

The Determinants of Child Abuse and Neglect Among American Indians and Alaskan Natives Across States and Over Time: Does Policy Matter?

Linda K. Ketcher

U. S. Bureau of Indian Affairs

Brinck Kerr

University of Arkansas, Fayetteville

Will Miller

University of Illinois, Springfield

Valerie Hunt

University of Arkansas, Fayetteville

Although a great deal of research has been conducted on child abuse in the general population, very little systematic research has been conducted on child abuse among American Indians and Alaskan Natives (AI/AN). In this paper we examine rates of reported AI/AN child abuse from 1993-2003 for the 20 U. S. states with the largest percentages of AI/AN populations. Our pooled time series models indicate that reported rates of AI/AN child abuse are higher in states with relatively high rates of poverty, but we also find that reported rates of AI/AN child abuse are higher in states with anonymous reporting, high evidentiary standards, and Public Law 280 jurisdiction. Future research needs to focus in greater detail on state policy variables in order to determine why states with these characteristics have higher levels of reported AI/AN child abuse.

Introduction

Child abuse and neglect, a pervasive problem in the United States, exists among all racial and ethnic groups (Garbarino and Crouter 1978; Jones and McCurdy 1992; Paxton and Waldfogel 1999; Berger 2004; Slack et al. 2004; Lowe et al. 2005). However, very little scholarly research exists on child abuse and neglect among American Indians/Alaskan Natives (AI/AN). This study seeks to address this deficiency by (1) evaluating differences in AI/AN child abuse rates among states; (2) evaluating trends in these rates in states over time; and (3) identifying the determinants of AI/AN child abuse rates. We examine child abuse rates from 1993 through 2003 for the 20 U. S. states

with the largest percentages of American Indians and Alaskan Natives. Since the passage of the Indian Child Welfare Act of 1978 and the Indian Child Protection and Family Violence and Prevention Act of 1990, AI/AN child abuse and neglect has been receiving more attention by a number of agencies and child welfare advocates. Numerous policies and procedures are in place for reporting and addressing the problem of child abuse; however, analysis of reported incidences of AI/AN child abuse and neglect indicates that rates have not declined significantly and that AI/AN child abuse rates are high relative to those for other ethnic groups (Earle 2000; Earle and Cross 2001).

Human Rights Watch notes that, "Every recognized country in the world, except for the United States and the collapsed state of Somalia, has ratified the Convention on the Rights of the Child, pledging to uphold its protections for children. Today the convention stands as the single most widely ratified treaty in existence" (Human Rights Watch 1999). Children of color in the U. S. (e.g. African American, AI/AN, Hispanics, Asian Americans), once in the child protection system, are often in the system for a considerable length of time and much longer than their white counterparts (Hines et al. 2004). Some scholars strongly assert that children of color in America's public child welfare system experience differential treatment (Fox 2003). Families of color receive fewer services, and thus, have proportionately less income and fewer resources than their white counterparts (Billingsly and Giovannoni 1972; Brittain and Hunt 2004; Hines et al. 2004). Lujan et al. (1989) argue that child abuse and neglect is part of a broader phenomenon of multi-problem families and of the issue of intergenerational perpetuation of a wide range of problems.

We seek to answer the following research questions. Why are child abuse and neglect rates among American Indians/Alaskan Natives higher in some states than in others? How and why do these rates change over time? What policy and demographic factors contribute to child abuse and neglect rates among the general population and among AI/AN? In the sections that follow, we review the literature on child abuse in the general and American Indian/Alaskan Native populations, provide a discussion of our data, hypotheses, and methods, present our univariate and multivariate analyses, and provide a conclusion along with suggestions for future research.

Literature Review and Theory

Studies from the literature on child abuse and neglect typically address demographic (or extra-policy) factors that may affect per capita rates of

abuse, but few studies examine the role of public policy in child abuse and neglect. In this section, we discuss studies of child abuse and neglect in the general population and among American Indians/Alaskan Natives. ***Studies of the General Population.*** Many researchers have studied the determinants of child abuse and neglect among the general population (among others see Finkelhor 1983, 1984; Finkelhor and Baron 1986; Finkelhor, Hotaling, and Yllo 1988; Finkelhor and Jones 2001; Ards 1992; Coulton et al. 1995, 1999; Jones, Finkelhor and Kopiec 2001; Connell-Carrick 2003). Jones, Finkelhor, and Kopiec (2001), as well as other researchers, find that child abuse rates among the general population declined through the 1990s. According to these researchers, the decline is due primarily to caseworker caution. Because of new legal rights for caretakers, increased evidentiary standards needed to substantiate cases, and increasing limitations on the types of cases agencies accept for investigation, caseworkers indicate a hesitancy to report child abuse and neglect without substantial evidence (Jones, Finkelhor, and Kopiec 2001).

A number of empirical studies identify economic and social factors related to child abuse and neglect in the general population (e.g., poverty, unemployment, and median household income) (Fischler 1985; Garbarino and Kostelny 1992; Jones and McCurdy 1992; Drake and Pandey 1996; Besharov 2000; Paxson and Waldfogel 2003; Ozawa et al. 2004; Berger 2005; Lowe et al. 2005; Roditti 2005). Garbarino and Kostelny (1992) find that the rate of child maltreatment in areas of “concentrated poverty and social disorganization” is exceptionally high. Other authors support the argument that child maltreatment is more prevalent in “areas of concentrated poverty” (Pelton 1994; Coulton et al. 1995; Drake and Pandey 1996). Hines et al. (2004), maintain that “there is considerable evidence that cases of child maltreatment have been disproportionately found among low-income and poor families” in areas of concentrated poverty (2004, 513).

According to Melton (2002), despite evidence that poverty and neighborhood breakdown are strongly associated with child maltreatment, those in authority seem comfortable ignoring these concrete and observable facts (Melton and Gardner 2000). Ards (1992) finds that the higher the per capita income in an area or locality, the lower the prevalence of child neglect. Family income may have an impact on several other outcome measures related to child neglect (Berger 2004). For example, welfare parents found to be maltreating their children were clearly poorer than welfare parents who did not. Young and Gately (1988) argue that the high level of frustration and stress associated with material deprivation, unemployment, and female-

headed households leads to maltreatment. Garbarino and Crouter (1978) examined child maltreatment report data in the context of neighborhood and quality of life for families and state that the lack of high school education is a significant factor for neglect, and for reporting of neglect. Similarly, Gil (1970) concluded that individuals with less than a high school education and persons from ethnic minorities often do not report suspected abuse to a child protection agency, but might speak to the parent directly.

In summary, research supports that socioeconomic stressors such as poverty and low income, poor and/or public housing, unemployment, and welfare recipient status are especially strong correlates of child maltreatment (Melton and Berry 1994). Yet it must be acknowledged that the *rates* of child abuse can also be influenced by classification biases at the reporting level (Britton and Hunt 2004). What may be reported as child abuse in a lower income community could result in a referral for treatment and/or no abuse report in a higher income community.

Studies of American Indian and Alaskan Native Child Abuse. Few studies focus on child abuse and neglect issues among AI/AN. Although a number of studies frequently incorporate the AI/AN group into the “other” category, AI/AN are generally only mentioned in passing, thereby obscuring information specific to this population group (Garbarino and Kostelny 1992; Jones and McCurdy 1992; Korbin 2002; Lowe et al. 2005).

Demographic Variables. The literature on child abuse and neglect suggests that a number of determinants may be associated with AI/AN child abuse and neglect including poverty (Fischler 1985; Cross et al. 2000), unemployment (EchoHawk 2001/2002), and low educational attainment (Fischler 1985; Lujan et al. 1989; DeBruyn et al. 1992; Cross et al. 2000). In their study of 53 American Indian children, Lujan et al. (1989) found that the majority of maltreated children experienced both abuse and neglect, that their families experienced alcohol abuse, and that child abuse and neglect is “part of a larger phenomenon of multi-problem families which raises the issue of intergenerational perpetuation of these problems” (1989, 449). Similarly, Robin et al. (1997) in a study of one tribe found that intrafamilial members accounted for 78 percent of reported AI/AN child sexual abuse cases and that females were three times more likely to be sexually abused than were males. In a study of 51 control families and 53 target families, DeBruyn et al (1992) found that alcohol abuse was present in virtually all families that abused and neglected their children. EchoHawk (2001/2002) and EchoHawk and Santiago (2003/2004) found that several factors together

increase the occurrence of child sexual abuse in “Indian Country” and that these factors (e.g. unemployment, poverty, and other family stresses) are greater on Indian reservations.

The paucity of studies on AI/AN child abuse raises an important question. Why has the scholarly community not paid more attention to the problems of AI/AN? This unfortunate status may be due to a number of factors – concentration on reservations, lack of involvement/participation in politics, and/or relatively small numbers in most states (Peterson and Duncan 2001). Also, the racial/ethnic category “other,” which often includes Native Americans, is frequently ignored in empirical research. However, these reasons do not lessen the need for empirical research addressing the critical child abuse and neglect issues affecting this population, a population arguably among the most disadvantaged of any racial/ethnic group.

A series of recent reports address a number of well-being indicators for AI/AN children (Goodluck and Willetto 2000; Goodluck and Willetto 2001; Willetto 2002; Willetto and Goodluck 2003) including children in poverty. Analysis of secondary data (National Center for Health Statistics, U.S. Census Bureau, and the Bureau of Labor Statistics) reveals that for AI/AN children, poverty rates “range from a low 17.6 percent in Alaska to a high of 58 percent in North Dakota” (p. 56). Extreme levels of poverty are known to be prevalent on American Indian reservations and are exacerbated by social and geographic isolation. According to the Bureau of Indian Affairs’ *American Indian Population and Labor Force Report, 2001* the unemployment rate among AI/AN increased from 42 percent in 1999 to 49 percent in 2001. Willetto and Goodluck (2003) found that 46.6 percent of AI/AN children live in families where neither parent has full-time, year round employment. Goodluck and Willetto (2001) state that reservation communities face many challenges:

“Historically, Indian reservations have been, and to a great extent, still remain, the poorest areas in the United States. Extremely high incidences of unemployment, combined with inadequate housing, health care, education . . . have resulted in standards of living and qualities of life at levels comparable to or even below many developing countries” (Goodluck and Willetto 2001, 20).

In sum, research has shown that poverty, unemployment and under employment, low educational attainment, and social and geographic isolation are among the most important socioeconomic and demographic indicators that are associated with child maltreatment. Most research,

however, consists of in-depth case studies on a single tribe or region. Also, the few studies that do exist in the literature are case studies that rely on qualitative methodologies. These case studies provide interesting insights into the problem of child abuse and neglect and can make important contributions to theory building. However, if significant relationships are identified between certain independent variables and child abuse rates, policy makers may be able to use this additional, quantitative information to inform policy design and alternatives. Furthermore, studies of AI/AN child abuse focus exclusively on extra-policy or demographic factors and ignore other types of considerations such as policy factors. In the next section we discuss policy and legal factors (i.e. anonymous reporting, variation in evidentiary standards, and Public Law 280/non-280 state status) that could affect levels of AI/AN child abuse in the U. S.

Policy Variables. *Anonymous Reporting.* Reports of abuse can come from many sources (*Investigation and Prosecution of Child Abuse* 2004). In the U.S., thirty-two states accept child maltreatment reports from anonymous sources and most tribes accept anonymous reports (BIA Social Services Intermediate Training, Volume II 2004). Despite the expectation that this factor could increase rates of reported child abuse and neglect, no studies exist that evaluate the affect of the policy of anonymous reporting on AI/AN child abuse rates or on child abuse rates in the general population.¹

Evidentiary Standards. Courts require a certain level of evidence for disposition, decision-making and substantiation of abuse. Some states have a high standard (i.e. preponderance, material evidence, or clear and convincing) while others have a lower standard (i.e. credible, reasonable, or probable cause) for substantiation of child abuse and neglect (U. S. Department of Health and Human Services, National Study of Child Protection Services Systems and Reform Efforts: Review of State CPS Policy, 2003). No scholarly studies in the literature evaluate the impact of evidentiary standards on reported child abuse and neglect. When parents are questioned by investigators from CPS, they enter the civil dependency court system. In criminal courts, the accused has the right to a jury trial and that jury must be collectively persuaded “beyond a reasonable doubt” that the defendant committed a crime before returning a verdict; however, judges in civil dependency courts use standards of evidence (higher or lower) to decide if allegations of abuse and neglect have value (Foster 1998).

¹ Jones et al. (2001) in a survey of state child protection administrators raise the issue of anonymous reporting; however, they do not test any hypotheses on the relationship between anonymous reporting and rates of abuse.

280 and non-280 States. Essentially, tribal entities are covered by three types of governmental jurisdictions (tribal, state and federal). “Public Law 280 was enacted in the 1950s – a period of termination and assimilation in Indian Country and it must be understood within the context of the time period in which it was enacted. It included (1) the adoption in 1953 of House Concurrent Resolution 108 which established tribal termination as the official federal policy and singled out specific Indian Nations for termination, and (2) implementation of the Bureau of Indian Affairs ‘relocation’ program to encourage Indians to leave the reservations and seek employment in various metropolitan centers” (Melton and Gardner 2000, 252). Public Law 83-280 gave states greater authority over Indian reservations. In particular, this law gave certain states in Indian Country the legislative authority to assume criminal and civil jurisdiction over child protection matters albeit to the detriment of tribal sovereignty (Melton and Gardner 2000). Public Law 280, 67, Stat. 88 (1953) gave civil and criminal jurisdiction of tribes to: California, Minnesota (except Red Lake), Nebraska, Oregon (except Warm Springs), Wisconsin, and Alaska (except Metlakatla) (Canby 1998). Often referred as “280 States,” these states were responsible for all crimes occurring in Indian Country or “control of most civil and criminal proceedings to six specific states in which Indian nations are located” (Earle and Cross 2001, 21). Sometimes called “mandatory states” by policy makers, lawyers, and government officials (Canby 1998), several have returned partial jurisdiction to the federal government. We anticipate that caseworkers in Public Law 280 states might be more vigilant in pursuing suspected cases of reported AI/AN child abuse and neglect than will caseworkers in non-280 states.

In order to address our research questions, our strategy is to identify the determinants of child abuse and neglect in 20 states with relatively large numbers of AI/ ANs and for the years 1993 – 2003. Admittedly, we sacrifice some level of detail and nuance in our study in order to generalize across states and over time. Some of the important non-policy determinants that might be related to variations in child abuse and child neglect are poverty, employment status, income level, and educational attainment. We also add to the mix of conventional, demographic determinants of child abuse three policy variables – anonymous reporting procedures, level of evidentiary standards, and Public Law 280/non-280 state jurisdiction. The next section discusses the data, hypotheses, and methods used in our study.

Data, Hypotheses, and Methods

In this section, we discuss the data collected for this study. The analysis is based on data collected from the National Center on Child Abuse and Neglect (NCCAN) and the U. S. Bureau of the Census. Additionally, we discuss the hypotheses tested in the study, explain how each variable is measured, and present the methods for our univariate and multivariate analyses.

Data from the National Center on Child Abuse and Neglect. Reporting child abuse and neglect is a legislative mandate in each state, and each state has developed requirements for reporting, investigating, and handling child maltreatment referrals. These laws mandate that physicians and other professionals who work with children report suspected child abuse to their state's Child Protective Service (CPS) (Trost 1998; Flaherty 2006). Professionals and groups who are legally required to report suspected child maltreatment include social workers, family therapists (Delaronde et al. 2000; Brown and Strozier 2004; Strozier et al. 2005), medical personnel (Trost 1998; Flaherty 2006), educators, daycare providers, legal, law enforcement or criminal justice personnel, and substitute care providers, including foster parents (U. S. Department of Health and Human Services, National Study of Child Protection Services Systems and Reform Efforts: Review of State CPS Policy 2003).

After 1987, information on reported child abuse/neglect was collected by the National Committee to Prevent Child Abuse pursuant to Public Law 93-247, (CAPTA) 1974, which "established mandatory reporting guidelines.... and procedures for all fifty states" (Earle 2000). Since 1990 the NCCAN has collected and published detailed state-level information on reports of child maltreatment and on numbers of substantiated and indicated victims (Paxson and Waldfogel 1999, 240). Paxson and Waldfogel (1999) assert that the most common type of maltreatment report to Child Protection Services (CPT) is neglect (58 percent) followed by physical and sexual abuse (22 and 20 percent, respectively). Some states include medical or educational neglect and/or abandonment; other states include sexual battery, incest and/or sexual exploitation and still others include emotional abuse (Brittain and Hunt 2004). The federal Child Abuse Prevention and Treatment Act (CAPTA) (42 U.S.C. § (5106g) of 1974 provides threshold definitions of child abuse and child neglect; child abuse and neglect means the physical or mental injury, sexual abuse, negligent treatment or maltreatment of a child under the age of eighteen by a person who is responsible for the child's

welfare under circumstances which indicate that the child's health or welfare is harmed or threatened thereby, as determined in accordance with regulations prescribed by the Secretary" (p.5).

In this research, we analyzed data from reports by states to NCCAN for the years 1993 – 2003. Twenty states have been identified as having approximately 1 percent or more American Indian population. This includes three states that have a 0.9 percent AI/AN population according to the 2000 U. S. Census. As reported in Table 1, the 2000 census includes 17 states that have AI/AN populations of one percent or more and three states with AI/AN populations of 0.9 percent.

Table 1. States with Sizeable Percentages of American Indian/Alaskan Native Populations

State	AI/AN Population (percent)
Alaska	15.6
New Mexico	9.5
South Dakota	8.3
Oklahoma	7.9
Montana	6.2
Arizona	5
North Dakota	4.9
Wyoming	2.3
Washington	1.6
Idaho	1.4
Nevada	1.3
Oregon	1.3
Utah	1.3
North Carolina	1.2
Minnesota	1.1
California	1
Colorado	1
Kansas	0.9
Nebraska	0.9
Wisconsin	0.9

Source: U. S. Bureau of the Census, 2000.

Dependent Variables

The dependent variable for this study is the number of reported child abuse cases per 1000 (as reported to NCCAN). *Child abuse and neglect is* "at a minimum, any recent act or failure to act on the part of a parent or caretaker, which results in death, serious physical or emotional harm, sexual abuse or

exploitation, or an act or failure to act which presents imminent risk of serious harm" (42 U.S.C. § 5106g; *Public Law 93-247*; *Brittain and Hunt 2004*, p, 450-451). The NCCAN data is the best available data on reported child abuse and neglect. It has been consistently gathered by the states since the early 1990s, is readily accessible, and published annually.

Independent Variables and Hypotheses. The independent variables for this project include state-level anonymous reporting, levels of evidence by state, and Public Law 280 states/ non-280 states as well as, by state, the percentage living in poverty, median household income, percent unemployed, and education levels for the general population and the AI/AN population.

Policy Variables. Our measure of anonymous reporting distinguishes states that accept anonymous reports for child abuse and neglect from those that do not, where 0 = no anonymous reporting and 1 = anonymous reporting. States without anonymous reporting are California, Nebraska, Nevada, North Carolina, Utah, Washington, and Wyoming. States with anonymous reporting are Alaska, Arizona, Colorado, Idaho, Minnesota, Montana, New Mexico, North Dakota, Oklahoma, Oregon, South Dakota, Kansas, and Wisconsin. (source: U. S. Department of Health and Human Services. (2003)). Our hypothesis is that states with a system of anonymous reporting will have higher rates of reported child abuse and neglect for the general population and the American Indian / Alaskan Native population.

All states have adopted standards of proof for substantiation of child abuse cases. Standards of proof include a *preponderance of evidence*, *credible evidence*, *some credible evidence*, *reasonable cause*, *probable cause*, or *reasonable basis*. Moreover, some states use different terms for disposition categories such as *confirmed*, *founded*, *unsubstantiated*, or *unfounded* (Review of State CPS Policy 2003). Level of evidence is measured as a dummy variable with 0 = low standard and 1 = high standard, where high standard requires preponderance, material evidence, or clear and convincing evidence and low standard requires the case to be credible, reasonable, or necessitates the presentation of probable cause. States with a high standard are Alaska, Colorado, Idaho, Montana, North Carolina, Nebraska, and Wisconsin. States with a low standard are Arizona, California, Kansas, Minnesota, New Mexico, Nevada, North Dakota, Oklahoma, Oregon, South Dakota, Utah, Washington, and Wyoming (U. S. Department of Health and Human Services (2003)). Our hypothesis is that high evidence thresholds should be associated with higher rates of reported child abuse and neglect.

Congress in 1953 gave six states extensive criminal and civil jurisdiction over tribal lands. These Public Law 280 states are California, Minnesota, Nebraska, Oregon, Wisconsin, and Alaska. Measured as a dummy variable, 0 = non-280 states; 1 = 280 states (see Melton and Gardner, J. (2000)). Public Law 280 states will have higher reported child abuse and neglect rates than non-280 states for AI/AN child abuse. We do not expect this variable to be significant in the general population model.

Demographic Variables. Poverty rates for the general population were obtained for the years 1993, 1995, 1997 – 2003. For the years 1994 and 1996, the data were averaged. The poverty estimates are from the U.S Census Bureau's Annual Area Income and Poverty Estimates (U. S. Census Bureau 1990, 2000) . Our hypothesis is the higher the overall poverty rate in a state, the higher the reported child abuse / neglect rate among the general population.

Poverty rates for AI/AN are measured as the percentage of AI/ANs living below the poverty level per the 1990 and 2000 Census. To obtain off-year estimates we subtracted the 1990 poverty rate from the 2000 poverty rate, divided by ten, and then added three times this increment to the 1990 figure to obtain the 1993 estimate. After the 1993 estimate was obtained we added the increment to obtain each successive yearly observation (U. S. Census Bureau 1999, 2000). Our hypothesis is that higher AI/AN poverty rates will be associated with higher AI/AN reported child abuse/neglect rates.

Models include the percent unemployed for the general population by year for each state (U. S. Census Bureau 1990, 2000). Our hypothesis is that states with higher unemployment rates will have higher reported child abuse/neglect rates among the general population.

Our models also include the percent unemployed for the AI/AN population. The off-year estimates (1994, 1996, 1998, 2000 and 2002) were obtained by adding the odd years (e. g. 1993 and 1995) and then dividing by two for the average percentage figure. (Bureau of Indian Affairs, *Indian Service Population and Labor Force Estimates*, various years). Our hypothesis is that states with higher AI/AN unemployment rates will have higher reported AI/AN child abuse/neglect rates.

Median household income for the general population is available for all years except 1994. We averaged the observations for 1993 and 1995 and used

the average as the 1994 observation (U. S. Census Bureau 1990, 2000). Our hypothesis is that lower median income levels will be associated with higher reported child abuse/neglect rates.

Median household income for AI/AN by state was only available for 2000 (U. S. Census Bureau 2000). We used the observation for 2000 for all years in the requisite state. As a result, this variable varies in the cross-section, but does not vary over time. Our hypothesis is that the lower the median income level among AI/AN, the higher the reported child abuse/neglect rate among AI/AN.

The percent of the general population with at least a high school education (or its equivalency) was obtained for 1990 and 2000. The total number of high school graduates was divided by population size to calculate this measure. The procedure for obtaining off-year estimates is the same as that for obtaining off-year poverty estimates (U. S. Census Bureau 1990, 2000). Our hypothesis is that higher levels of education will be associated with lower reported child abuse/neglect rates. The percent of AI/AN with at least a high school education was also generated from U. S. Census data. The procedure for obtaining off-year estimates is the same as that for obtaining off-year poverty estimates. Our hypothesis is that higher educational attainment among American Indian / Alaska Natives will be associated with lower levels of reported AI/AN child abuse/neglect.

Methodology

Univariate Analysis. Line graphs for the dependent variable (the number of reported cases of AI/AN child abuse per 1000) are presented for each state. The objectives for the univariate analysis of the dependent variables are to: (1) identify those states with relatively high and relatively low per capita reported AI/AN child abuse rates; and (2) to identify trends within states over time.

Multivariate Analysis. In order to answer the research question, "Why are the rates of AI/AN child abuse (and child abuse among the general population) higher in some states and lower in others?," pooled time series analysis is employed. We used SAS to analyze the data. The model for the general population is:

$$y_t = x_{1t} + x_{2t} + x_{3t} + x_{4t} + x_{5t} + x_{6t} + x_{7t}$$

where:

y_t = per capita child abuse and neglect rate at time t in each state

x_{1t} = poverty rate at time t in each state

x_{2t} = unemployment rate at time t in each state

x_{3t} = median household income at time t in each state

x_{4t} = high school education at time t in each state

x_{5t} = anonymous reporting at time t in each state

x_{6t} = level of required evidence at time t in each state

x_{7t} = 280 state/non-280 state at time t in each state

We use a variant of this model for AI/AN child abuse neglect. This study pools cross-sectional and time series data for 20 states for the years 1993 – 2003. Pooling the data in this manner provides advantages over simple cross-sectional analysis and conventional time-series approaches. Combining observations in time and space provides greater confidence in parameter estimates, since the number of observations is much greater than it would be if only one domain were tested (Stimson 1985). Sayrs says, “The main advantage to combining cross-sections and time-series in this manner is to capture variation across different units in space as well as variation that emerges over time” (1989, 7). Stimson (1985) maintains that pooling data across both units and time points can be an extraordinarily robust research design, but pooled analyses are known for their special statistical problems. We use the ARMA variation of the GLS model. This variation uses information derived from the covariance structure to produce parameter estimates that are consistent and asymptotically efficient (Sayrs 1989).

Empirical Findings

Univariate Findings. We break states into high (greater than 2 percent), medium (less than 2, but greater than 1 percent), and low (1 percent or less) AI/AN population percentage states. Figure 1 reports child abuse rates per capita for high percentage AI/AN states for the years 1993 through 2003. Child abuse rates are stable over time for most high percentage population states—and for most of these states the rate of abuse per 1000 ranges between 1 and 20 cases per 1000. The states in Figure 1 with consistently higher reported child abuse rates are Alaska (25 per 1000 in 1993 and 35 per 1000 in 2003) and South Dakota (20 per 1000 in 1993 and 21 per 1000 in 2003). The findings for Alaska and South Dakota appear to be consistent with claims in the literature that reported AI/AN child abuse and neglect rates tend to be higher in impoverished areas characterized by high levels of social and geographic isolation.

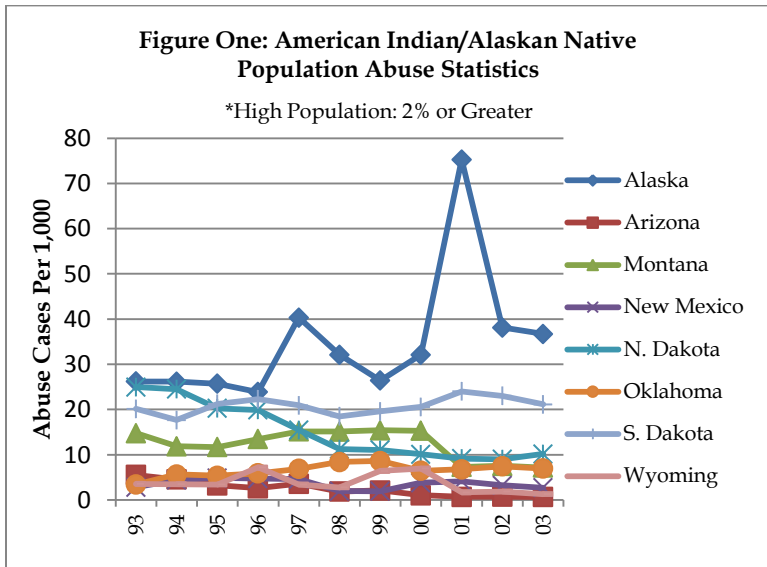
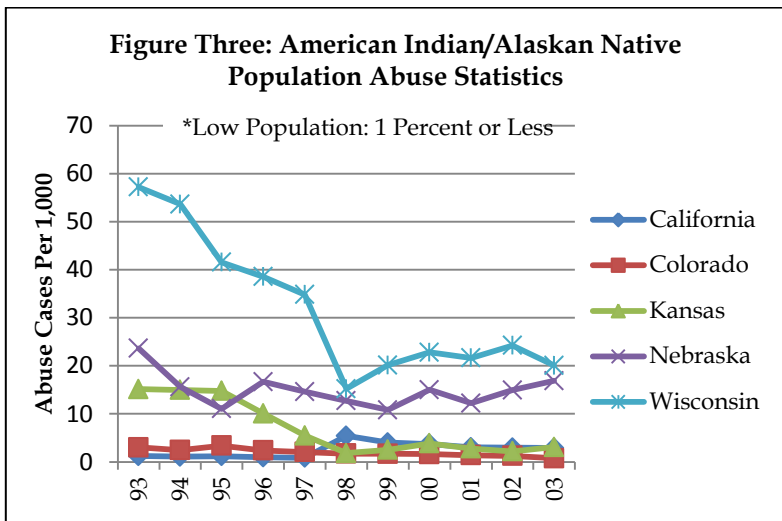
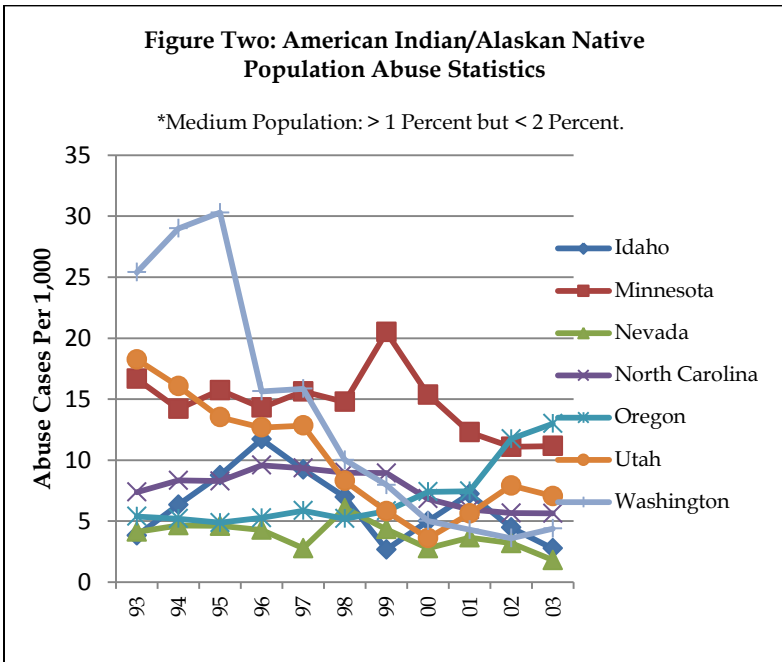


Figure 2 (on the following page) reports per capita AI/AN child abuse rates from 1993 through 2003 for medium percentage AI/AN population states. Abuse rates are relatively stable over time for Nevada, Oregon, Idaho, North Carolina, and Minnesota. The states of Washington and Utah, however, have experienced decreases in per capita reported AN/AI child abuse rates between 1993 and 2003. The size of the decline for the State of Washington is the largest among this group of states – from between 25-30 per 1000 in 1993 and 1995 to less than 5 per 1000 in 2003. In the last year for which we have data, 2003, AI/AN child abuse rates were highest in Oregon (13 per 1000) and Minnesota (11 per 1000). Among medium population states, the only state to experience an increase in per capita AI/AN child abuse between 1993 and 2003 was Oregon.

Figure 3 (on the following page) reports per capita AI/AN child abuse rates per 1000 for 1993-2003 for low AI/AN population percentage states (i.e. California, Colorado, Kansas, Nebraska, and Wisconsin). During the period under examination, rates of child abuse are consistently higher in Wisconsin than in the four other states; however, between 1993 and 2003 child abuse rates in this state decreased from about 60 per 1000 to approximately 20 per 1000. The rates of per capita child abuse were consistently low and stable over time in California and Colorado. Kansas, on the other hand, indicates a sizeable decline in AI/AN child abuse rates from 15 per 1000 in 1993 to about 3 per 1000 in 2003.



Multivariate Findings. In order to test our hypotheses we conducted pooled time series analysis on reported child abuse/neglect rates for 20 states from 1993 to 2003. We present two multiple regression models, one for the general population and another for American Indians/Alaskan Natives.

Table 2 reports the parameter estimates for child abuse/neglect in the general population. Table 3 reports the parameter estimates for child abuse/neglect among American Indians/Alaskan Natives.

Results for the General Population (Policy Variables). We find support for the hypothesis that higher levels of evidence for substantiation of child abuse are associated with higher levels of child abuse in the general population. Also, we find that there is no relationship in general population between rates of child abuse/neglect and either 280 state status or the presence of anonymous reporting.

Results for the General Population (Demographic Variables). Consistent with our hypothesis, an examination of the results for this model (see Table 2) provides evidence to suggest that higher levels of median household income are associated with lower levels of child abuse in the general population. The

Table 2. Determinants of Child Abuse and Neglect for the General Population, 1993-2003 (20 states x 11 years)

Variable	Parameter Estimate	Standard Error	t-value
Intercept	1.060782***	0.3135	3.38
Policy Variables			
Anonymous Reporting	-0.00167	0.0286	-0.06
Level of Disposition	0.10021***	0.0288	3.48
280 and non-280 States	0.114009	0.0961	1.19
Demographic Variables			
% General Pop. in Pov	-0.027**	0.0117	-2.31
% General Pop. Unemp	0.012145	0.0130	0.94
Med. Household Inc. for Gen. Pop	-0.00002***	3.46SE-6	-5.63
% Gen. Pop. w/ H. S. Ed	0.803906	0.5825	1.38
Adjusted R-Square	0.27		
d. f.	212		

Note: The dependent variable is the number of child abuse and neglect victims per 1000 for the General population. The method is pooled-time series analysis. * < .10; ** < .05; *** < .01.

parameter estimate for the percent of the general population in poverty is also significant, but the sign on the coefficient is not in the hypothesized direction. We suspect that this result is caused by some variables within states that trend over time. For instance, child abuse and neglect among the

general population in most states either declines or remains relatively stable between 1993 and 2003. By the same token, an examination of the data shows that poverty rates within most states increased during this same time period. Consequently, we strongly suspect that the significant results from the regression model are generated by this pattern in the data (i.e. rates of abuse trending downward and poverty rates trending upward) and not because of any substantive relationship between the variables of interest. Alternatively, as we will discuss more fully in the conclusion, the abuse rates in the general population may be tending downwards as an artifact of the change in the reporting environment and this change may overwhelm the effect of the increase in poverty.

Results for American Indians and Alaskan Natives (Policy Variables). Table 3 reports the parameter estimates for reported child abuse/neglect among the American Indian/Alaskan Native population. The parameter estimate for

Table 3. Determinants of AI/AN Child Abuse and Neglect, 1993-2003 (20 states x 11 years)

Variable	Parameter Estimate	Standard Error	t-value
Intercept	-0.03069**	0.0151	-2.03
Policy Variables			
Anonymous Reporting	0.001751*	0.00115	1.53
Level of Disposition	0.004347***	0.00117	3.71
280 and non-280 States	0.007398**	0.00393	1.88
Demographic Variables			
% AI/AN Pop. in Pov	0.000664***	0.000128	5.19
% AI/AN Pop. Unemp	-0.00004	0.000040	-0.99
Med. Household Inc. for AI/AN	5.549E-7	4.157E-7	1.33
% AI/AN w/H. S. Ed	0.00027	0.000167	1.62
Adjusted R-Square	0.23		
d. f.	212		

Note: The dependent variable is the number of child abuse and neglect victims per 1000 for the AI/AN population. The method is pooled-time series analysis.

* < .10; ** < .05; *** < .01.

anonymous reporting suggests that states with this policy tend to have higher rates of reported AI/AN child abuse than states that do not provide the option to report cases anonymously. The results reported in Table 3 also indicate that the higher the bar is for disposition of cases, the more likely it is

that reported child abuse/ neglect rates in those states are higher. The distinction between Public Law 280 and non-280 states is evidently

important--Public Law 280 states tend to have higher reported levels of child abuse/neglect among AI/ AN than do non-280 states. While this requires further research, we feel that the question of who has jurisdiction (280 versus non-280 states) as well as who investigates and interprets the alleged abuse may have a significant effect on the reported rates of abuse in AI/AN communities. When non-AI/ AN agencies in Public Law 280 states investigate cases the reported rates may be higher. The importance of the 280/non-280 variable in the AI/ AN model for Native Americans is further supported by the lack of significance for the 280/non-280 variable in the general model.

Results for American Indians and Alaskan Natives (Demographic Variables). As expected, the results indicate a very strong relationship between the percent of Native Americans living in poverty and the per capita rate of AI/AN child abuse. An interpretation of the coefficients indicates that for each additional one percent of American Indians living in poverty there is an increase in the rate of child abuse and neglect among Native Americans of nearly 1 case per 1000 people. Why is the relationship between poverty and reported abuse rates for AI/AN in the expected direction while the relationship for the general population is not? We believe that the causes noted above (trending and reporting changes) may account for the unexpected direction in the general population model, but that the much greater incidence of poverty in AI/AN communities compared to the general population creates a situation in which poverty is more predictive for the AI/AN model. This is consistent with the expectation that reports of abuse should be higher in areas of "concentrated poverty."

We intentionally included variables in the models that demonstrate high levels of multicollinearity (e.g. poverty, median household income, percent unemployed, and percent with at least a high school education). It should be noted that multicollinearity does not produce biased estimates. Rather it produces estimates that are asymptotically inefficient – or said differently, it produces inflated standard errors on the requisite t-scores. This problem is associated with what is commonly referred to as Type II error (Ott 1988). This strategy sets a very high standard for statistical significance among this group of demographic/SES variables.

Conclusion

American Indians and Alaskan Natives represent approximately one percent of the total U. S. population and their situations are particularly bleak. American Indian and Alaskan Native children are severely affected by the social and economic situations faced by their parents. Poverty, unemployment, and lack of education are persistent problems for Native American communities. The states with the highest rates of reported AI/AN child abuse are Alaska, Minnesota, Nebraska, Oregon, South Dakota, and Wisconsin. Although our findings show that most states with sizeable American Indian/Native American populations indicate either stable or declining rates of reported AI/AN child abuse, large gaps still exist between reported rates of child abuse and neglect in the general population and rates among the AI/AN population.

The findings from our models indicate that policy matters, but it seems to matter more for Native Americans than it does for the general population. Higher reported rates of American Indian and Alaskan Native child abuse and neglect tend to be associated with all three policy variables – the presence of anonymous reporting, higher required levels of evidence, and Public Law 280 state status. In the general population model the only variable that is related to rates of reported child abuse is the required level of evidence. Our models also tend to confirm the conventional wisdom about the determinants of reported AI/AN child abuse/neglect – that is, child abuse and neglect is far more prevalent in areas with high levels of poverty where AI/AN populations live in relative isolation and experience relatively low levels of education. In the general population model reported rates of child abuse and neglect are inversely related to state-level median family income.

The link between ethnicity, minority group status, and child maltreatment is extremely complex – and it is important to remember that most poor people do not abuse their children (Hines et al. 2004). Policy development that focuses on promoting cultural understanding and ethnic validation by child welfare advocates is essential to any reasonable approach to the problems of child abuse and neglect. Moreover, because informal support systems and networks may facilitate a decline in maltreatment, policies that address child abuse and neglect should encourage the development and maintenance of such systems/networks. Addressing neighborhood environments constitutes an enormous challenge. Creating new job opportunities in minority communities may help reduce

maltreatment in those areas. Moreover, as Freisthler et al. have noted, “Efforts that focus on mitigating neighborhood poverty will be beneficial to all children, regardless of race or ethnicity” (2007, 7).

The state of knowledge for Native Americans, often referred to as the forgotten minority, is particularly disconcerting and has yet to confront the extent of institutional racism that plagues AI/AN communities. Much more work needs to be done in order to help us understand the role of policy factors and the interaction of these factors with social, economic, and political institutions. For example, what does it mean that 280 states report higher levels of AI/AN child abuse? One possible explanation is that when non-Native Americans do the investigating, they more readily see abuse in the Native American population than they do in the general population. Hence, reported rates are higher in 280 states. Alternatively, it could be that Native American investigators in the non-280 states are more likely to use informal methods to resolve incidents, thus resulting in fewer reports of abuse. Another possibility is that lower reported rates of abuse in non-280 states could be the result of a more effective approach by Native American case workers and investigators which reduces the actual incidence of abuse. The important finding in our work is that policy matters. Future work that identifies the policy mechanisms that lead to differences in reported child abuse and neglect rates can lead to better policy options.

References

- Ards, S. 1992. Understanding patterns of child maltreatment. *Contemporary Policy Issues* 10:39 – 51.
- Berger, M. 2004. Income, family structure and child maltreatment risk. *Children and Youth Services Review* 26:725–48.
- Berger, L. M. (2005). "Income family characteristics and physical violence toward children." *Child Abuse and Neglect*. Vol. 29, Issue 2, February, p. 107 - 133. Retrieved on October 5, 2005 from: <http://www.sciencedirect.com.library.uark.edu/science>
- Besharov, D. J. (2000). "Violence in the family: Child abuse realities: Over-reporting and poverty. *Virginia Journal of Social Policy and the Law*. 165. Retrieved on August 6, 2005 from: <http://web.lexis-nexis.com/universe>
- Billingsley, A and Giovannoni, J. M. (1972). *Children of the storm: Black children and American child Welfare*. New York: Harcourt, Brace and Jovanovich.
- Brittain, C.R. and Hunt, D.E. (2004). *Helping in Child Protective Services: A Competency-Based Casework Handbook*. New York, NY: Oxford University Press.
- Brown, R. and Strozier, M. (2004). "Resisting abuse at what cost? The impact of mandated reporting laws on the process and content of therapy". *Contemporary Family Therapy*, 26, (1), pg. 45-60.
- Bureau of Indian Affairs. Various years. *American Indian Population and Labor Force Report*. Washington, DC: U. S. Department of Interior.
- Canby, W. Jr. (1998). *American Indian Law in a Nutshell*. 9th ed. St Paul, MN: West Group Publishing Co.
- Connell-Carrick, K. (2003). "A critical review of the empirical literature: Identifying correlates of child neglect." *Child and Adolescent Social Work Journal*. Vol. 20, No. 5, October, p. 389 – 425.
- Coulton, C.; Korbin, J. and Su, M. (1999). "Neighborhoods and child maltreatment: A multi-level study." *Child Abuse and Neglect*, Vol. 23, Issue 11, p. 1019 – 1040.
- Coulton, C. J., Korbin, J. E., Su, M. and Chow, J. (1995). "Community level factors and child maltreatment rates". *Child Development*, 66, p. 1262 – 1276.
- Cross, T., Earle, K. A., and Simmons, D. (2000). "Child abuse and neglect in Indian Country: Policy issues." *Families in Society*. New York, NY: Manticore Publishers.

- DeBruyn, L.M, Lujan, C. C and Phillip, M. (1992). "A comparative study of abused and Neglected American Indian children in the Southwest." *Social Science and Medicine*, Vol. 35, Issue 3, pp. 305-315.
- Delaronde, S; King, G; Bendel, R and Reece, R. (2000). "Opinions among mandated reporters toward child maltreatment reporting policies." *Child Abuse and Neglect*, July, Vol. 24, Iss. 7, pg. 901-910. Retrieved on: July 10, 2006 from: <http://www.sciencedirect.com.library.uark.edu/science>
- Drake, B. and Pandey, S. (1996). "Understanding the relationship between neighborhood Poverty and specific types of child maltreatment". *Child Abuse and Neglect*, Vol. 20, No. 11, p. 1003 - 1018.
- Earle, K. (2000). *Child abuse and neglect: An examination of American Indian data*. Seattle, WA: Casey Family Programs.
- Earle, K. A., and Cross, Amanda. (2001). *Child abuse and neglect among American Indian/Alaska Native children: An analysis of existing data*. Seattle, WA: Casey Family Programs.
- EchoHawk, Larry (2001/2002) "Child sexual abuse in Indian country: Is the guardian keeping in mind the seventh generation?" 5 N. Y. U. J. Legis. & Pub. Pol'y 83.
- EchoHawk, Larry and Santiago, T. M. (2003/2004) "What Indian tribes can do to combat child sexual abuse". 4 Tribal L.J. 1
- Finkelhor, David (1983). *The dark side of families: Current family violence research*. Edited by David Finkelhor . . . et. al., Beverly Hills: Sage Publications
- Finkelhor, David (1984). *Child sexual abuse: New theory and research*. New York: Free Press.
- Finkelhor, David and Baron, Larry (1986). "Risk factors for child sexual abuse." *Journal of Interpersonal Violence*, 1, 1, March, p. 43 - 71.
- Finkelhor, David, Hotaling, G.T and Yllo, Kersti (1988). *Stopping family violence: Research priorities for the coming decade*. Newbury Park, CA: Sage Publications
- Finkelhor, David and Jones, Lisa (2001). *Decline in child sexual abuse cases*. Washington, DC: U. S. Department of Justice, Office of Juvenile Justice and Delinquency Prevention.
- Fischler, R. S. (1985). "Child abuse and neglect in American Indian communities." *Child Abuse and Neglect*. Vol. 9, 95 - 106.

- Flaherty, E.G. (2006). "Does the wording of the mandate to report suspected child abuse serve as another barrier to child abuse reporting?" *Child Abuse and Neglect*, April, Vol. 30, Iss. 4, pg.341-343. Retrieved on: July 10, 2006 from: <http://www.sciencedirect.com.library.uark.edu/science>
- Foster, H. (1998). "Lower standards of evidence used for abuse." Special Reports. Seattle Post-Intelligencer Reporter, Seattle, WA. Retrieved on August 11, 2006 from: <http://seattlepi.nwsource.com/awards/angie/angie2.html>
- Fox, K. A. (2003). "Collecting data on the abuse and neglect of American Indian children." *Child Welfare*, Vol. LXXXII, 707 - 726.
- Freisthler, B.; Bruce, E. and Needell, B. (2007). "Understanding the geospatial relationships of neighborhood characteristics and rates of maltreatment for Black, Hispanic, and White children". *Social Work*, Vol. 52, No. 1, January, 7 - 16.
- Garbarino J. and Crouter, A. (1978). "Defining the community context for Parent-Child relations: The correlates of child maltreatment." *Child Development*, 49, p. 604 - 616.
- Garbarino J. and Kostelny K. (1992). "Child maltreatment as a community problem." *Child Abuse and Neglect*. Vol. 16, p. 455 - 464.
- Gil, D.G. (1970). *Violence against children: Physical child abuse in the United States* Cambridge, MA: Harvard University Press.
- Goodluck, C. and Willeto, A. A. A. (2000). *Native American kids 2000: Indian child well-being indicators*. Portland, OR: Casey Family Programs and National Indian Child Welfare Association.
- Goodluck, C. and Willeto, A. A. A. (2001). *Native American kids 2001: Indian children's well-being indicators data book*. Seattle, WA: Casey Family Program and Flagstaff, AZ: Northern Arizona University.
- Hines, A. M., Lemon, K., Wyatt, P. and Merdinger, J. (2004). "Factors related to the disproportionate involvement of children of color in the child welfare system: A review of emerging themes." *Children and Youth Services Review*, 26, p. 507 - 527.
- Human Rights Watch (1999). "Promises Broken: An Assessment of Children's Rights." Background Briefing. Retrieved on: February 12, 2008, from: <http://www.hrw.org/press/1999/nov/children.html>
- Jones, E. D. and McCurdy, K. (1992). "The links between types of maltreatment and demographic characteristics of children." *Child Abuse and Neglect*, Vol. 16, p. 201 - 215.

- Jones, Lisa M., Finkelhor, David and Kopiec, Kathy (2001). "Why is sexual abuse declining? A survey of state child protection administrators." *Child Abuse and Neglect*, Vol 25, Issue 9, September, p. 1139 – 1158.
- Korbin, J. (2002). "Culture and child maltreatment: cultural competence and beyond". *Child Abuse and Neglect*, Vol. 26, Issue 6-7, June, p. 637 – 644. Retrieved on October, 04, 2004 from: <http://www.sciencedirect.com.library.uark.edu/>
- Leiter, R.A. Ed. (1997). *National Survey of State Laws*, 2nd Ed.
- Lowe, W. Jr., Pavkov, T. W., Casanova, G. M. and Wetchler, J. L. (2005). "Do American ethnic cultures differ in their definitions of child sexual abuse". *The American Journal of Family Therapy*. 33:147-166.
- Lujan, C., DeBruyn, L.M., May, P.A., and Bird, M. E. (1989). "Profile of abused and neglected American Indian children in the southwest." *Child Abuse and Neglect*, Vol. 13, 449-461.
- Melton, Gary B. and Berry, Frank D. Eds. (1994). *Protecting Children from Abuse and Neglect: Foundations for a New National Strategy*, NY: The Guilford Press.
- Melton, A.P. and Gardner, J. (2000). "Public Law 280: Issues and concerns." Bureau of Indian Affairs Social Services Resource Manual, Vol. III, March. From the University of Oklahoma, Oklahoma Health Sciences Center (Grant #: 97-VI-GX-0002), US Department of Justice.
- Melton, G. B. (2002). "Chronic neglect of family violence: more than a decade of reports to guide US policy." *Child Abuse and Neglect*, 26, p. 569 – 589.
- Ott, Lyman. 1988. *An Introduction to Statistical Methods and Data Analysis*. Boston: PWS-Kent Publishing Company.
- Ozawa, M. N., Joo, M. and Kim, J. (2004). "Economic deprivation and child well-being: A state-by-state analysis". *Children and Youth Services Review*. Vol. 26, p. 785- 801
- Paxson C. and Waldfogel, J. (1999). "Parental resources and child abuse and neglect." Papers and Proceedings of the One Hundred Eleventh Annual Meeting of the American Economic Association. *The American Economic Review*. Vol. 89, No. 2, (May, 1999) p. 239 – 244.
- Paxson, C. and Waldfogel, J. (2003). "Welfare reforms, family resources, and child maltreatment." *Journal of Policy Analysis and Management*. Vol. 22, No.1, 85-113.

- Pelton, L. H. 1994. "The Role of Material Factors in Child Abuse and Neglect." In Melton, G.B. and F.D. Barry, *Protecting Children from Abuse and Neglect*. New York: The Guilford Press.
- Peterson, Geoff and Robert Duncan. 2001. "American Indian Representation in the 20th and 21st Centuries." In *Representation of Minority Groups in the U. S.* edited by Charles Menifield. (p. 111-126). Lanham, Maryland: Austin & Winfield Publishers.
- Robin, R.W, Chester, B, Rasmussen, J.K, Jaranson. J..M and Goldman, D. (1997). "Prevalence, characteristics, and impact of childhood sexual abuse in a southwestern American Indian tribe." *Child Abuse and Neglect*, Vol. 21, Issue 8, pp 769-787.
- Roditti, M. G. (2005). "Understanding communities of neglectful parents: Child caregiving networks and child neglect." *Child Welfare*. Washington: Mar/Apr. Vol. 64, Iss. 2, pg 277. Retrieved on: July 9, 2006, from: <http://www.proquest.umi.com.library.uark.edu/pqdwweb>
- Sayrs, Lois. (1989). *Pooled time series analysis*, Newbury Park, CA: Sage.
- Slack, K. S., Holl, J. L., McDaniel, M., Yoo, J. and Bolger, K. (2004). "Understanding the risks of child neglect: An exploration of poverty and parenting characteristics." *Child Maltreatment*, Vol. 9, No. 4, November, p. 395 - 408.
- Stimson, James. (1985). "Regression in time and space." *American Journal of Political Science*, 29:914-47
- Strozier, M; Brown, R.; Fennell, M; Hardee, J and Vogel, R. (2005). "Experiences of mandated reporting among family therapists. *Contemporary Family Therapy*, June, 27, (2), pg. 177-191.
- Trost, C. T. (1998). "Chilling child abuse reporting: Rethinking the CAPTA amendments." *Vanderbilt Law Review*. Jan, 51, 1; ABI/INFORM Complete.
- U. S. Census Bureau, (1990, 2000). American Fact Finder and Small Area Income and Poverty Estimates. <http://factfinder.census.gov/servlet>
- U. S. Department of Health and Human Services. (2003). Administration for Children and Families, Children's Bureau and Office of the Assistant Secretary for Planning and Evaluation. [HHS/ACF and OASPE] *National study of child protective services systems and reform efforts: Review of state CPS policy*. Washington, DC: U. S. Government Printing Office.
- U. S. Department of Health and Human Services. (2006). National Center on Child Abuse and Neglect, *Child Maltreatment 2004: Reports from the states to the National*

Center on Child Abuse and Neglect, Washington, DC: U.S. Government Printing Office.

- U. S. Department of Health and Human Services. (various years). Administration on Children, Youth and Families, *Child Maltreatment (various years): Reports from the states to the National Center on Child Abuse and Neglect*, Washington, DC: U. S. Government Printing Office.
- White, R. B. and Cornely, D. A. (1981). "Navajo child abuse and neglect study: A comparison group examination of abuse and neglect of Navajo children." *Child Abuse and Neglect*, Vol. 5, pp 9-17.
- Willeto, A. A. A. (2002). *Native American kids 2002: Indian children's well-being indicators data book for 13 States*. Casey Family Program and Flagstaff, AZ: Northern Arizona University.
- Willeto, A. A. A. and Goodluck C. (2003). *Native American kids 2003: Indian children's well-being indicators data book for 14 states*. Baltimore, MD: Annie E. Casey Foundation, Seattle, WA: Casey Family Programs and Flagstaff, AZ: Northern Arizona University.
- Young, G. and Gately, T. 1988. "Neighborhood Impoverishment and Child Maltreatment: An Analysis From the Ecological Perspective." *Journal of Family Issues* 9(2): 240-254.