minority of native communities in which multiple distinct gang-identified groups have been able to develop, according to surveys assessing community perceptions and attitudes (Egley & Major, 2004). Particularly in the American Southwest, which may be fundamentally related to the sheer size of these reservation communities, as they are large enough population centers able to support the formation of more than one group (Federal Bureau of Investigations, 2011; Freng et al., 2012; Hailer & Hart, 1999).

One distinct characteristic of reservation communities which may contribute to gang perceptions is the combination of over- and under-policing which currently and historically

impacts the Native American community in the United States (Perry, 2006). Policing in federally-designated Indian Country is comprised of a complicated history of military, federal, and local efforts which were initially designed to facilitate the forced relocation and restriction of indigenous communities onto increasingly restricted reservations and allotments, enforcement of rationing of resources, and forcibly remove children to be placed in boarding schools and/or the foster care system (French, 2005). Presently, a contentious relationship tends to exist between the Bureau of Indian Affairs (BIA) police and the communities they are responsible for based on historical precedence, giving them the reputation of “an occupying army” (French, 2005). Over-policing can include more frequent contact with police, increased likelihood of being arrested and charged, increased likelihood of receiving jail time, or disproportionately harsh sentencing for the same crimes as compared to other ethnic groups (Freiburger & Burke, 2011; Martin, 2013; Perry, 2006). Under-policing can include a limited or non-existent response to victimization and criminal activity against Native American individuals (Perry, 2006), even though Native American individuals are victims of crime at a per capita rate double that of the general population’s (Perry, 2006).

These disparities are cause for concern because they would suggest that any illegal activity, even the relatively small-scale vandalism or truancy exhibited by some reservation gangs, could have greater potential negative repercussions for American Indian gang members than for those ethnic groups which do not experience over-policing. An increased likelihood of contact with the criminal justice system has additional harmful implications, as emergent gang culture in some communities might be influenced by the gang culture found in correctional facilities. Specifically, individuals who spend time in federal correctional facilities are exposed to or are able to participate in large-scale prison gang culture, which can be extremely stratified



by race or ethnicity --i.e., Latin Kings, Crips, Aryan Brotherhood, etc. (Goodman, 2008; Knox, 2006). This exposure provides a crash course in gang culture, which individuals are then able to bring back to their communities as a part of the migration of gang culture away from urban centers (Hailer & Hart, 1999; Theriot & Parke, 2008). These individuals have been described as “carriers” of gang-related knowledge; individuals who bring the basics of understanding gang activity to a community which has been previously unaffected by it (Donnermeyer et al., 2000). Individuals bringing knowledge in via first-hand exposure in the criminal justice system are also likely to synthesize with any existing exposure to popular culture portrayals of gang life, via film, television, and music (Donnermeyer et al., 2000; Theriot & Parke, 2008). This might help to explain why there seems to be in some communities a very distinct Native American gang culture developing (e.g. Rez Dwellers, Sovereign Nation Warriors, Native Mob, Red Pride), and others might be more or less completely modelled off of well-known urban gangs, adopting such well-known names as the Crips, Bloods, or Latin Kings (Federal Bureau of Investigations, 2011; Hailer & Hart, 1999).

Exposure to gang cultures is not necessarily solely responsible for migrations of gang culture. While it is true that proximity to gang culture can factor into the development of new gangs, it cannot be ignored that the disenfranchisement and disadvantages that have developed on reservation communities can encourage completely independent gang development as well. Gang culture can be expected to develop when there is a confluence of such factors as poverty, discrimination, difficult acculturation, ruptures in community dynamics, lack of cultural identity, and disorganized family dynamics (Donnermeyer et al., 2000). Legacies of colonialism and historical mandates forcing assimilation have created a scenario where many individuals, particularly urban American Indians, struggle to maintain a sense of ethnic identity (Napoli,

Marsiglia, & Kulis, 2003). Through the process of colonization and western expansion, entire cultures and languages were extinguished completely (Garrett & Pichette, 2000). Many reservation communities could serve as illustrative examples of Vigil's (2002) Multiple Marginality Framework (see Appendix A for Figure [1]), in which risk continuously accumulates by occurring at multiple ecological levels (Hautala et al., 2016). A confluence of exposure to discrimination, economic disenfranchisement, and a disconnect from both the majority culture and one's own ethnic identity could create a situation in which gang membership is framed as desirable and beneficial to young people (Donnermeyer et al., 2000).

Despite the negative perception that can be associated with gang membership, there are a number of adaptive reasons that would compel an individual--particularly an adolescent--to seek gang membership out. While gang membership is often characterized as a result of maintaining a delinquent social circle, research by Weerman and colleagues (2015) suggests that youth gang members demonstrate greater network stability, creating and maintaining a larger number of friendships than individuals who leave gangs. Gang units can also provide a social structure and sense of belonging, aspects that may prove particularly appealing to adolescents who are unable to find these elements elsewhere in their environment (Sharkey, Shekhtmeyster, Chavez-Lopez, Norris, & Sass, 2011).

In his 1994 book "An Introduction to Gangs", George Knox also describes the sometimes "symbiotic" relationship that can evolve between a gang and the community in which it is embedded. In such instances, functional relationships between the gang, the community at large, and local law enforcement may create a situation in which a gang presence is viewed as a functional component of the overall community (Knox, 2006). The benefit of membership in some sort of cohesive group, be it one with a prosocial or antisocial intent, cannot be overlooked

for its potential significance for ethnic minority groups, such as American Indians. Lack of connectedness in the home and in school environments has been found to associate with low educational attainment, increased risk-taking behaviors in American Indian adolescents (Machamer & Gruber, 1998). In the absence of more prosocial options, the camaraderie and support offered through gang membership becomes understandably appealing.

### **The current study**

The proposed study will examine multiple aspects of potential gang presence in the reservation communities in question. First, it is hypothesized that self-reported gang involvement (as opposed to gang activity as identified by law-enforcement) will have increased from 1993-2013 among Native American teenagers. Second, increases in self-reported gang involvement over the early period of this 20-year span will be associated with later increases in substance use, mood disturbances, and experiences of victimization and violence community-wide. Third, American Indian teens who self-report gang involvement will endorse more cumulative risk factors across the five developmental domains of self/individual, family, peers, school, and community than those who do not report gang involvement. Additional analysis will examine the potential differences in endorsed risk factors based on level of gang association (i.e., in a gang versus associating with gangs versus not in a gang). Finally, substance use, delinquency and criminal behavior, and perpetration of victimization will be examined to see if there are significant differences between Native American Teens who are not involved with gangs, associated but not participating in gangs, and members in gangs. It is hypothesized that self-reported substance use, delinquency, and victimization will increase as level of gang involvement increases.

## Chapter 2

### Methods

#### Participants

Data for this study was compiled from the public dataset “Drug Use Among Young Indians: Epidemiology and Prediction 1993-2006 and 2009-2013” (ICPSR35062), which was provided through the Inter-university Consortium for Political and Social Research (Beauvais & Swaim, 2015). The dataset was collected as a part of 2 different surveys—the American Drug and Alcohol Survey (ADAS) and Prevention Planning Survey (PPS)—across 3 data collection periods: 1993-2000, 2001-2006, and 2009-2013. In Wave 3 of data collection, the two questionnaires were combined into one document. The primary focus of the original project was the examination of the epidemiology of substance use as well as environmental and developmental factors, such as peer relationships, family dynamics, school resources, and cultural identity for adolescents who attend school on or near American Indian reservations. Surveys were completed annually in the classroom setting in grades 7-12. Sampling consisted of schools with  $\geq 20\%$  American Indian population on, or in close proximity, to reservation communities. Overall, the full dataset includes 534 variables, and data from 26,451 students.

#### Data collection procedures

Seven geographic regions were identified using previously established delineations used to group similar tribal communities together under the labels of: Northern Plains, Upper Great Lakes, Southwest, Southeast, Oklahoma, California, Alaska (Snipp, 2005). Adjustments were made to these delineations to more accurately reflect the regional make-up of the study participants. These changes include an addition of Northwest and Northeast as categories, shifting of specific states into different regions, and omitting California and Alaska due to state

restrictions on survey protocols. Therefore, the final regional designations utilized were labeled as: Northwest (WA, OR, ID), Northern Plains (MT, WY, NE, ND, SD), Upper Great Lakes (MI, MN, WI, IA), Northeast (CT, MA, ME, NJ, NY, RI), Southeast (VA, NC, SC, LA, MS, FL, AL, southeast TX), Southwest (AZ, NM, CO, UT, NV, Southwest TX), Oklahoma, Southern Great Plains (KS).

For their participation, schools were given \$500 and a comprehensive report of their survey findings. After obtaining tribal government and/or school approval, surveys were administered by school staff during normal class time. School participation was optional, and students (or parents on behalf of their students) could individually opt-out of participation. Students could also leave any items on the survey blank. School staff remained present during survey administration, but were instructed not to stand in a location that would allow them to observe student's responses. Completed surveys were placed by the students into an envelope, which was then sealed and returned to researchers for scanning. Fewer than 1% of students refused participation or opted out. Some schools were re-surveyed repeatedly on a 4-year cycle; in these instances, data from students who were already surveyed were not included.

## **Measures**

*Demographics:* Sample demographics will be assessed using participant responses to questions asking their age, grade in school (7<sup>th</sup>-12<sup>th</sup>), Gender (male/female), and geographic region. For racial/ethnic identity, participants were able to identify as one or more of the following: White, Black or African American, American Indian, Alaska Native, Asian American, Mexican American, Spanish American, Puerto Rican American, Latino/Hispanic, Hawaiian or Pacific Islander, or Other. For the purposes of this study, only those individuals who selected American Indian as at least one of their racial/ethnic identities were included in the following analyses

(N=14,457).

*Gang Involvement:* Gang involvement in this dataset was examined through two variables. Of primary use was the question “Have you ever been in a gang?”. Students were given the answer options “1. I will never join a gang”, “2. Used to be in a gang, but not now”, “3. I will join a gang later”, “4. Not a member of a gang, but hang out with a gang”, or “5. In a gang now”. In order to be utilized in multiple different analyses, this variable was also transformed into a dichotomous variable of lifetime gang membership, in which “I will never join a gang”, “I will join a gang later”, and “Not a member of a gang” were combined into a single response option: “Has never been in a gang”. The options “Used to be in a gang, but not now” and “In a gang now” were combined into a single option: “Has ever been in a gang”. Secondly, participants were also asked “How many of your friends are in a gang?”, with possible response options of “1. None of them”, “2. A few of them”, “3. Most of them”, or “4. All of them”.

#### *Measures of risk factors*

Hypothesis 2 utilizes a number of derived scales which combined both suggested variable combinations utilized in past analyses of the dataset, as well as additional variables unique to this study. Through factor analyses and additional examination, the following constructs were examined utilizing the combined variables (see Table 1). Of the 534 variables available in the dataset, 31 face-valid items of anger, depression, self-esteem, marijuana use, alcohol use, violent behavior, and victimization were identified and then analyzed utilizing principal component factor analysis. All variables were mean centered prior to conducting principal component factor analysis, iterated principal factor extraction, and promax oblique rotation for each construct. Anger, depression, violent behavior, alcohol, and marijuana all resulted in single factors, whereas victimization and self-esteem analyses resulted in 2 separate factors.

*Alcohol use:* Factor analysis was conducted on 4 face-valid indicators of general alcohol use. This analysis resulted in one interpretable factor (eigenvalue >1). These variables included frequency of use of the past month and year, frequency of getting drunk over the past month and year, and self-reported user level (see Table 1.). Factor loading for all four variables ranged from .87-.91.

*Marijuana use:* Factor analysis of 3 similar indicators of general marijuana use resulted in one interpretable factor (eigenvalue>1), with factor loadings ranging from 0.90-0.96.

*Self esteem:* Factor analysis of 11 self-esteem variables revealed 2 interpretable factors (eigenvalues >1) for self esteem. The factor loadings of each of the variables (see Table 1. For variable details) allowed for self-esteem to be separated out into two separate constructs. These two constructs were labelled: 1) “How I view myself” and 2) “How others view me”. Four self-esteem variables (“I am good looking”, “I am lucky”, “I am good at games”, and “Peers ask me to do things with them”) were dropped from analyses due to factor loadings all <0.50.

*Anger:* Factor analysis of 6 variables (see Table 1.) which appeared to be face-valid indicators of anger found one interpretable factor (eigenvalue >1), with all variable factor loadings ranging between 0.54-0.88.

*Depressed mood:* Factor analysis of the 7 variables associated with low or depressed mood yielded one interpretable factor (eigenvalue >1), and all variables (see table 1.) were retained as all were found to show factor loadings exceeding 0.68-0.86.

*Violent behavior:* Factor analysis was conducted on 4 items that appeared to be face valid indicators of violent behavior, and revealed 1 interpretable factors (eigenvalues >1). All 4 of these items (see Table 1) appeared to load cleanly onto this individual factor, with factor loadings ranging from 0.990-0.997.

## **Risk factors**

The study hypotheses necessitated the compiling of variables into risk factors across the domains of Individual, Family, Peer, School, and Community Risk. While some of these variables overlap with those included in the scales for hypothesis 2, several additional variables and alternative coding options were unique to hypothesis 3 as well. They are detailed by domain the in subsequent sections.

### *Individual risk factors*

Risk factors comprising the individual domain include the aforementioned areas of violence, victimization, depression, anger, self-esteem, marijuana and alcohol use, as well as school misbehavior (ever flunked out, been kicked out, skipped, or been suspended from school), quality of grades (very good, good, not too good, or poor), quality as a student (very good, good, not too good, or poor), history of being arrested (yes/no, as well as number of times), and history of committing some other serious crime (yes/no, as well as number of times). A number of variables in this study changed during the last wave of data collection (2009-2013), so that the available response options included “Number of times”, i.e. Never/1-2times/3-5 times/6+ times. To increase cohesion across variables, the data from this wave were recoded to dichotomous variables which matched years 1993-2006. Any answer more than “Never” were combined and coded as “Yes”, and all “Never” responses were coded as “No”.

*Violence:* A number of items in this dataset include history with violence and victimization, both experienced and perpetrated. These include lifetime experience of sexual assault, intimidation with weapons, being robbed, and being beaten up (see Appendix A). These questions are phrased as “Have you ever...” statements, which include: “been beaten by parents/siblings/friends/ someone else your own age/someone else”, “been scared with a



[weapon]" (knife, club, chain, or gun), "been hurt with a weapon", "been sexually assaulted", and "been robbed". Similarly, a cumulative measure assessing perpetration of victimizing behavior included similarly-worded variables; also phrased as "Have you ever..." statements, including: "beaten someone up", "hurt someone with a club, chain, knife, or gun", "used force to get money or things from someone", "robbed someone of money or property", or "robbed someone".

*Depressive symptomatology:* The survey included 7 items described above, which act as face valid indicators of depressive symptomatology. These items included: 1) I feel low, 2) I am unhappy, 3) I am lonely, 4) I feel bad, 5) I feel sad, 6) I am lonesome, and 7) I am depressed. All 7 items provided response options of: "A lot", "Some", "Not much", and "No". Similar scales compile questions assessing self-esteem (e.g. "I am proud of myself", "I like myself"), and anger (e.g. "I get mad", "I am a hothead"). Similar to the scale of depression, all of these scales utilize the same response options of "A lot", "Some", "Not much", and "No". All variables were recoded with into dichotomous options in which 0=Does not endorse risk, and 1=Endorses risk. The cutoff scores for risk are detailed in Table 2.

*Alcohol and marijuana use:* Marijuana and alcohol use were assessed through their frequency of use in the last 12 months, frequency of use in the last month, and self-identified user level (non-user, very light, light, moderate, heavy, or very heavy. Given the ages of the adolescents involved in the study, individuals were categorized as "at risk" if they endorsed any level of alcohol or marijuana use greater than zero, or self-described their user level as anything higher than "non-user".

### *Family risk factors*

This domain includes items assessing both family characteristics and individual perceptions of family behavior (see Table 3). Students were asked to rank their family's investment in their school performance over four questions which asked, "How much does your family care if: you skipped school/you got a bad grade/you didn't do your homework/you quit school". Possible response options for each item included "a lot", "some", "not much", "not at all". These were recoded as dichotomous variables, with an answer of "not much" or "not at all" on any of these four items indicating a lack of care (recoded as "Endorses risk"), and any answer of "A lot" or "Some" indicating family care (recoded as "Does not endorse risk"). Three questions assessed overall family care: 1) "How much does your family care about you?" 2) "How much do you care about your family" and 3) "How much does your family care what you do?". Respondents were asked about their family's attitudes towards substance use through five questions in which participants identify if their family would care if they smoked cigarettes, got drunk, used inhalants, used marijuana, or used other drugs. For each of these items, answers of "no" or "not at all" were coded as "Endorses risk", while responses of "A lot" or "Some" did not endorse risk.

Additionally, participants were asked to identify if their family members fight with each other, and if they argue with each other. These items also provided response options of "a lot", "some", "not much", "not at all". For data analysis, these two items will be categorized as "at risk" if participants responded "a lot" for both questions. Responses of "some", "not much", or "not at all" for one or both will indicate a participant is not at risk. Furthermore, participants will be categorized as at-risk if they endorse using alcohol at home with their parent's knowledge within the past 12 months. Questions assessing the overall makeup of the participant's household

will indicate an individual is at risk if they endorse one or both of their parents living outside of the household.

#### *Peer risk factors*

Peer risk was assessed through a number of variables characterizing the participant's friends. Friend's school performance, school behavior, attitudes towards school, gang involvement, and substance use were reported on likert-type scale responses, which were recoded into dichotomous variables in which 0=Does not endorse risk and 1=Endorses Risk (see Table 4). Responses of "Yes" for friends having ever flunked out, been kicked out, dropped out, or been suspended were all classified as at risk. Peer school performance is ascertained through participant's characterization of their friends' grades, and of their friends as students in general. Responses of "not too good" or "poor" were determined to endorse risk for these variables; "very good" or "good" did not endorse risk. Finally, participants perceptions of their friend's feelings towards school are classified as "at risk" if participants responded "no" or "not much" to questions asking if their friends like school, like their teachers, or think school is fun.

Peer substance use is classified as a risk factor if participants respond "most of them" or "all of them" to questions measuring the number of their friends who use substances, including marijuana, cocaine, inhalants, downers, and alcohol. Additionally, responses of "Very often" to questions assessing how often their friends have asked them to use each of those same substances constituted being at risk. Furthermore, if participants identified the number ("none", "One or two", "Some of them", or "Most of them") of their friends who get drunk once in a while as "Most of them", and/or the number of their friends who get drunk every weekend as either "Some of them" or "Most of them", this will also constitute peer risk.

#### *School risk factors*

Questions assessing school risk ask participant's feelings about school and their perceptions of other student's attitudes. All variables with response options on a likert-type scale are recoded into dichotomous variables in which 0=Does not endorse risk and 1=Endorses Risk (see Table 5). Participant's feelings towards school are classified as "at risk" if they responded "Not much" and "No" to any of the five statements: "Do you feel safe at school," "My teachers like me," "I like my teachers," "School is fun," or "I like school." Out of seven possible school-sponsored activities (e.g. music, sports, student government), participants were coded as at risk if they did not endorse any involvement in any activities.

#### *Community risk factors*

Finally, variables assessing community-level risk ask if students feel safe where they live and if "there are things for kids to do" in their community. Both variables were recoded so that responses of "Not much" or "No" indicated risk, and responses of "A lot" or "Some". Additionally, participants were asked about their involvement in activities available outside of their school (e.g. sports, scouts, church groups), and were coded as at risk if they did not endorse any involvement in any activities.

#### *Crime and delinquency, substance use, and victimization*

In order to assess hypothesis 4, cumulative indices of three constructs were created from 69 identified substance use variables, 5 victimization variables, and 11 criminal behavior/delinquency variables. For substance use, this included self-reported user level (Non-user, Very light, Light, Moderate, Heavy, Very Heavy User), lifetime use, and past year use (None, 1-2, 3-9, 10-19, 20-49, 50+) of the following substances: alcohol, marijuana, amphetamines, cocaine, crack, LSD, amyl- ethyl- or butyl-nitrates, other psychedelics, PCP, heroin, other narcotics, and methamphetamines. Additionally, this index included questions

assessing substance related behaviors, including ever using a needle to take cocaine, methamphetamines, heroine or other drugs (Yes/No), mixing two different drugs and/or mixing drugs with alcohol, and drinking alcohol or using marijuana when alone. This past substance use index yielded an individual total score ranging from 0-202.

Perpetration of victimization was comprised of five items, including “Have you ever...” questions, including “beaten someone up”, “hurt someone with a weapon”, “used force to get money or things”, “Robbed someone of money or property”, and “robbed someone”. When added together, this created a perpetration index with a possible individual score ranging from 0-5.

Criminal and delinquent behavior included the variables from the aforementioned perpetration index, while also including ever scaring someone with a weapon, defacing or marking property, stealing a car, being arrested, slashing tires, or committing another serious crime. The total criminal and delinquent behavior index had a possible individual score ranging from 0-11.

## Chapter 3

### Results

#### Descriptive statistics

See Table 6 for complete descriptive statistics. The final sample resulted in a slight female majority (50.82%), with a mean age of 14.83 years and mean grade of approximately 9th ( $M=9.08$ ). The Southwest and Northern Plains represented the largest regions, at 33.19% and 32.16% respectively. The majority (87.37%) of participants do not report having ever been in a gang.

*Hypothesis 1.* First, it was hypothesized that self-reported gang involvement (as opposed to gang activity as identified by law-enforcement) will have increased from 1993-2013 among American Indian adolescents. This is represented in the dataset by the question “Have you ever been in a gang?”, which was recoded into a dichotomous variable. The response options were recoded so that the response options “Used to be in a gang, but not now” and “In a gang now” were combined into “Has ever been in a gang”. Response options “I will never join a gang”, “I will join a gang later”, and “Not a member of a gang, but hang out with a gang” were combined to “Has never been in a gang”. Frequencies for each of these new response options were calculated and converted into percentages of the proportion each frequency represented based on the total number of observations for that time point (see Table 7).

To assess the relationship between time (as measured by the 17 possible time points between 1993-2013) and self-reported lifetime gang membership, point-biserial correlation was utilized and showed a small positive correlation between time and gang membership. However, this correlation was not significant,  $r(12,482) = 0.003$ ,  $p = 0.714$ .

Logistic regression was then utilized to corroborate the correlational analyses and further

examine the relationship between time and gang membership. Results of the logistic regression found a small positive relationship between time and gang membership, with a non-significant odds ratio of 1.002 ( $p > .05$ ). This study explored whether an additional indicator of gang affiliation, “How many of your friends are in gang?”, might be associated with time. This variable was similarly analyzed in its relation to time utilizing ordered logistic regression. Results of this analysis showed that there was a small but significant effect, such that there as a 1.01 increase in the log odds of endorsing a higher level of friends in a gang for each unit increase in year.

The wide variability and the manner in which the communities were sampled meant that the size of samples within the communities varied greatly. The four largest communities by sample size were therefore identified for additional analyses. They were identified in this study by their community number as assigned in the dataset; Communities 11, 47, 48, and 90 (see Table 8). These four communities accounted for approximately 40% of the overall sample ( $n=5806$ ). Each of these communities had a sample size of at least 450 participants, in addition to having been sampled at least once in all three waves of data collection (1993-2000, 2001-2005, and 2009-2013) to allow for an examination of the effects of time on gang involvement.

The same logistic regression analyses which were conducted on the full sample were utilized for each of these four communities. Analysis of Community 11 showed a negative relationship with time, with a 0.066 decrease in log odds ( $p = .012$ ) of gang membership with every 1 unit increase in time. By contrast, Community 48 found a significant positive relationship with time, with an .031 increase in log odds of gang membership with each unit increase in time ( $p = .01$ ). However, neither Community 47 nor Community 90 showed a statistically significant relationship with time.

Overall results did not support hypothesis 1. A consistent pattern of growth or decline in gang membership over the observed period of time could not be identified across the sample as a whole. While analyses of the largest communities within the sample showed more discernible trends, with different communities experiencing either a positive (Community 48) or negative (Community 11) trend, no clear patterns of growth emerged.

*Hypothesis 2.* The second hypothesis posited that increases in self-reported gang involvement over the early period of this 20-year span would be associated with later increases in substance use, mood disturbances, and experiences of victimization and violence community-wide. Even though a consistent pattern of growth or decline was unable to be established in hypothesis 1, the following analyses attempted to utilize ANOVAs to examine the extent of the interactive relationship between each of the aforementioned constructs, gang involvement, and time.

Alcohol use: Results of the ANOVA revealed a significant interaction between Time and Gang Membership on Alcohol Use,  $F(16, 12425) = 1.89, p = 0.017$  (see Figure 2). The interaction indicated that the magnitude of difference between gang and non-gang members varied significantly depending on time point, but there was no clear pattern of increased or decreased differences over time. There was a significant main effect for Gang Membership, such that individuals who reported ever being in a gang reported significantly greater alcohol use ( $M = .499; SD = 1.114$ ) compared to those reporting having never been in a gang ( $M = -.071; SD = .849; t = -19.48 (1845.45), p = <0.001$ ).

Marijuana use: Results of the ANOVA found a significant interaction between Time and Gang Membership on Marijuana Use,  $F(16, 12423) = 2.75, p = 0.000$  (see Figure 3). The interaction effect was similar to the one found for alcohol use. There was a significant main



effect for Gang Membership, such that individuals who reported ever being in a gang reported significantly greater marijuana use ( $M = 0.639$ ;  $SD = 1.067$ ), as compared with those who reported having never been in a gang ( $M = -.0990$ ;  $SD = .882$ ),  $t = -26.141$ ,  $p = 0.000$ .

Self-esteem: Results of the ANOVA did not find a significant interaction between Time and Gang Membership on the Self-Esteem factor labelled "How others see me",  $F(16, 12188) = 1.39$ ,  $p = 0.137$  (see Figure 4). The main effect of Gang Membership on this factor of Self-Esteem was not significant ( $t = 0.413$ ,  $p = 0.680$ ) (see Figure 5). Similarly, the interaction between Time and Gang Membership on the Self-Esteem factor labelled "How I see myself" was not significant,  $F(16, 12272) = 1.53$ ,  $p = 0.079$ . However, the main effect of Gang Membership was significant. Those who reported any lifetime gang membership were found to endorse a significantly higher score on this scale of self-esteem ( $M = .14$ ;  $SD = .89$ ), than those individuals who have never been in a gang ( $M = -.03$ ;  $SD = .76$ ),  $t = -7.20$ ,  $p < 0.01$ . Both scales of self-esteem are reverse coded wherein higher scores indicate worse self-esteem (see Table 1).

Anger: Results of the ANOVA did not reveal a significant interaction between Time and Gang Membership on Anger,  $F(16, 12257) = 1.21$ ,  $p = 0.247$  (see Figure 6). There was a significant main effect for Gang Membership, such that those who had never been in a gang reported significantly higher scores on the anger scale ( $M = .048$ ;  $SD = .764$ ), than those who had ever been in a gang ( $M = -.311$ ;  $SD = .831$ ),  $t = 16.084$ ,  $p = 0.000$ . The anger scale is reverse coded so that higher scores indicate less anger (see Table 1).

Depressed mood: Results of the ANOVA revealed a significant interaction effect between Time and Gang Membership on Depressed Mood,  $F(16, 12252) = 1.72$ ,  $p = 0.036$  (see Figure 7). The magnitude of difference in depressed mood between gang and non-gang members varied significantly depending on time point. There was a significant main effect for Gang

Membership, such that individuals who reported never being in a gang reported significantly less depressed mood ( $M = .029$ ;  $SD = .800$ ), compared to those who reported having ever been in a gang ( $M = -.171$ ;  $SD = .876$ ),  $t = 8.47$ ,  $p = 0.000$ . The depressed mood scale is reverse coded so that lower scores indicate a more depressed mood (see Table 1).

Violent behavior: Results of the ANOVA revealed a significant interaction between Time and Gang Membership on Violent Behavior,  $F(12, 9413) = 2.56$ ,  $p = 0.002$ , meaning the magnitude of difference between gang members and non-gang members in reported violent behaviors varied significantly depending on time (see Figure 8), but not in a consistent pattern. However, while violent behavior did show a significant negative correlation with time ( $r = -0.077$ ,  $p = 0.000$ ), it was not significantly correlated with gang membership ( $r = -0.000$ ;  $p = 0.998$ ), and overall mean violent behavior scores did not differ significantly between gang members ( $M = .065$ ;  $SD = 1.07$ ) and non-gang members ( $M = .039$ ;  $SD = .961$ ),  $t = -0.917$ ,  $p > .05$ .

Victimization: Results of the ANOVA did not reveal a significant interaction between Time and Gang Membership on reported Victimization,  $F(16, 12057) = 0.68$ ,  $p = 0.816$  (see Figure 9). Victimization was found to have a significant positive correlation with both time ( $r = 0.060$ ,  $p = 0.00$ ) and gang membership ( $r = 0.255$ ,  $p = 0.000$ ). There was a significant main effect for Gang Membership, such that individuals who reported having never been in a gang reported significantly less victimization ( $M = .128$ ;  $SD = .197$ ) than those who had ever been in a gang ( $M = .233$ ;  $SD = .275$ );  $t = 22.730$ ,  $p = 0.000$ .

In general, significant interactions between time, gang membership, and scale scores were found for alcohol use, marijuana, violent behavior and depressed mood only. Gang members were consistently found to be “worse off” (i.e., endorsing higher scores of negative

constructs and/or lower scores of positive ones) than those who have never been in a gang for alcohol use, marijuana use, self-esteem (“How I view myself”), anger, depressed mood, and victimization. In the overall sample, examination of the figures suggested that scores of violent behavior decreased over time, as did scores of alcohol use. Conversely, scores of victimization, depressed mood, and marijuana use appeared to increase over time.

*Hypothesis 3.* The third hypothesis tested was that American Indian teens who have been in a gang will endorse a greater number of cumulative risk factors across the domains of individual, family, peers, school, and community than those who have not been in a gang. The previously considered data analytic plan for case-controlled matching with non-parametric tests was discarded given the complexity of the data as it currently exists and to allow for the maximum number of observations possible (further discussion is warranted before embarking on case-controlled matching analyses). Instead, an index of risk for each of the five domains was created, then Pearson’s chi-square tests were utilized to compare gang vs. non-gang members on each domain. The five indices of risk were then added together to create a cumulative risk index, and scores for gang members and non-members were compared utilizing a Welch’s t-test.

**Individual risk:** The individual risk variables (see Measures for additional details) were recoded into dichotomous variables and then added into a cumulative index with total possible scores ranging from 0-48. Individual risk scores equal to zero were coded as “No Risk” and scores  $\geq 1$  were coded as “Risk”. Pearson’s chi<sup>2</sup> test of independence found that endorsed individual risk level differed significantly by gang membership;  $\chi^2(1, N = 5785) = 23.23, p = 0.000$ . There is a significant association between ever being in a gang and being at individual risk, and we are able to reject the null hypothesis that the two are independent from each other.

**Family risk:** The family risk variables (see Measures for additional details) were recoded

into dichotomous variables and added into one cumulative index, through which participants could potentially obtain a score ranging from 0-15. Family risk scores equal to zero were coded as “No Risk” and scores  $\geq 1$  were coded as “Risk”. Pearson’s  $\chi^2$  test of independence found that the amount of endorsed family risk differed significantly by gang membership ( $\chi^2(1, N = 8,608) = 73.59, p = 0.000$ ) such that there is a significant association between being in a gang and being at risk in the family domain. We are therefore able to reject the null hypothesis that the two are independent from each other.

Peer risk: Peer risk variables (see Measures for additional details) were recoded into dichotomous variables and added into one cumulative index, resulting in possible scores ranging from 0-17. Peer risk scores equal to zero were coded as “No Risk” and scores  $\geq 1$  were coded as “Risk”. Pearson’s  $\chi^2$  test of independence found that the amount of endorsed family risk differed significantly by gang membership;  $\chi^2(1, N = 10,946) = 90.95, p = 0.000$ . There is a significant association between ever being in a gang and being at risk in the peer domain, and we are able to reject the null hypothesis that the two are independent from each other.

School risk: School risk variables (see Measures for additional details) were recoded into dichotomous variables and added into one cumulative index with possible school risk scores ranging between 0-7. School risk scores equal to zero were coded as “No Risk” and scores  $\geq 1$  were coded as “Risk”. Results of the Pearson’s  $\chi^2$  showed school risk significantly differing by gang membership;  $\chi^2(1, N = 9,110) = 117.76, p = 0.000$ . There is a significant association between ever being in a gang and being at individual risk, and we are able to reject the null hypothesis that the two are independent from each other.

Community risk: Community risk variables were compiled into one index with a possible community risk score ranging between 0-3. Community risk scores equal to zero were coded as

“No Risk” and scores  $\geq 1$  were coded as “Risk”. Pearson’s  $\chi^2$  test of independence found that community risk significantly differing by gang membership;  $\chi^2(1, N = 9,333) = 4.65, p = 0.03$ . There is a significant association between ever being in a gang and being at individual risk, and we are able to reject the null hypothesis that the two are independent from each other.

Cumulative risk: To measure cumulative risk, the five aforementioned indices of individual risk, family risk, school risk, peer risk, and community risk were further recoded. For each index, endorsing any risk factors (e.g., risk score  $\geq 1$ ) within the domain resulted in categorizing the respondent as “at risk” in that domain; any scores of 0 put them “not at risk”. Each of these domain scores was added to create an index of cumulative risk (i.e., Individual Risk + Family Risk + Peer Risk + School Risk + Community Risk = Cumulative Risk), with a possible cumulative risk score ranging from 0-5. The cumulative risk scores for those who have been in a gang were compared to those who have never been in a gang utilizing a Welch’s t-test, which found that the mean cumulative score for those who report any lifetime gang membership ( $M = 4.26; SD = .829$ ) was significantly higher than those who have never been in a gang ( $M = 3.742; SD = 1.14$ ),  $t = -12.645, p = 0.000$ .

Overall, these results supported hypothesis 3, and suggest that gang members endorse more cumulative risk across developmental domains than non-gang members.

*Hypothesis 4:* Finally, it was hypothesized that self-report substance use, crime and delinquency, and perpetration of victimization would significantly increase as level of gang affiliation increased (i.e., never in a gang, used to be in a gang, will join a gang later, not a member but hangs out with a gang, in a gang now). This hypothesis was examined utilizing a one-way ANOVA to test each of the relationships between the aforementioned constructs and the categorical measure of gang involvement. Each construct was compiled into a cumulative

index, with higher scores indicated higher levels of each construct (see Measures for additional details). The categorical measure of gang involvement allowed for five response options to the question “Have you ever been in a gang?”. Overall mean scores for each of the indices by gang level can be found in Table 9.

First, results showed a significant effect of reported substance use on gang-involvement level for the five groups,  $F(4, 6938) = 276.13, p = 0.000$ . Tukey’s HSD post-hoc comparison showed that substance use was significantly higher ( $p = .000$ ) for the “In a gang now” group compared to all other groups. Conversely, substance use was significantly lower ( $p = .000$ ) in the “Will never join a gang” group compared with all other groups. However, the other three groups did not differ significantly ( $p > .05$ ) from each other (see Table 9 for additional details).

Similarly, a significant effect of crime/delinquency on level of gang involvement also emerged;  $F(4, 7866) = 793.04, p = 0.000$  (see Table 9 for additional details). A similar pattern emerged between groups, with Tukey’s HSD post-hoc comparison showing that those who report that they will never join a gang reported significantly lower criminal and delinquent behavior than all other groups ( $p = .000$ ), and those who report that they are currently in a gang report significantly higher criminal and delinquent behavior than all other groups ( $p = .000$ ). Additionally, individuals who report that they are “not a member of a gang, but hang out with a gang” reported significantly lower criminal and delinquent behavior ( $M = 3.43; SD = 2.51$ ) than those who reported that they “used to be in a gang, but not now” ( $M = 4.02; SD = 2.87$ );  $t = -4.99, p = 0.000$ . No significant difference was found between those who reported that they “will join a gang later”, and either of the groups “Used to be in a gang, but not now” or “Not a member of a gang, but hang out with a gang” ( $p > .05$ ).

Analysis of perpetration of victimizing behavior more specifically also found a

significant effect of reported perpetration on level of gang involvement,  $F(4, 7984) = 562.59$ ,  $p = 0.000$  (see Table 9 for additional details). Of the five levels of gang involvement, Tukey's HSD post-hoc comparison again showed that those who endorsed "I will never join a gang" reported significantly lower ( $p < .05$ ) perpetration as compared to all other groups, and those who endorsed that they are "In a gang now" endorsed significantly higher ( $p < .05$ ) perpetration than all other groups. Those who endorsed that they are "Not a member of a gang, but hang out with a gang" reported significantly lower perpetration ( $M = 1.63$ ;  $SD = 1.34$ ) than both those who "will join a gang later" ( $M = 2.04$ ;  $SD = 1.60$ ;  $t = -3.58$ ,  $p = .003$ ), as well as those who report that they "used to be in a gang, but not now" ( $M = 1.95$ ;  $SD = 1.45$ ;  $t = -4.97$ ,  $p = .000$ ).

Overall, results appear to support hypothesis 4, with the greatest differences in substance use, crime/delinquency, and perpetration consistently emerging between those who either entirely endorse or entirely refute gang membership, which set the outer limit of the range of scores. The other three options of past membership, future intent of membership, and gang-affiliated friends then differ to varying degrees within this range.

## **Chapter 4**

### **Discussion**

Gang activity has become a growing issue in the United States, with its influence expanding beyond major metropolitan areas to more non-traditional communities over the past 30-40 years (Federal Bureau of Investigations, 2011; Simon, Ritter, & Mahendra, 2013; Tita & Ridgeway, 2007). This can specifically be seen in the perceived growth or increase in American Indian gangs in the United States over the past several decades (Eckholm, 2009; Freng, Davis, McCord, & Roussell, 2012; Hailer & Hart, 1999). While gang membership can often be a focus of public concern due to perceived risks to community and surrounding environment, gang involvement has been found to carry significant and pervasive risks for the individual (Bjerregaard, 2010; Coid et al., 2013; Decker et al., 2013; Fox, 2017; Gordon et al., 2004; Taylor et al., 2007).

Despite the perceived increases in American Indian gang activity, the amount of available empirical research into these dynamics appears to be relatively scant, at times only focused on specific geographically limited regions or communities. However, when paired with reports and data from journalists, stakeholders, and criminal justice organization, this contributes to a general perception of continued growth among American Indian gangs in the United States. Utilizing data from adolescents in reservation communities throughout the continental United States, the present study sought to examine the data on these trends, along with different dimensions of potential gang presence among American Indian teenagers in reservation communities over a 20 year interval.

The first study aim was to examine the extent to which self-reported gang involvement increased over the 20 year span surveyed. Multiple analyses were conducted which inspected



self-report of the individual's level of gang membership, as well as the amount of gang affiliated peers reported. These analyses were unable to find a consistent pattern of either growth or decline across the sample, as a whole, over time. Further examination of specific communities within the data set that accounted for large portions of the population yielded similarly inconsistent patterns, with select communities showing trends towards an increase, others trended towards a decline, and still others did not evidence any change. Overall, a consistent linear relationship between gang involvement and time did not emerge among this sample. These results suggest that, while gang membership numbers have potentially changed at different periods and within different communities between 1993-2013, the data does not support the idea of a generalizable increase in gang involvement among American Indian reservation communities throughout the United States.

This inconsistent pattern may be the result of the unique attributes of many reservation communities, including their size and scale, the amount of consistent ingress and egress, and the geographic realities of their surrounding environment. Leverso and Matsueda (2019) point out that organizational elements of a gang influence the length of gang membership, and that perceived legitimacy, control of turf and social respect, and overall group organization contribute to longer self-reported membership. However, in reservation communities, it is not uncommon to find relatively smaller populations spread across a large area, and with a level of ethnic homogeneity all of which distinguish reservations from large urban centers in which gang research is often conducted. The single largest reservation in the United States is the Navajo Nation, which is spread across a land mass larger than the state of New Jersey while being home to a population that is approximately less than 4% of its size (Navajo Nation Tourism Department, 2019). Nearby, the Hopi Reservation is one of the few that is uniquely ensconced on

all sides entirely within the larger Navajo Nation, while the Havasupai Reservation is set apart by being within Grand Canyon National Park. Still other reservations face different demands, such as the Augustine Band of Cahuilla Indians located in Coachella, CA approximately 130 miles outside of Los Angeles, but with a population of roughly only 11 people (Norris, Vines, & Hoeffel, 2012).

These vast community differences suggest that what is therefore perceived as constant growth of gang membership might then be attributed to periodic “ebbs and flows”, in which smaller gangs cyclically form, maintain for a short period, and then taper off rapidly without the growth, competition, and perceived results that manage to fuel growth in urban gangs. It is also possible that the growth exists in American Indian gangs outside of reservations, and that the gang activity is therefore primarily found among those who have moved or who maintain seasonal or inconsistent residence on a reservation, and therefore would be unlikely to be captured in this dataset.

Due to the previously discussed ill-defined construct of gangs among the general public and law enforcement, it is also possible that changes in behavior or cultural expression may be perceived as increased gang membership. With increased access to pop-culture portrayals of gangs, as well as migration of gang culture via exposure to prison (Hailer & Hart, 1999; Theriot & Parke, 2008), it is possible that increasing numbers of adolescents and young adults are modelling what community members would perceive to be “gang behavior” (e.g. music, dress, adopting labels such as Crips or Bloods), without actual consistent increases in actively joining a gang.

The second goal of this study was to examine whether patterns of gang involvement over time were related to other areas of clinical concern among the adolescents in these communities,

including substance use, mood disturbance, and experiences of violence and victimization. Similar to the outcomes found in hypothesis 1, results of hypothesis 2 testing did not tend to yield significant linear relationships between the constructs in question and time. However, those individuals who identified as having ever been in a gang at any point consistently self-reported experiencing more problems than their non-gang affiliated peers; scoring themselves as more depressed, angrier, engaging in heavier alcohol and marijuana use, experiencing more victimization, and holding themselves in lower regard. Surprisingly, when gang membership was stratified in this dichotomous way (e.g., never in a gang, ever in a gang) violent behavior was not found to differ significantly between the two groups.

These outcomes both illustrate the appeal that gang membership might hold for these students--camaraderie, social support, sense of identity-- as well as raise a number of red flags. Many American Indian communities in the United States tend to already face large public health disparities when compared to the general population (Sarche & Spicer, 2008). Yet given these already unfortunate disparities setting American Indian youths apart from teens in other ethnic group for increased risk of negative health outcomes, American Indian teens who are also identifying as current or former gang members appear to be doing even worse. The social and emotional functioning of these teens may therefore benefit more from gang intervention implemented from a public health/mental health framework, rather than intervention focused on criminalization and incarceration. This is particularly true given the similarities in violent behavior--seemingly the construct most likely to elicit police intervention--between the two groups of gang versus non-gang members.

This study also aimed to examine how cumulative framework of risk for gang involvement might fit within American Indian communities. A cumulative framework suggests

that a breadth of risk factors across multiple domains (i.e., individual, peer, family, school, community) puts individuals at higher risk for gang membership than risk in any one (or very few) domains (i.e., having a very risky school environment alone). Results of the analysis of the data supported the hypothesis that American Indian gang members (present or former) would endorse more cumulative risk factors across these developmental domains than their non-gang affiliated peers. This suggests that risk for gang membership among American Indian teens operates similarly to other groups of gang-affiliated and delinquent peers, for whom research has also supported accumulated risk models (Howell & Egley, 2005; Thornberry et al., 2003).

These patterns of risk factors are significant because, as was previously discussed for hypothesis 2 above, there is a risk that the general public may become preoccupied with how gang members will impact their surrounding environment and community. However, analysis of this data consistently paints a picture of adolescents who are facing social, emotional, and environmental impairments which are setting them apart from their peers. The pervasive nature of risk factors for gang membership would seem to illustrate a need for equally expansive and far-reaching interventions, as it appears likely that any adolescent who reports being in a gang will also be at risk for negative health and life outcomes across different developmental domains.

Finally, this study examined the relationship between level or category of gang involvement and what could broadly be categorized as maladaptive behaviors: crime, delinquency, substance use, and perpetration of victimizing behavior. While five “levels” of gang involvement (i.e., never in a gang, used to be in a gang, will join a gang later, not a member but hangs out with a gang, in a gang now) were assessed, the largest differences were found between individuals self-identified as definitively in a gang (“In a gang now”) and those who entirely refuted membership (“I will never join a gang”). Across crime/delinquency, substance

use, and perpetration, these two groups consistently set the outer limits of the range of scores. Whereas the other three categories, which might be best described as loose gang affiliation (used to be in a gang, will join a gang later, not a member but hangs out with a gang), were found to consistently fall between the two outer ranges. In examining these five categories by grouping them into three “levels” of gang involvement- never in a gang, loose gang affiliation, active member in a gang--we see that all of these externalizing, antisocial, maladaptive behaviors increase as level of involvement increases.

This relates back to the aforementioned disconnect between public perception of growth of American Indian gangs and the actual inconsistent patterns in membership found in the data. One could speculate that the increased severity in overt and external behaviors, particularly criminal behaviors, might contribute to a perception that any growth in gang membership is intolerably severe or damaging. If even a small percentage increase in reported membership is accompanied by a proportional increase in crime, violence, and substance use, it is understandable that concern and alarm from community members would follow.

### **Limitations and clinical implications**

This study has many identifiable strengths, including the breadth and scope of the data collected, the wide variety of communities surveyed, the number of data collection points over a twenty-year span, and its ability to provide unique insight into challenging and potentially stigmatizing experiences facing these vulnerable adolescents. However, there are several limitations which must be considered for their potential impact on any outcomes as well. First, this study only included adolescents who attended and were present in school to complete the survey. Given the associations with delinquency and school risk factors, future research should examine similar questions among adolescents with limited school attendance or who are outside

of the school system altogether, as well as adults outside of this study's age range. Second, given that this study utilized secondary data analysis of a large national dataset, analyses and scale construction were limited by the variables included at the time of the original data collection. Additional research utilizing a wider variety of validated measures of mood, risk factors, and substance use, as well as the addition of other psychological constructs not included in the original dataset (e.g. family and community demographics, cognitive and achievement testing, physical health outcomes) would be beneficial creating a more accurate and dynamic picture of this population. While this study did have the added strength of measurement at a wide number of time points spread across twenty years, it is still inherently limited to a specific window, and therefore patterns of growth or decline may not have been captured within the period surveyed. Finally, data collection for this study occurred on or near reservation communities. However, reservations account for less than 25% of the total American Indian population (U.S. Department of HHS Office of Minority Health, 2018). Future research which includes data for individuals living in non-reservation rural, suburban, and urban settings would be beneficial for accounting for this variety. However, the size and scope of this study allowed for a more robust examination of American Indian gang involvement than has previously been seen, therefore also allowing for the diversity and within-group heterogeneity that exists within the American Indian population in the United States.

Despite these limitations, this study highlights a need for more research into gang dynamics among American Indian populations, as well as for a potential reframing from a criminal justice problem to a public health problem. In communities already challenged by physical and mental health disparities far beyond what is found in the general population, these American Indian adolescents who are reporting that they are, or have been, in a gang may be

uniquely primed for what seems to be a myriad of negative outcomes ranging from poor grades and low self-esteem, to violence, victimization, and criminal behavior. Given the vulnerable position they are in, it remains imperative that accurate reporting of trends in growth or decline exist, so that effective intervention and support can be implemented. If public perception of increased growth in gang membership is accurate, then increased police intervention would appear to be a next logical step. However, the results of this study do not support this perception, therefore increasing police intervention and thus the likelihood of contact with the criminal justice system would seem to be an improper and ineffective response. However, study results might lend credence to the need for interventions which address vulnerabilities and risk factors across developmental domains, and which address the significant internal challenges these adolescents face (low mood, anger, poor self image) as well as the external ones (violent/criminal peers, risky home environments, access to substances).

## **Conclusions**

American Indian gang membership appears to both grow and decline at different time points across reservation communities in the United States. A number of characteristics of those individuals who do endorse gang membership may contribute to the perceived, but ultimately unsupported, rise in membership over time. Lifetime gang membership among American Indian adolescents was found to be associated with depressed mood, increased anger, experiences of victimization, marijuana and alcohol use. Increasing levels of gang affiliation or involvement (e.g., never in a gang, loosely affiliated with a gang, presently in a gang) were also associated with similarly increasing levels of behaviors which would cause police, community stakeholders, and outsiders logical concern: criminal behavior and delinquency, violence, and substance use. Therefore, what is being characterized as a generalizable increase in American Indian gang

involvement might possibly be better explained by a number of other changes or factors. These may include changing perceptions of the associated behaviors, inaccurate labelling of gang members by outside parties, or growth in specific reservation communities or geographic regions in the United States which are then generalized without accounting for within-group diversity. Or perhaps some other yet-to-be examined factor which might be influencing the dynamics of gang life among American Indians. Future research to fill some of these gaps in the literature would be beneficial. This study points to the need for this research to incorporate not just a traditional criminal justice perspective on the implications gang membership, but a psychological and public health lens. This could be applied to the number of pressing, pervasive characteristics and risk factors gang-affiliated adolescents on reservations appear to be dealing with above and beyond the challenges faced by their peers.



## References

- Ball, R. A., & Curry, G. D. (1995). The logic of definition in criminology: purposes and methods for defining gangs. *Criminology*, 33. Retrieved from <http://heinonline.org/HOL/Page?handle=hein.journals/crim33&id=235&div=17&collection=journals>
- Barnes, J. C., Beaver, K. M., & Miller, J. M. (2010). Estimating the effect of gang membership on nonviolent and violent delinquency: a counterfactual analysis. *Aggressive Behavior*, 36(6), 437–51. <https://doi.org/10.1002/ab.20359>
- Beauvais, F. (1992). Drug use of friends: A comparison of reservation and non-reservation Indian youth. *American Indian and Alaska Native Mental Health Research*, 5(1), 43–50. <https://doi.org/http://dx.doi.org/10.5820/aian.0501.1992.43>
- Beauvais, F., & Swaim, R. (2015). *Drug Use Among Young Indians: Epidemiology and Prediction 1993-2006 and 2009-2013*. Ann Arbor, MI. <https://doi.org/https://doi.org/10.3886/ICPSR35062.v3>
- Bjerregaard, B. (2010). Gang Membership and Drug Involvement. *Crime & Delinquency*, 56(1), 3–34. <https://doi.org/10.1177/0011128707307217>
- Carson, D. C., & Vecchio, J. M. (2015). Leaving the Gang: A Review and Thoughts on Future Research. In S. H. Decker & D. C. Pyrooz (Eds.), *The Handbook of Gangs* (1st ed., pp. 257–275). West Sussex, UK: John Wiley & Sons, Inc. Retrieved from <http://www.wiley.com/WileyCDA/WileyTitle/productCd-1118726871.html>
- Coid, J. W., Ullrich, S., Keers, R., Bebbington, P., DeStavola, B. L., Kallis, C., ... Donnelly, P. (2013). Gang Membership, Violence, and Psychiatric Morbidity. *American Journal of Psychiatry*, 170(9), 985–993. <https://doi.org/10.1176/appi.ajp.2013.12091188>
- Conchas, G. Q., & Vigil, J. D. (2013). Gang formation revisited: A human development

framework to inform balanced anti-gang strategies. *Journal of Gang Research*, 20(4), 35–52.

Decker, S. H., Melde, C., & Pyrooz, D. C. (2013). What do we know about gangs and gang members and where do we go from here? *Justice Quarterly*, 30(3), 369–402.

<https://doi.org/10.1080/07418825.2012.732101>

Donnermeyer, J. F., Edwards, R. W., Chavez, E. L., & Beauvais, F. (2000). Involvement of American Indian Youth in Gangs. *Free Inquiry in Creative Sociology*, 28(1), 73–80.

Retrieved from <http://ojs.library.okstate.edu/osu/index.php/FICS/article/view/6993>

Eckholm, E. (2009). Gang Violence Grows on an Indian Reservation. Retrieved from

[http://www.episcopalmaine.net/images/diocese/documents/gang\\_violence\\_grows\\_on\\_an\\_indian\\_reservation.pdf](http://www.episcopalmaine.net/images/diocese/documents/gang_violence_grows_on_an_indian_reservation.pdf)

Egley, A., & Major, A. K. (2004). Highlights of the 2002 National Youth Gang Survey. OJDP Fact Sheet No. 1. *US Department of Justice*. Retrieved from

<https://eric.ed.gov/?id=ED483334>

Esbensen, F.-A., Winfree, L. T., He, N., & Taylor, T. J. (2001). Youth gangs and definitional issues: when is a gang a gang, and why does it matter? *Crime & Delinquency*, 47(1), 105–130. <https://doi.org/10.1177/0011128701047001005>

Federal Bureau of Investigations. (2011). 2011 National Gang Threat Assessment — FBI.

Retrieved December 4, 2017, from <https://www.fbi.gov/stats-services/publications/2011-national-gang-threat-assessment>

Fox, K. A. (2017). Gangs, gender, and violent victimization. *Victims & Offenders*, 12(1), 43–70.

<https://doi.org/10.1080/15564886.2014.989557>

Freiburger, T. L., & Burke, A. S. (2011). Status offenders in the juvenile court: the effects of

- gender, race, and ethnicity on the adjudication decision. *Youth Violence and Juvenile Justice*, 9(4), 352–365. <https://doi.org/10.1177/1541204011399933>
- French, L. (2005). Law enforcement in Indian country. *Criminal Justice Studies*, 18(1), 69–80. <https://doi.org/10.1080/14786010500071154>
- Freng, A., Davis, T., McCord, K., & Roussell, A. (2012). The New American Gang? Gangs in Indian Country. *Journal of Contemporary Criminal Justice*, 28(4), 446–464. <https://doi.org/10.1177/1043986212458193>
- Garrett, M. T., & Pichette, E. F. (2000). Red as an apple: Native American acculturation and counseling with or without reservation. *Journal of Counseling & Development*, 78(1), 3–13. <https://doi.org/10.1002/j.1556-6676.2000.tb02554.x>
- Goodman, P. (2008). “It’s Just Black, White, or Hispanic”: An observational study of racializing moves in California’s segregated prison reception centers. *Law & Society Review*, 42(4), 735–770. <https://doi.org/10.1111/j.1540-5893.2008.00357.x>
- Gordon, R. A., Lahey, B. B., Kawai, E., Loeber, R., Stouthamer-Loeber, M., & Farrington, D. P. (2004). Antisocial behavior and youth gang membership: selection and socialization. *Criminology*, 42(1), 55–88. <https://doi.org/10.1111/j.1745-9125.2004.tb00513.x>
- Hailer, J. ., & Hart, C. B. (1999). A new breed of warrior: The emergence of American Indian youth gangs. *Journal of Gang Research*. *Journal of Gang Research*, 7(1), 23–33.
- Hautala, D. S., J. Sittner, K., & Whitbeck, L. B. (2016). Prospective childhood risk factors for gang involvement among North American indigenous adolescents. *Youth Violence and Juvenile Justice*, 14(4), 390–410. <https://doi.org/10.1177/1541204015585173>
- Howell, J. C., & Egley, A. (2005). Moving Risk Factors into Developmental Theories of Gang Membership. *Youth Violence and Juvenile Justice*, 3(4), 334–354.

<https://doi.org/10.1177/1541204005278679>

Knox, G. W. (2006). *An Introduction to Gangs* (6th ed.). Chicago: New Chicago School Press.

Machamer, A. M., & Gruber, E. (1998). Secondary school, family, and educational risk: comparing American Indian adolescents and their peers. *The Journal of Educational Research*, 91(6), 357–369. <https://doi.org/10.1080/00220679809597565>

Martin, F. A. (2013). *Rez realities: Exploring the perceptions of crime and justice among tribal police officers in Indian Country*. Old Dominion University. Retrieved from <https://search.proquest.com/openview/c3a48dd7b554466acc3f5e42554f6dee/1?pq-origsite=gscholar&cbl=18750&diss=y>

Moore, J. W. (1990). Gangs, drugs, and violence. *Drugs and Violence: Causes, Correlates, and Consequences*, 103, 160–175. Retrieved from <http://files.eric.ed.gov/fulltext/ED341000.pdf#page=170>

Napoli, M., Marsiglia, F. F., & Kulis, S. (2003). Sense of belonging in school as a protective factor against drug abuse among Native American urban adolescents. *Journal of Social Work Practice in the Addictions*, 3(2), 25–41. [https://doi.org/10.1300/J160v03n02\\_03](https://doi.org/10.1300/J160v03n02_03)

Norris, T., Vines, P.L., Hoeffel, E.M. (2012). The American Indian and Alaska Native Population [2010 Census Brief]. Retrieved from <https://www.census.gov/history/pdf/c2010br-10.pdf>

Perry, B. (2006). Nobody trusts them! Under- and over-policing Native American Communities. *Critical Criminology*, 14(4), 411–444. <https://doi.org/10.1007/s10612-006-9007-z>

Sarche, M., & Spicer, P. (2008). Poverty and health disparities for American Indian and Alaska Native children. *Annals of the New York Academy of Sciences*, 1136(1), 126-136.

Sharkey, J. D., Shekhtmeyster, Z., Chavez-Lopez, L., Norris, E., & Sass, L. (2011). The

protective influence of gangs: Can schools compensate?

<https://doi.org/10.1016/j.avb.2010.11.001>

Simon, T. R., Ritter, N. M., & Mahendra, R. R. (2013). Changing course : preventing gang membership. Retrieved from <https://stacks.cdc.gov/view/cdc/20706>

Snipp, C. M. (2005). American Indian and Alaska Native Children: Results from the 2000 Census. Retrieved from <http://www.prb.org/pdf05/AmericanIndianAlaskaChildren.pdf>

Taylor, T. J., Peterson, D., Esbensen, F.-A., & Freng, A. (2007). Gang membership as a risk factor for adolescent violent victimization. *Journal of Research in Crime and Delinquency*, 44(4), 351–380. <https://doi.org/10.1177/0022427807305845>

Theriot, M. T., & Parke, B. S. (2008). Native American Youth Gangs. *Journal of Ethnicity in Criminal Justice*, 5(4), 83–97. [https://doi.org/10.1300/J222v05n04\\_04](https://doi.org/10.1300/J222v05n04_04)

Tita, G., & Ridgeway, G. (2007). The Impact of Gang Formation on Local Patterns of Crime. *Journal of Research in Crime and Delinquency*, 44(2), 208–237. <https://doi.org/10.1177/0022427806298356>

U.S. Department of HHS Office of Minority Health (2018). Profile: American Indian/Alaska Native. Retrieved from <https://minorityhealth.hhs.gov/omh/browse.aspx?vl=3&lvlid=62>

Vigil, J. D. (2003). Urban violence and street gangs. *Annual Review of Anthropology*, 32(1), 225–242. <https://doi.org/10.1146/annurev.anthro.32.061002.093426>

Western, B., Kling, J. R., & Weiman, D. F. (2001). The Labor Market Consequences of Incarceration. *Crime & Delinquency*, 47(3), 410–427. <https://doi.org/10.1177/0011128701047003007>

Whitbeck, L. B., Hoyt, D. R., Chen, X., & Stubben, J. D. (2002). Predictors of gang involvement among American Indian adolescents. *Journal of Gang Research*, 10(1), 11–26.

## Appendices





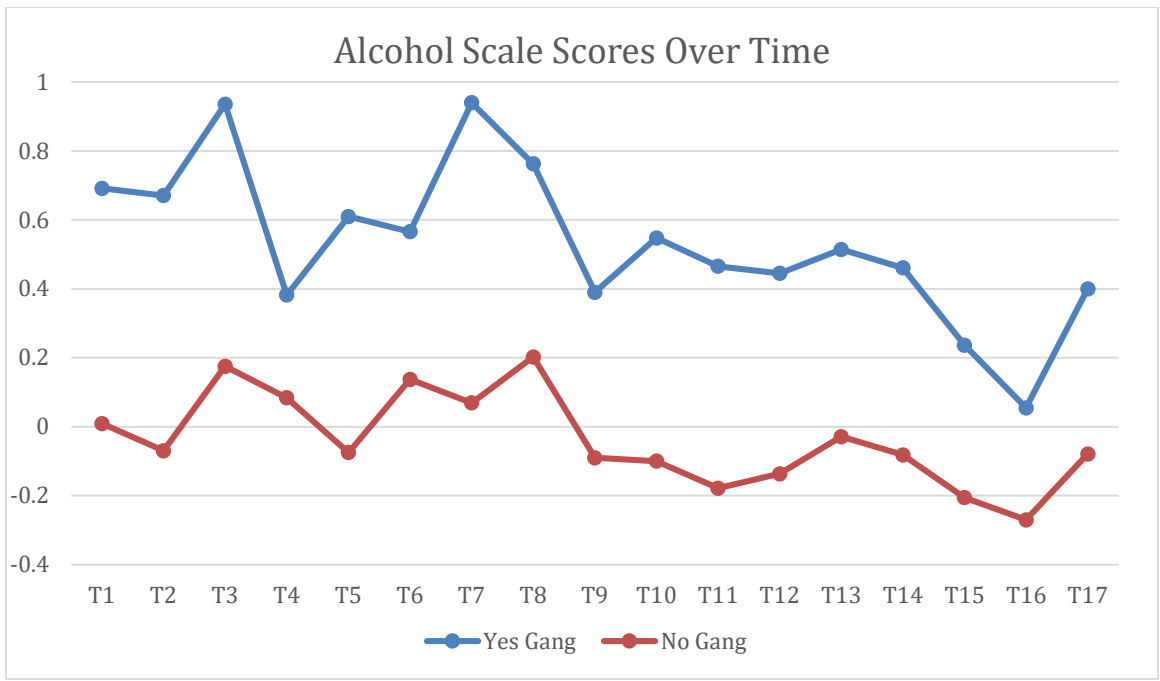


Figure 2. Alcohol Scale Scores Over Time

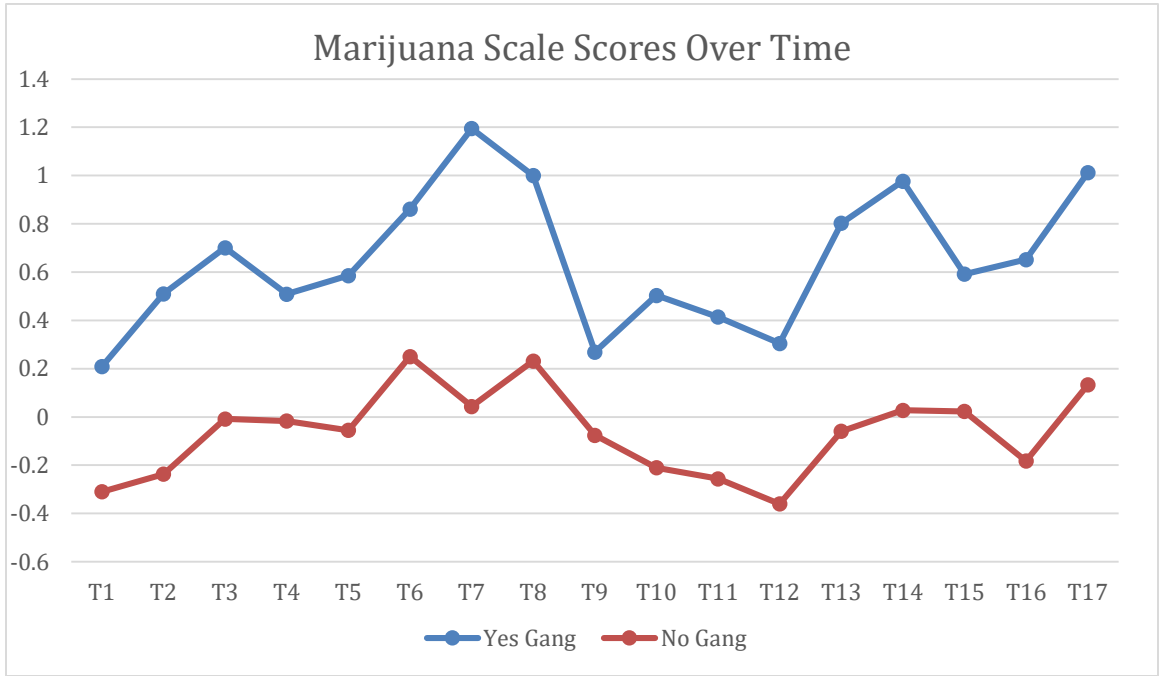


Figure 3. Marijuana Scale Scores Over Time

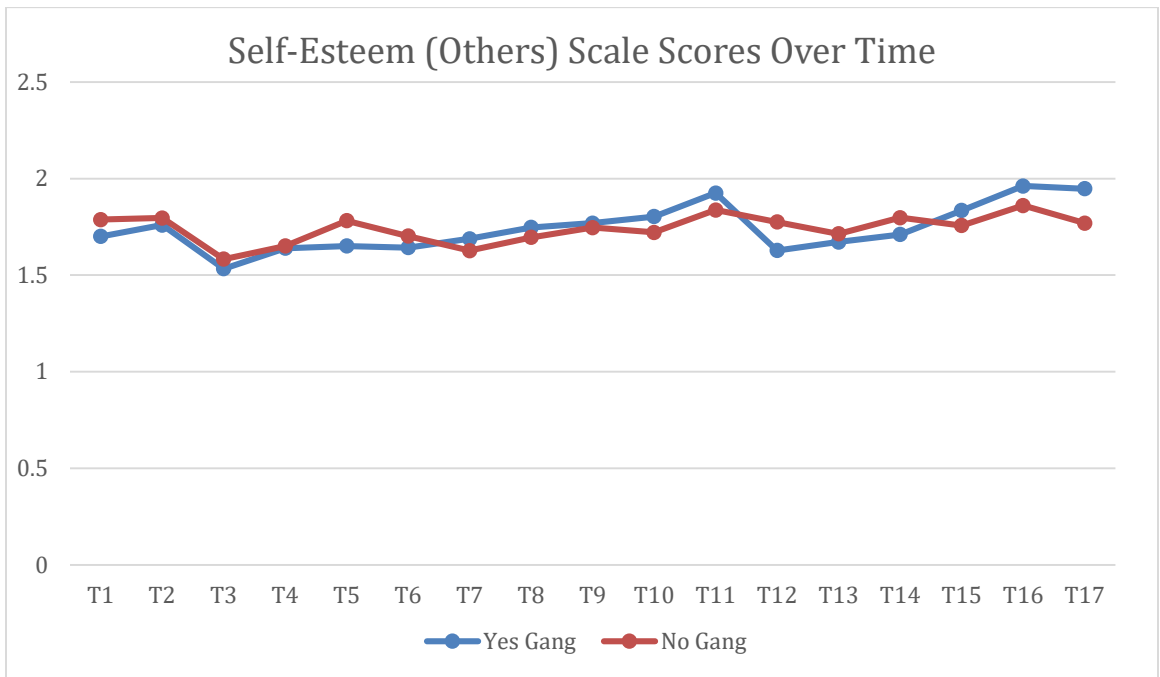


Figure 4. Self Esteem (“How others see me”) Over Time

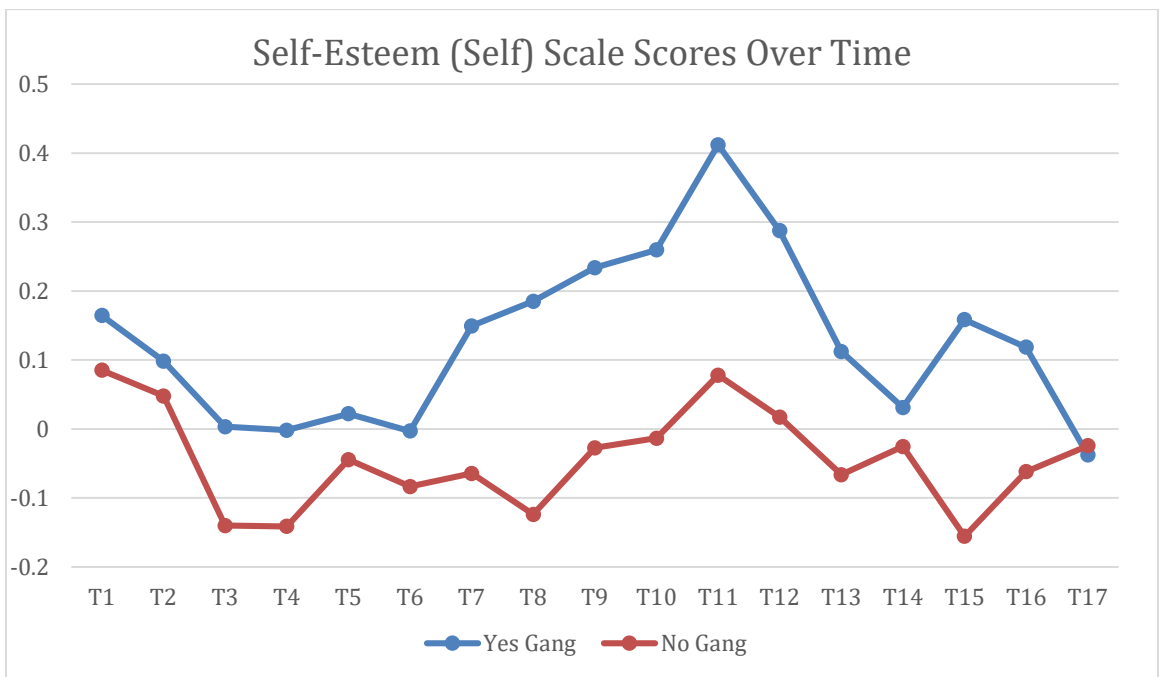


Figure 5. Self Esteem (“How I see myself”) Over Time

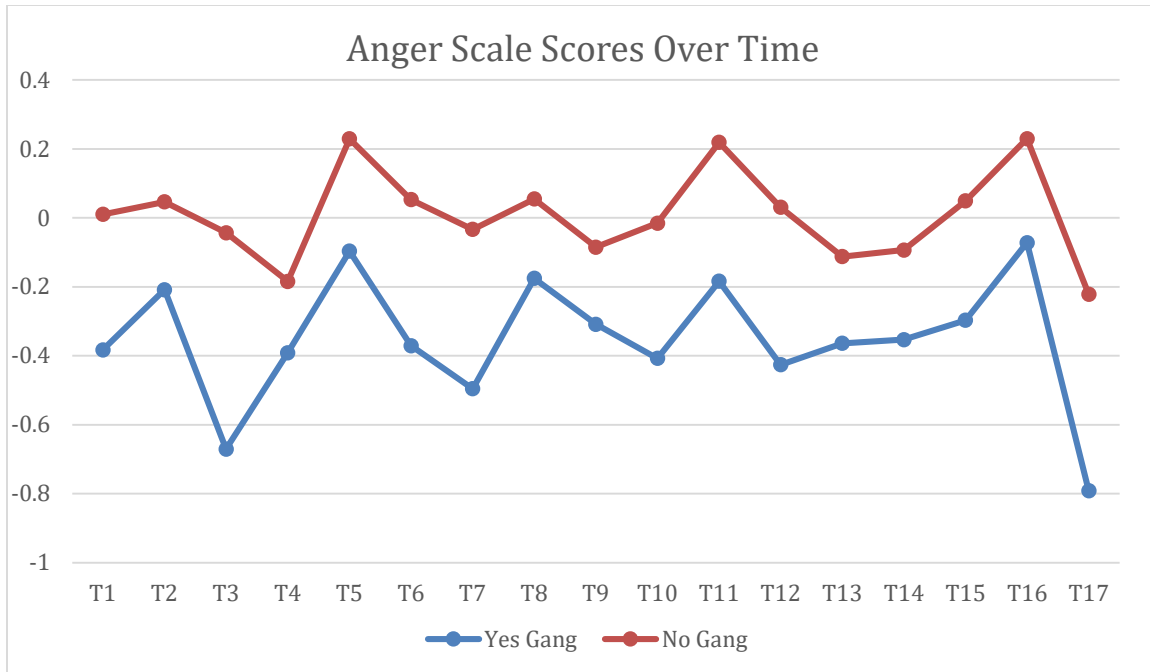


Figure 6. Anger Scores Over Time

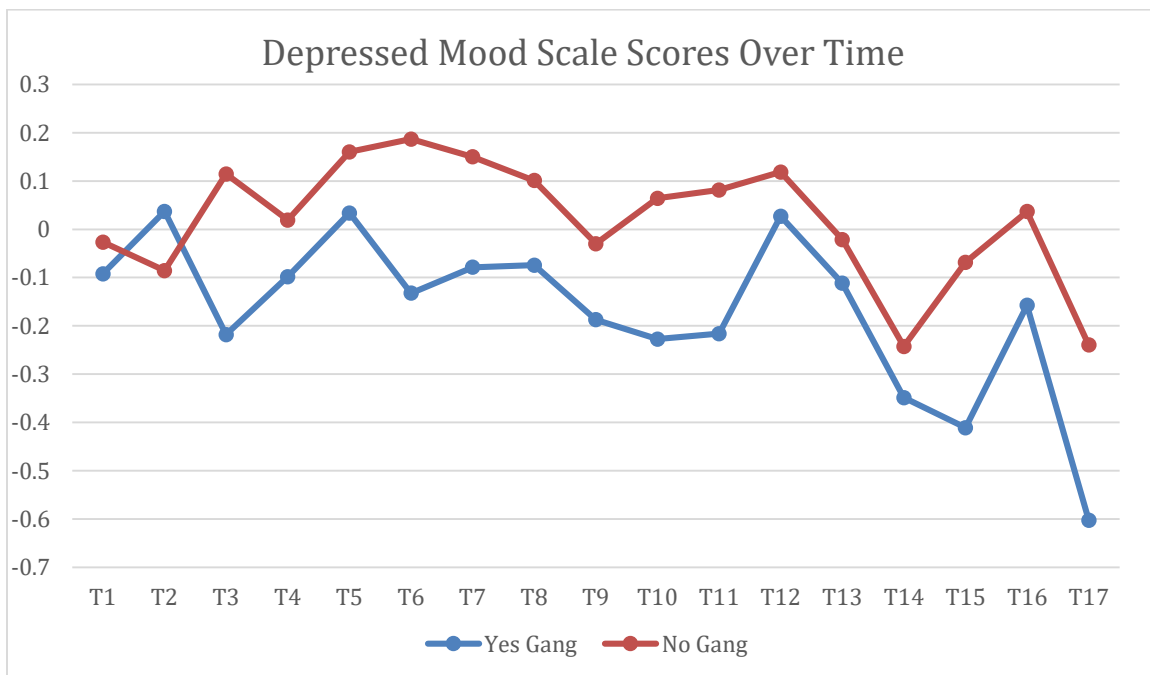


Figure 7. Depressed Mood Scores Over Time

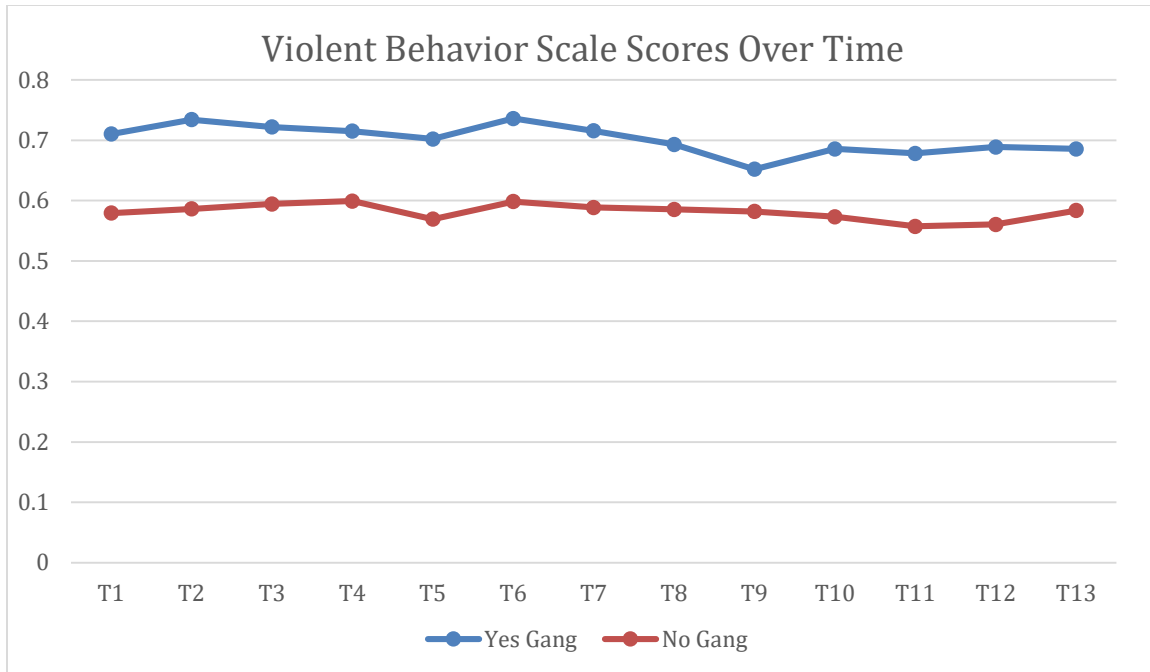


Figure 8. Violent Behavior Scores Over Time

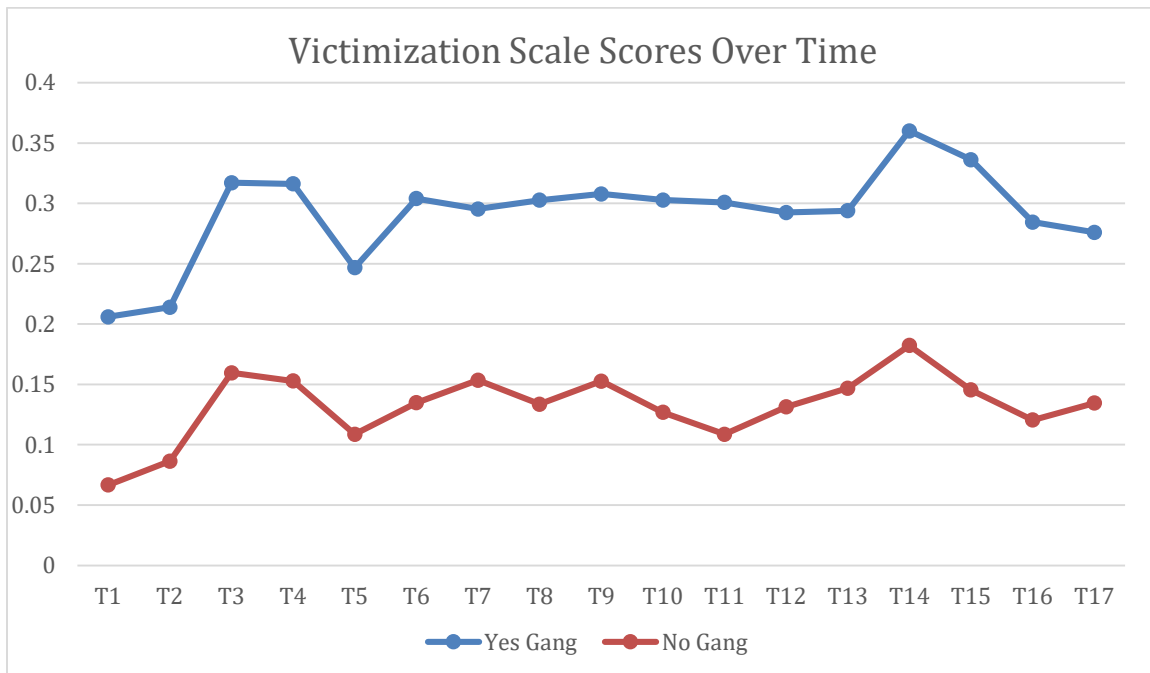


Figure 9. Victimization Scores Over Time

## Appendix B. Tables

Table 1. Hypothesis 2 Scales

Scale	Variable Text	Response Options	Cronbach's alpha
Alcohol Use	Number of times had alcohol (last 12 months)	None, 1-2, 3-9, 10-19, 20-49, 50+	$\alpha=1.927$
	Number of times gotten drunk (last 12 months)	None, 1-2, 3-9, 10-19, 20-49, 50+	
	Number of times had alcohol (last month)	None, 1-2, 3-9, 10-19, 20+	
	Number of times gotten drunk (last month)	None, 1-2, 3-9, 10-19, 20+	
Marijuana Use	Frequency used marijuana (last 12 months)	None, 1-2, 3-9, 10-19, 20-49, 50+	$\alpha=0.9413$
	Frequency used marijuana (last month)	None, 1-2, 3-9, 10-19, 20+, Several times every day	
	In using marijuana, are you a...?	Non-user, Very light use, Light User, Moderate user, Heavy User, Very heavy user	
Self-Esteem (How others see me)	Peers like me	A lot, Some, Not much, No	$\alpha= 0.8572$
	People like me	A lot, Some, Not much, No	
	Peers like to be with me	A lot, Some, Not much, No	
Self Esteem (How I see myself)	I am proud of myself	A lot, Some, Not much, No	$\alpha=0.7901$
	I am able to do things well	A lot, Some, Not much, No	
	I like myself	A lot, Some, Not much, No	
	I am smart	A lot, Some, Not much, No	
Anger	I am quick tempered	A lot, Some, Not much, No	$\alpha=0.8720$
	I get mad	A lot, Some, Not much, No	
	I feel like hitting someone	A lot, Some, Not much, No	
	I lost my temper	A lot, Some, Not much, No	
	I am hotheaded	A lot, Some, Not much, No	
	I get angry	A lot, Some, Not much, No	
Depressed Mood	I feel low	A lot, Some, Not much, No	$\alpha=0.9139$
	I am unhappy	A lot, Some, Not much, No	
	I am lonely	A lot, Some, Not much, No	
	I feel bad	A lot, Some, Not much, No	
	I feel sad	A lot, Some, Not much, No	
	I am lonesome	A lot, Some, Not much, No	

Table 1. Continued

Scale	Variable Text	Response Options	Cronbach's alpha
	I am depressed	A lot, Some, Not much, No	
Violent Behavior (perpetrated)			$\alpha=0.9974$
	Have you ever beaten up someone?	No/Yes	
	Have you ever scared someone with a weapon?	No/Yes	
	Have you ever taken a gun to school?	No/Yes	
	Have you ever hurt someone with a weapon?	No/Yes	
Victimization (experienced)			0.8812
	Have you ever been beaten by parents	No/Yes	
	Have you ever been beaten by siblings	No/Yes	
	Have you ever been beaten by friends	No/Yes	
	Have you ever been beaten beaten by someone else	No/Yes	
	Have you ever been hurt with a weapon	No/Yes	
	Have you ever been sexually assaulted	No/Yes	
	Have you ever been robbed	No/Yes	

Note: Scales of depression, anger, and both self-esteem constructs are scored in such a way that higher scores indicate a lower endorsement of a construct--e.g. the lowest possible score for "Depressed Mood" would indicate that the participant answered "A lot" in response to all of the questions.

Table 2. Recoding of non-dichotomous variables into risk and not at risk in the Individual domain

Variable	Response options	
	<u>Does not endorse risk</u>	<u>Endorses Risk</u>
Peers like to be with me	“A lot”, “Some”, “Not much”	“No”
People like me	“A lot”, “Some”, “Not much”	“No”
Peers like me	“A lot”, “Some”, “Not much”	“No”
I am depressed	“Not much”, “No”	“A lot”, “Some”
I am lonesome	“Not much”, “No”	“A lot”, “Some”
I am lonely	“Not much”, “No”	“A lot”, “Some”
I get angry	“Not much”, “No”	“A lot”, “Some”
I am a hothead	“Not much”, “No”	“A lot”, “Some”
I lose my temper	“Not much”, “No”	“A lot”, “Some”
I feel like hitting someone	“Not much”, “No”	“A lot”, “Some”
I get mad	“Not much”, “No”	“A lot”, “Some”
I am quick tempered	“Not much”, “No”	“A lot”, “Some”
I am smart	“A lot”, “Some”	“Not much”, “No”
I like myself	“A lot”, “Some”	“Not much”, “No”
I am able to do things well	“A lot”, “Some”	“Not much”, “No”
I am proud of myself	“A lot”, “Some”	“Not much”, “No”
I feel sad	“Some”, “Not much”, “No”	“A lot”
I feel bad	“Some”, “Not much”, “No”	“A lot”
I am unhappy	“Some”, “Not much”, “No”	“A lot”

Table 3. Recoding of non-dichotomous variables into risk and not at risk in the Family domain

Variable	Response Option	
	<u>0=Does not endorse risk</u>	<u>1=Endorses Risk</u>
How much would your family care if you smoked cigarettes?	A lot, Some	Not much, Not at all
How much would your family care if you got drunk?	A lot, Some	Not much, Not at all
How much would your family care if you “sniffed” something like glue or gas?	A lot, Some	Not much, Not at all
How much would your family care if you used marijuana	A lot, Some	Not much, Not at all
How much would your family care if you used other drugs?	A lot, Some	Not much, Not at all
How much does your family care about you?	A lot, Some	Not much, Not at all
How much do you care about your family?	A lot, Some	Not much, Not at all
How much does your family care what you do?	A lot, Some	Not much, No
Family goes to school events	A lot, Some	Not much, No
Family knows what is going on at school	A lot, Some	Not much, No
Do the members of your family fight with each other?	Some, Not much, No	A lot
Do the members of your family argue with each other?	Some, Not much, No	A lot
Does your mother/father live at home with you?	Yes	No, Father died, Mother died
Last 12 months-Used alcohol at home & parents knew	Never	1-2 times, 3-9 times, 10+ times



Table 4. Recoding of non-dichotomous variables into risk and not at risk in the Peer domain

Variable	Response Options	
	<u>0=Does not endorse risk</u>	<u>1=Endorses Risk</u>
How many of your friends get drunk once in a while?	None, One or two, Some of them	Most of them
How many of your friends get drunk almost every weekend?	None, One or two	Some of them, Most of them
Do your friends like school?	A lot, Some	Not much, No
Do your friends like their teachers?	A lot, Some	Not much, No
Do your friends think school is fun?	A lot, Some	Not much, No
What kind of grades do your friends get?	Very good, Good	Not too good, Poor
What kind of students are your friends?	Very good, Good	Not too good, Poor
How many of your friends get drunk?	None, A few	Most of them, All of them
How many of your friends use marijuana?	None, A few	Most of them, All of them
How many of your friends use cocaine?	None, A few	Most of them, All of them
How many of your friends sniff glue or gas, etc?	None, A few	Most of them, All of them
How many of your friends use downers?	None, A few	Most of them, All of them
How many of your friends are in a gang?	None of them, A few of them	Most of them, All of them
Have any of your friends ever flunked a year in school	No	Yes
Have any of your friends ever been kicked out of school	No	Yes

Table 4. Continued

Variable	Response Options	
Have any of your friends ever been suspended from school	No	Yes
Have any of our friends ever dropped out	No	Yes

Table 5. Recoding of non-dichotomous variables into risk and not at risk in the School domain

Variable	Response Options	
	<u>0=Does not endorse risk</u>	<u>1=Endorses Risk</u>
I like school	A lot, Some	Not much, No
My teachers like me	A lot, Some	Not much, No
I like my teachers	A lot, Some	Not much, No
School is fun	A lot, Some	Not much, No
Do you feel safe at school?	A lot, Some	Not much, No

Table 6. Descriptive Statistics

<u>Grouping Label</u>	<u>Frequency or Percent</u>
<u>Number of participants</u>	n=14,457
<u>Gender</u>	
Female	7251(50.82%)
Male	7017(49.18%)
<u>Geographic Regions</u>	
Northwest	386(2.69%)
Northern Plains	4650(32.16%)
Upper Great Lakes	1099(7.60%)
Northeast	147(1.02%)
Southeast+Texas	618(4.27%)
Southwest	4799(33.19%)
Oklahoma	2755(19.06%)
<u>Number of Communities</u>	n=118
<u>Has ever been in a gang</u>	1576(12.63%)
<u>Never has been in a gang</u>	10,906(87.37%)
<u>Race/Ethnicity</u>	<u>Mean or percent (SD)</u>
American Indian only	13,017(90.04)
Two or more races	1440(9.97)
<u>Age</u>	14.83(1.73)
<u>Grade</u>	9.08(1.62)

Table 7. Frequency of lifetime self-reported gang membership (dichotomous) by year

Year/Cohort	Has never been/is not in a gang	Has been/is in a gang	Total
1993-1994	722 (85.04)	127 (14.96)	849 (100)
1994-1995	398 (86.15)	64 (13.85)	462 (100)
1995-1996	261 (88.18)	35 (11.82)	296 (100)
1996-1997	303 (88.01)	41 (11.92)	344 (100)
1997-1998	1029 (90.18)	112 (9.81)	1141 (100)
1998-1999	520 (81.50)	118 (18.50)	638 (100)
1999-2000	332 (90.71)	34 (9.29)	366 (100)
2000-2001	544 (89.77)	62 (10.23)	606 (100)
2001-2002	360 (86.54)	56 (13.46)	416 (100)
2002-2003	1113 (88.05)	151 (11.95)	1264 (100)
2003-2004	1331 (90.73)	136 (9.27)	1467 (100)
2004-2005	595 (91.82)	53 (8.18)	648 (100)
2005-2006	810 (84.20)	152 (15.80)	962 (100)
2009-2010	757 (81.14)	176 (18.86)	933 (100)
2010-2011	654 (87.2)	96 (12.8)	750 (100)
2011-2012	921 (87.55)	131 (12.45)	1052 (100)
2012-2013	256 (88.89)	32 (11.11)	288 (100)
Total	10906 (87.37)	1576 (12.63)	12,482 (100)

Note: Frequency(Percent)

Table 8. Frequency of gang endorsement in the 4 largest community samples (communities 11, 47, 48, 90)

Year	Comm 11		Comm 47		Comm 48		Comm 90	
	Y Gang	N Gang	Y Gang	N Gang	Y Gang	N Gang	Y Gang	N Gang
93-94					77	304		
95-96	19	149						
97-98			19	62			66	732
99-00					28	220		
00-01	18	228						
03-04							83	780
05-06			21	130	87	328		
09-10			21	91	77	217		
10-11	22	404						
11-12					32	71	69	589
12-13			13	72				
Total chi2	840 (chi <sup>2</sup> (2)=7.01;p=.03)		429 (chi <sup>2</sup> (3)=3.77;p=.29)		1441 (chi <sup>2</sup> (4)=25.39; p=.000)		2319 (chi <sup>2</sup> (2)=2.15; p=.34)	

Note: "Y Gang"= yes gang, indicating the participant endorsed some level of lifetime gang membership. "N Gang"=no gang, indicating the participant did not endorse any lifetime gang membership thus far.

Table 9. Mean Perpetration, Crime/Delinquency, and Substance Use Scores by Gang Level

	Perpetration	Crime/Delinquency	Substance Use
Will never join gang	.67(.93)	1.23(1.68)	35.95(13.08)
Used to be in gang	1.95(1.45)	4.02(2.87)	46.79(17.85)
Will join gang later	2.04(1.60)	3.84(3.04)	49.56(21.94)
Hang out with gang	1.63(1.34)	3.43(2.51)	46.61(17.41)
In a gang now	2.56(1.67)	5.46(3.27)	57.84(27.95)

Note: Mean (SD)

### **Vita**

Lauren Fox received her Bachelor's in Music Performance and her Master's in Clinical Psychological Science from University of Maryland, College Park, and is currently a Ph.D student in Clinical Psychology at University of Tennessee, Knoxville. While at University of Maryland, she previously provided research assistance with Drs. Derek Iwamoto, Aditi Vijay, and Julia Felton, as well as for The Center for Early Childhood Education and Intervention. Current areas of research interest include health disparities facing on adolescents and young adults from marginalized communities, as well as the effects of environmental and peer group influences on substance use, victimization, and violent behavior.