



Don't Shoot! State-Wide Police Shootings, Adolescent Risk-Taking Behaviors, And The Historic Influence Of Wealth

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ABSTRACT

The present study uses Bronfenbrenner's ecological systems theory as a framework for understanding the influence of state-wide fatal police shootings and wealth on a host of adolescent risk-taking behaviors (i.e. sexual risk taking, tobacco use, drug use, alcohol use, and suicide risk). Using data from the Youth Risk Behavior Survey, associations were tested among black and white adolescents from five states (N=13,314). State-wide police shootings were positively associated with drug use, alcohol use, and suicide risk among black adolescents. In contrast, state-wide police shootings, alone, were not associated with any risk-taking behaviors among white adolescents. However, wealth mattered, such that increases in wealth were significantly associated with lower sexual risk-taking, drug use, and suicide risk for white adolescents. Wealth was only associated with lower alcohol use among black adolescents. Our results indicate that state-wide fatal police shootings may shape adolescent health in unfavorable ways – namely among Black youth. Wealth may serve as a buffer against the negative effects of state-wide fatal police shootings.

Keywords: state-wide police shootings, risk-taking, wealth, social contexts, adolescents.

INTRODUCTION

America's demographic and political climate have undergone notable changes over the past decade. While white Americans remain the majority, the United States is becoming increasingly diverse. Recent census projections indicate that by 2060, Hispanics, blacks, Asians, and multiracial groups will comprise the majority [1]. Coupled with shifts in the demographic landscape, the millennium's

historical inauguration of the first president of color created a great deal of discourse regarding the nation's post racial state. Some contended that an African American president would ensure smoother race relations. These notions were quickly dismissed as issues of racial discrimination and inequality remained. Examples include racial profiling by law enforcement and the disproportionate killings and injuries of minorities, namely blacks. In 2012, black people accounted for 31 percent of police killing victims. Yet, they account for only 13 percent of the entire U. S. population [2]. Such disparities in police use of force echo larger racial inequities across the entire U. S. criminal justice system.

These changes have heightened scholar's sensitivities to the important role of social (in)justice in shaping child and family well-being, particularly among families of color. Of key import is adolescent development. Recent findings suggest that police violence disproportionately affects youth, and especially youth of color [3]. Police violence may be particularly salient for youth because adolescence is a critical developmental period, as older children, relative to those younger, are more likely to be mindful of substantial changes in their communities such as exposure to distal or proximal violence [4-5]. Moreover, behavioral patterns are established at this time, which have long-lasting implications for later development. Police violence may promote or inhibit behaviors of youth. That is, youth may exhibit externalizing behaviors as a result of the distress elicited by police shootings and social outrage. Alternatively, youth may behave more favorably in fear of being an actual victim of police violence.

The present study builds on a well-established body of literature that has examined the effect of broader social contexts on adolescent behavior by being the first to focus on associations between police shootings, wealth, and adolescent risk-taking behaviors. Using Bronfenbrenner's ecological systems theory, we examine exosystem influences on microsystem processes by using nationally representative data to analyze the associations between state-wide fatal police shootings and adolescent risk-taking behaviors, including sexual risk-taking, tobacco, alcohol, and drug use, and suicide risk. We intentionally use *fatal* shootings because in some cases the victim may have been unarmed or not necessarily posing a threat to an officer, thereby making a fatal shooting unwarranted and thus more stressful to the community [6]. We also include a measure of wealth in our models in an effort to understand potential protective influences. Our sample is divided by race, as this factor may moderate the associations between police shootings, wealth, and risky behaviors [7]. Exploring the link between police shootings and adolescent risk-taking behaviors will aid in laying the groundwork for policies and practices aimed at ameliorating the negative consequences of indirect exposure to violence, and call attention to the impact that police shootings can have on family processes.

BACKGROUND

Theoretical Framework

Urie Bronfenbrenner's [8] ecological systems theory has emerged as a dominant framework for understanding contextual effects of development across the lifespan. Theoretically, individuals are influenced by multiple contexts. These contexts are conceptualized as four different levels or systems: 1) the microsystem, consisting of the immediate environment and interactions encountered by the developing individual, 2) the mesosystem, consisting of interactions between microsystems, 3) the exosystem, which includes settings that indirectly affect the individual's development, and 4) the macrosystem, which is comprised of larger influences (i.e. cultural) on

human development. Unexpected changes in society have the potential to reshape adolescents' contexts in dramatic ways. The exosystem represents a broader context in which micro-level processes, such as adolescent risk-taking behavior, can be situated.

The exosystem serves as a social structure that shapes the distal context in which adolescents are embedded. Exosystem influences are indirect, unlike the immediate impact of micro- and mesosystem effects. Factors that characterize the exosystem include the political, economic, and social climate [9]. State-level police shootings represent a plausible way of measuring exosystem influences on adolescent risk-taking behaviors. State-level measures of police shootings capture an element of the social climate of the state as a whole, and may influence adolescents' behaviors regardless of the social climate of their respective community. Adolescents who reside in states that suffer from larger numbers of police shootings, relative to those that do not, may be more stressed or anxious about their own encounters with law enforcement. Whereas isolated cases of police shootings may affect individuals and their respective families, state-wide police shootings may be perceived as shocks (unanticipated changes to the social climate) to groups of adolescents, families, and the broader community, and will not just affect those adolescents who have witnessed police shootings firsthand.

Social Contexts and Adolescent Well-Being

Exposure to violence is an unfortunate aspect of youths' reality. Studies have long documented the prevalence of youths' exposure to violence in schools, communities, and homes [5,10]. Recent estimates suggest that between 50 and percent of urban youths have witnessed or experienced some form of violence in their communities [11]. This number has more than doubled over the past twenty years [7]. More importantly, adolescents are two to four times more likely to witness violence [12]. Estimates of violence exposure appear to vary by sociodemographic characteristics such as age gender, and race. Specifically, older adolescents, males, and African American youth are disproportionately exposed to violence, and this exposure usually occurs in neighborhoods characterized by crime and disadvantage [7, 12, 13]. Exposure to violence, whether direct or indirect, can adversely affect adolescent behavior. These adverse outcomes include suicide ideation, aggressive behavior, anxiety, and increased high school dropout rates [14-19]. Furthermore, youth's *perceptions* of personal threat, social disorder, and physical conditions of their surroundings have been linked to risk-taking behaviors [20].

There are a number of important mechanisms linking state-wide police shootings to adolescent risk-taking behaviors, including increased stress. When conditions of the broader context deteriorate or change in an unfavorable way, stress increases among those directly and indirectly affected [21]. The stress associated with a change in social climate (i.e. police shootings) may lead to less favorable parenting practices, such as declines in parental warmth and the inability to monitor adolescent behaviors [22]. A study examining alcohol use among a sample adolescents revealed that parental monitoring partially accounted for frequency of alcohol use over time [23]. More importantly, parental stress is linked to distress and depressive symptoms among adolescents, which may result in negative adolescent behavior outcomes such as substance abuse and sexual risk-taking [24]. Parents may also underestimate the consequences of state-wide police shootings. Zimmerman and Pogarsky [5] revealed that parental underestimation of youth's exposure to violence led to more internalizing and externalizing problems and delinquent behaviors.

Scholars have noted differences in adolescent risk-taking behavior by age. Adolescents generally take more risks than children or adults do, as evidenced by statistics on binge drinking, contraceptive use, crime, and car accidents [25]. Younger adolescents may be more susceptible to peer pressure and norms related to sexual behaviors [26]. Yet, the older adolescents become, the more likely they are to engage in sexual behaviors because age is linked to important biological and social changes. Such changes include increased hormone levels, greater pressure from other adolescents, and greater autonomy and opportunity to engage in sexual behaviors [27].

The relationship between state-wide police shootings and adolescent risk-taking behaviors may also differ by race. Evidence suggests that Black youth exposed to broader environmental “shocks” are at a greater risk for suicide ideation and sexual risk-taking [28-29]. Given these differences in underlying behavior patterns by race and ethnicity, changes in the social climate may differentially affect adolescents of different racial and ethnic groups. Furthermore, given that minority adolescents are more likely to live in households with fewer assets [30], they may be less likely to buffer the consequences of police shootings. These underlying racial differences in risk-taking behaviors may become more pronounced in response to state-wide police shootings. Given the potential impact of wealth, it is important to understand its historical influence particularly as it relates to black families.

Historical Influences of Wealth in the Black Family

The wealth gap measures the difference between the median wealth of blacks compared to the wealth of whites. Essentially wealth is defined as the total assets a family owns after the bills are paid. African Americans faced dire economic consequences as they entered American society as free citizens in 1865 with the passage of the 13th Amendment. Prior to the abolition of slavery very few African Americans were able to attain wealth. One example was Anthony Johnson, a black man that was able to pay for his freedom and eventually own a plantation with slaves in Northampton County, Virginia. It must be noted however, very few free African Americans owned slaves. Nevertheless, like Johnson, other free African Americans in the South were expected to live like “white” Englishmen and remain separate from enslaved blacks. Some of them served in the military while others owned land, business, and paid taxes. Free African American Christians founded their own churches which became major sources of the economic, social, and intellectual lives of blacks in many areas of the United States. Black newspapers served as the voice for blacks and often spoke openly about the moral outrage of slavery and racism and the inferiority of African Americans. Other free blacks of note during slavery were Phillis Wheatley, Prince Hall, and Benjamin Banneker, to name a few.

By the 1940’s education, housing and wages were also mitigating factors that prevented blacks from closing the economic gap with whites. African Americans were less likely to complete secondary school and attend college. During the great migration from the rural South to the urban North; blacks and whites living in central cities were less likely to be homeowners. Black homeownership continued to slide between 1920 and 1940 mainly as a result of the Great Depression of the 1930’s. During this depression the Federal Housing Authority created loan programs to make homeownership accessible. While implementing this program the government created color-coded maps. Green represented good neighborhoods where whites resided and red indicated bad neighborhoods where blacks resided. This discriminatory process is called redlining and it systematically prevented blacks from obtaining home loans in green colored residential districts.

Further, ninety-eight percent of the home loans were given to white families from 1934 to 1962. This redlining policy systematically allowed whites the ability to accrue wealth and attracted businesses to their neighborhoods thereby increasing property values. In turn the wealth whites were able to acquire allowed them to send their children to college. The wealth in white communities continued to grow and they were better able to pass that wealth to their children. In 1940 nearly twenty percent of black male household heads were homeowners, compared to forty-two percent white male household heads. The gains continued to grow for white male household heads. By 1960 the ration spread to thirty-nine percent and sixth-sixty percent (black make household head and white male household head respectively) [31]. Although the Civil Rights Act of 1964 legally ended segregation in public places and banned employment discrimination on the basis of race, color, religion, sex or national origin, it did not permeate throughout society. Discrimination still occurred overtly and covertly throughout the United States. Other factors also added to the increase in the wealth gap including a criminal justice system that convicts blacks at a much higher rate than whites for the same crime. The tax codes that unfairly provide loop holes for the rich and over tax the poor.

Recent findings indicate that between 1983 and 2013, the wealth of the median black household declined seventy-five percent (from \$6,800 to \$1,700) and the median Latino household declined fifty percent (from \$4,000 to \$2,000). At the same time, wealth for the median white household increased fourteen percent from \$102,000 to \$116,800. The report also indicates that by 2020 black and Latino households are projected to lose even more wealth. The losses for blacks is expected to be eighteen percent and Latino losses will be twelve percent while the median white household will own eight to six times more wealth than blacks and six to eight times more than Latino's [32].

Since slavery African Americans have historically been prevented from acquiring wealth and this is a direct result of systematic racism. Government policies supported wealth building for whites and in the future, policies will need to be improved and made available so that all Americans will have the opportunity to build wealth. Governmental policies have maintained this wealth gap despite individual African American achievements in building wealth. The average black family with a head of household working full time has less wealth than the average white family whose head of household is unemployed. In fact, the median wealth for black families whose head has a college degree has only one-eighth the wealth of the median white family whose head has a college degree. Moreover, the black family with a graduate or professional degree had more than \$200,000 less wealth than a comparable white family [33].

In 2017 the New York Times reported that black families in America earn \$57.30 for every \$100 in income earned by white families and for every \$100 in white family wealth, black families hold just \$5.04. Americans believe that blacks and whites are more equal in the twenty-first century than they truly are on measures of income, wealth, wages and health benefits [34]. In addition, they believe that racism and institutional racism do not play a major role in this disparity. A key component of financial security is liquid savings or money held in checking and savings accounts, unused balances on prepaid card and cash saved at home. The wealth gap extends beyond liquid savings into financial assets like investments and retirement savings. In 2014, one quarter of black households would have less than \$5 if they liquidated such assets compared with the bottom twenty-five percent of white households. White households have approximately \$3,000 after asset liquidation [35]. Wealth is a fundamentally significant measure of economic progress. It permits

families to transfer income earned in the past to meet the spending demands in the future. For example, having the ability to save for your children's college education or being able to have the funds to open a business, or sustain the household during periods of unemployment. Further, wealth determines living standards for retirement or leaving an inheritance for children. Many African Americans have not been able to save for the previously mentioned provisions and this is why the wealth gap is so large between blacks and whites. Housing equity makes up about two-thirds of all wealth for the typical household. Blacks have been at a disadvantage as it relates to homeownership decades as a result of facing red zoning coupled with discrimination in employment and wage-setting. In 2017 homeownership continued to be the main driver of wealth in America where the white homeownership rate for the fourth quarter was 72.2 percent while black homeownership was 42.1 percent. This is the largest disparity since World War II [35]. Between 1963 and 2016 several outcomes became clear; families near the bottom of the wealth distribution went from having no wealth to being \$1000 in debt; the middle class more than doubled their wealth; families in the top ninety percent increased their wealth five times, and the wealth of the top ninety-nine percent increased their wealth seven times. These factors drastically increased the wealth gap between blacks and whites.

Wealth has historically served as a protective factor against adverse family outcomes for White families. In a social climate characterized by state-wide police shootings at disproportionate rates, wealth may be a vital resource for black families – especially adolescents. Given these concerns, the present paper includes a measure of wealth (i.e. state median net worth) to further understand how police shootings are associated with adolescent risk-taking behaviors. Our study adds to the literature in other important ways. We are able to stratify by race of adolescents. Additionally, our results reflect recent patterns of risk taking among adolescents, as our study include data from 2017. We hypothesize that adolescents will engage in varied patterns of risk-taking behaviors in the wake of state-wide police shootings. Specifically, we expect higher levels of risk-taking among black adolescents, reflecting the disproportionate rates of deadly police interactions with blacks in the U.S.

MATERIALS AND METHODS

Data Source

Adolescent risk-taking behaviors

Data on adolescents' risk-taking behaviors were from the Youth Risk Behavior Survey (YRBS), a national school-based survey conducted biennially since 1991 to monitor priority health-risk behaviors among high school students. The YRBS, administered by the Centers for Disease Control, provides nationally and, for states who choose to participate, state-representative estimates of high school students' health behaviors.

Our analysis uses state-level YRBS data from 2017. During that period, data for 13 districts from 5 states were available for public use (Illinois, Florida, New York, California, and New York). The YRBS data are weighted to adjust for nonresponse and oversampling of African American and Hispanic participants, as well as for the complex survey sampling design.

We examined five risk-taking behavior outcomes, all based on youth self-report. Factor analyses were conducted to create the following outcome variables – sexual risk taking, tobacco use, drug use, alcohol use, and suicide risk. To capture sexual risk taking, participants were asked two

questions about contraceptive use during their last sexual encounter. The first question asked about condom use, and the second question asked about use of any method of birth control. Adolescents who indicated no condom use and no birth control method were coded as at risk (i.e. 0 = not at risk, 1 = at risk). The tobacco use variable was created using 4 survey items which asked participants about cigarette, cigar, and vapor use, as well as whether or not adolescents reported ever having smoked cigarettes. When creating the drug use variable, initial factor analyses included five drugs as one factor. Due to issues of collinearity in analyses, drug use was split into two types of drug use – marijuana use and “hard drug” use, such as cocaine, heroin, methamphetamine, and ecstasy. The alcohol use variable was constructed using 6 survey questions. Adolescents were asked about age of first alcohol initiation, whether or not they had ever consumed alcohol, frequency of alcohol use, how alcohol is acquired, how often they engage in binge drinking, and the largest quantity of drinks ever consumed.

Sample

Table 1 displays sample descriptive statistics. The majority of participants in our sample were Black (61%), followed by White (39%) (N=13,314). The average age of participants at the time of interview was 15.8. The sample is fairly evenly split among grades.

Table 1. Descriptive Statistics (percentages and means)

Sample characteristics	All	White	Black
Race/ethnicity			
White	0.39	-	-
Black	0.61	-	-
Current grade			
9th	0.26	0.10	0.15
10th	0.27	0.11	0.16
11th	0.24	0.09	0.14
12th	0.23	0.08	0.15
Age at interview	15.8	15.7	15.9

State-wide police shootings.

The independent variable of interest, state-wide police shootings, came from the Washington Post's database of fatal shootings in the United States by a police officer in the line of duty. The Washington Post data is available beginning in 2015 and provides raw numbers of fatal shootings for each state and the District of Columbia. Our statewide police shooting variable was calculated using the 2016 data (the year prior to when 2017 YRBS participants were surveyed) [36]. Our measure is the rate of deadly police shootings per 100,000 people for each state based on the U. S. Census Bureau resident state population estimates for 2016 [37].

Wealth.

State medians of net-worth were used as a measure of wealth. Estimates of net-worth per household by state in 2013 were modeled using data from the 2013 American Community Survey (ACS), which provides data on housing, demographics, employment, health insurance, and income at the community level for more than two million U. S. households; and the 2014 Survey of Income and

Program Participation (SIPP), which measures income and participation in government programs [38].

Covariates

Age and grade were included as covariates because prior studies have documented their association with risk-taking behaviors. These covariates were created from adolescents' responses to YRBS demographic questions. State was also included as a covariate, as there may be variability in police shootings by geographic location.

RESULTS

Bivariate correlations, means, and standard deviations among study variables are presented in Table 2. A review of bivariate correlations revealed that increased wealth was associated with lower rates of fatal police shootings ($r=-.29, p<.05$). Additionally, as wealth increased alcohol use declined ($r=-.14, p<.05$), while suicide risk increased ($r=.06, p<.05$). As age increased so did marijuana use, alcohol use, and suicide risk ($r=.08, p<.05, r=.13, p<.05$, and $r=.04, p<.05$, respectively). Most risk-taking factors were significantly correlated with one another.

Table 2. Bivariate Correlations, Means, and Standard Deviations for Study Variables (N=13,314)

	1	2	3	4	5	6	7	8	9	10	11	12	13	Mean (SD)
1. Police Shootings	1.00													.24 (.14)
2. Wealth	-0.29	1.00												9.53 (.71)
3. Sexual Risk	0.00	0.01	1.00											-.03 (.98)
4. Tobacco Use	0.01	-0.02	0.40	1.00										.03 (.96)
5. Drug Use (Marijuana)	0.04	-0.01	0.12	0.55	1.00									3.33 (1.40)
6. Drug Use (Cocaine, Heroin)	0.00	0.02	0.24	0.78	0.58	1.00								.03 (.97)
7. Alcohol Use	-0.14	-0.15	0.09	0.64	0.36	0.94	1.00							.05 (.97)
8. Suicide	0.06	-0.04	0.13	0.40	0.05	0.16	0.14	1.00						-.03 (.97)
9. Age	0.19	-0.17	0.03	0.03	0.08	-0.04	0.13	0.04	1.00					4.79 (1.27)
10. Sex	-0.01	0.01	-0.10	0.12	0.15	0.20	0.20	-0.13	0.04	1.00				1.48 (.50)
11. Race	-0.07	0.06	0.05	0.02	0.01	-0.49	-0.19	0.01	0.06	0.02	1.00			1.61 (.49)
12. State	-0.76	-0.20	0.00	-0.01	-0.03	-0.01	0.11	-0.05	-0.1	0.01	-0.03	1.00		2.78 (.91)
13. Grade	0.01	0.02	0.02	-0.26	0.05	0.09	0.17	0.02	0.83	0.02	0.04	-0.04	1.0 0	2.44 (1.11)

Note: Bold estimates are significant at the .05 level.

Sexual Risk Taking

There were no significant findings for black adolescents' sexual risk taking and state-wide police shootings in any of the models. The addition of wealth to the second model contributed significantly to white adolescent's sexual risk taking ($R^2\Delta F=4.71, p<.05$). As median wealth increased, sexual risk taking behaviors decreased ($\beta= -.07, p<.05$). Table 3 presents the results of the associations among state-wide police shootings, wealth, and sexual risk taking behaviors for black and white adolescents.

Table 3. Summary of Hierarchical Regression Analysis Depicting Adolescents' Sexual Risk Taking (N=13,314)

Sexual Risk Taking										
	Black					White				
	B	SE B	β	R ²	R ² Δ	B	SE B	β	R ²	R ² Δ
Model 1										
Police Shootings	-0.04	0.16	-0.01	0.00		0.19	0.2	0.03	0	
Model 2										
Wealth	0.05	0.03	0.04	0.00	0.00	-0.09*	0.04	-0.07*	0.01	0.00*
Model 3										
State	0.05	0.07	0.06	0.00	0.00	0.01	0.04	0.01	0.01	0.00
Age	0.01	0.03	0.01			0.06	0.06	0.07		
Grade										
9										
10	0.06	0.09	0.02			-0.06	0.12	-0.03		
11	0.05	0.1	0.02			-0.16	0.14	-0.08		
12	0.1	0.12	0.05			-0.14	0.18	-0.08		

Note: *** $p<.001$ ** $p<.01$ * $p<.05$ † $p<.10$

Tobacco Use

State-wide police shootings and wealth were not significantly associated with tobacco use for black adolescents in any of the models. Age was the only significant covariate in the final model, such that age and tobacco use were positively associated ($\beta=.43, p<.01$). A similar story emerged for white adolescents. Although there were no significant associations among tobacco use, state-wide police shootings, and wealth, several demographic controls were significant in the final model. Age and grade were positively related to tobacco use ($\beta=.24, p<.05$, $\beta=.65, p<.001$, $\beta=.30, p<.01$, and $\beta=.24, p<.05$, respectively). Adding these controls in the final step contributed significantly to the overall model ($R^2\Delta F=5.87, p<.001$). Table 4 presents the results of the associations among state-wide police shootings, wealth, and tobacco use for black and white adolescents.

Table 4. Summary of Hierarchical Regression Analysis Depicting Adolescents' Tobacco Use (N=13,314)

Tobacco Use										
	Black					White				
	B	SE B	β	R ²	R ² Δ	B	SE B	β	R ²	R ² Δ
Model 1										
Police Shootings	0.29	1.04	0.03	0.00		-0.02	0.68	0.00	0.00	
Model 2										
Wealth	0.21	0.18	0.11	0.01	0.01	-0.11	0.09	-0.1	0.01	0.01
Model 3										
State	0.18	0.45	0.13	0.15	0.13	-0.13	0.13	-0.14	0.24***	0.23***
Age	0.36	0.11	0.43**			0.21	0.1	0.24		
Grade										
9	0.87	0.75	0.24			1.68	0.29	0.65***		
10	0.82	0.49	0.36			0.79	0.25	0.30**		
11	0.32	0.42	0.13			0.48	0.19	0.24		
12										

Note: *** $p < .001$ ** $p < .01$ * $p < .05$ † $p < .10$

Drug Use

State-wide police shootings and wealth were not significantly associated with marijuana use for black adolescents in any of the models. Grade (i.e. 10th) was the only significant covariate in the final model ($\beta = .10$, $p < .05$). Adding covariates in the final step contributed significantly to the overall model ($R^2\Delta F = 3.08$, $p < .01$). State-wide police shootings were not significantly associated with marijuana use for white adolescents. Wealth, however, was significantly and negatively associated with marijuana use when added in the second model ($\beta = -.07$, $p < .05$). As wealth increased, marijuana use declined. Although no covariates were significant, adding them to the final step significantly contributed to the overall model ($R^2\Delta F = 3.22$, $p < .01$).

State-wide police shootings were significantly and positively associated with hard drug use (i.e. cocaine, heroin, methamphetamine, and ecstasy) for black adolescents ($\beta = .23$, $p < .05$). No significant findings emerged for white adolescents. State was the only significant covariate in the final model for both black and white adolescents ($\beta = .73$, $p < .01$ and $\beta = -.54$, $p < .05$, respectively). Table 5 presents the results of the associations among state-wide police shootings, wealth, and drug use for black and white adolescents.

Table 5. Summary of Hierarchical Regression Analysis Depicting Adolescents' Drug Use (N=13,314)

Drug Use (Marijuana)										
	Black					White				
	B	SE B	β	R ²	R ² Δ	B	SE B	β	R ²	R ² Δ
Model 1										
Police Shootings	0.41	0.26	0.04	0.00		0.28	0.31	0.03	0.00	
Model 2										
Wealth	0.08	0.05	0.04	0.00		-0.15	0.07	-0.07*	0.01	0.01
Model 3										
State	0.12	0.13	0.09	0.02**	0.01**	-0.02	0.07	-0.02	0.02*	.02*
Age	0.09	0.05	0.08			0.1	0.08	0.08		
Grade										
9th						0.12	0.25	0.03		
10th	0.31	0.12	0.10*			-0.23	0.18	-0.07		
11th	0.11	0.15	0.03			-0.22	0.14	-0.07†		
12th	0.09	0.18	0.03							

Drug Use (Cocaine, Heroin, Meth, Ecstasy)										
	Black					White				
	B	SE B	β	R ²	R ² Δ	B	SE B	β	R ²	R ² Δ
Model 1										
Police Shootings	2.20	1.02	0.23*	0.05*		-1.31	2.13	-0.08	0.01	
Model 2										
Wealth	0.16	0.32	0.15	0.07	0.01	0.05	0.46	0.02	0.01	0.00
Model 3										
State	0.61	0.18	0.73**	0.16	0.10	-0.71	0.32	-0.54*	0.18	0.18
Age	0.01	0.10	0.02			-0.11	0.09	-0.15		
Grade										
9th	0.05	0.44	0.04			-0.84	0.52	-0.38		
10th	0.24	0.40	0.16			-0.23	0.49	-0.11		
11th	0.09	0.25	0.06			-0.43	0.58	-0.14		
12th										

Alcohol Use

Alcohol use was significantly and positively associated with state-wide police shootings for black adolescents ($\beta=0.07$, $p<.05$). Wealth was significantly and negatively related to alcohol use in the second model ($\beta= -.13$, $p<.01$). Models two and three contributed significantly to the overall model ($R^2\Delta F=6.92$, $p<.01$ and $R^2\Delta F=10.09$, $p<.001$, respectively). There were no significant associations for white adolescents' alcohol use in models one and two. Adding controls to the final step contributed significantly to the overall model ($R^2\Delta F=15.90$, $p<.001$). Table 6 presents the results of the associations among state-wide police shootings, wealth, and alcohol use for black and white adolescents.

Table 6. Summary of Hierarchical Regression Analysis Depicting Adolescents' Alcohol Use (N=13,314)

Alcohol Use										
	Black					White				
	B	SE B	β	R ²	R ² Δ	B	SE B	β	R ²	R ² Δ
Model 1										
Police Shootings	.24	.10	.07*	.00		.29	.24	.04	.00	
Model 2										
Wealth	-.11	.04	-.13**	.01**	.00**	.05	.10	.03	.00	.00
Model 3										
State	-.09	.03	-.19	.03** *	.02** *	.00	.06	.00	.07** *	.06***
Age	.00**	.03	.01			-.04	.07	-.04		
Grade										
9 th										
10 th	.08	.05	.05			.29	.12	.11*		
11 th	.13	.07	.08			.58	.18	.20**		
12 th	.29	.09	.18			.97	.25	.33***		

Note: ***p<.001 **p<.01 *p<.05 †p<.10

Suicide Risk

State-wide police shootings were significantly and positively associated with suicide risk for black adolescents ($\beta=.04$, $p<.01$). Similarly, a significant positive association emerged between state-wide police shootings and suicide risk for white adolescents ($\beta=.09$, $p<.001$). However, wealth was significantly and negatively associated with suicide risk when added to the second model ($\beta= -.06$, $p<.001$). The second and third steps contributed significantly to the final model ($R^2\Delta$ F=14.24, $p<.001$ and $R^2\Delta$ F=2.87, $p<.01$, respectively). Table 7 presents the results of the associations among state-wide police shootings, wealth, and suicide risk for black and white adolescents.

Table 7. Summary of Hierarchical Regression Analysis Depicting Adolescents' Suicide Risk (N=13,314)

Suicide Risk										
	Black					White				
	B	SE B	β	R ²	R ² Δ	B	SE B	β	R ²	R ² Δ
Model 1										
Police Shootings	0.28	0.09	0.04**	.00**		0.62	0.11	0.09***	.01***	
Model 2										
Wealth	0.01	0.02	0.00	.00**	0.00	-0.08	0.02	-.06***	0.01***	0.01***
Model 3										
State	-0.04	0.04	-0.03	.00*	0.00	-0.04	0.03	-0.03	0.01***	0.01*
Age	0.05	0.02	0.06*			0.05	0.03	0.06		
Grade										
9 th										
10 th	0.12	0.07	0.06†			-0.10	0.05	-0.05*		
11 th	0.08	0.05	0.04			-0.04	0.08	-0.02		
12 th	0.07	0.04	0.03†			-0.13	0.10	-0.05		

Note: ***p<.001 **p<.01 *p<.05 †p<.10

DISCUSSION

Despite growing theoretical and empirical evidence that broader social contexts are important predictors of adolescent development, few studies have examined the roles of state-wide fatal police shootings and wealth in shaping adolescent well-being. This study represents the first step towards unearthing potential associations and racial differences among state-wide police shootings, wealth, and risk-taking behaviors of black and white adolescents. Study findings and their implications are discussed further below.

Data from this study revealed racial differences in the ways that adolescents' reacted to state-wide police shootings. Black youth reported significant instances of risk-taking behavior, as measured by drug use, alcohol use, and suicide risk. While state-wide police shootings were not associated with any risk-taking behaviors among white adolescents, wealth was associated with lower risk-taking behavior among this group when added to the model. Wealth was only associated with lower alcohol use among black adolescents. These racial differences suggest that black adolescents may be particularly sensitive to larger social influences.

There are several explanations for why state-wide police shootings would be associated with less favorable behaviors among black, but not white, adolescents. While the overall occurrence of fatal police shootings in 2016 was low across the five states included in the present study, overall rates of fatal police shootings disproportionately involve black victims compared to white victims [39]. Disruptions to already heightened political and social climates may weaken adolescents' outlook about the future. This may be especially true for black youth, as they are more likely to be economically marginalized [30]. Wealth is a vital resource to families. Given the racial disparities in wealth, black youth may be put at greater risk for exhibiting unfavorable behaviors in the wake of intensified social environments. As evidenced by our findings, wealth serves as a protective factor against risk-taking behaviors among youth. State-wide police shootings serve as an exogenous shock to adolescents, regardless of whether or not a shooting occurred in their respective community. Other studies exploring similar exosystem influences such as job loss, government policies, and neighborhood characteristics have revealed similar results [28, 29, 40].

CONCLUSION

Changes in the political and social climates have led to social justice efforts aimed at reducing police discrimination and violence. Researchers should not underestimate the effects of exogenous shocks, such as police shootings, to families. Adolescence is a developmental period marked by solid brain development compared to earlier stages of development. However, the brain is still not *fully* developed. In fact, the brain's psychological capabilities that improve decision making and moderate risk taking, such as impulse control, delay of gratification, and peer influence resistance, continue to develop well into young adulthood [41]. Efforts aimed at addressing adolescents' decision-making, impulsivity, and shortsightedness may be short-lived. Instead, policy-makers should revisit policies such as cigarette pricing, alcohol sale law implementation, and contraceptive access and services in an effort to effectively limit adolescent risk-taking. As researchers, practitioners, and policy makers seek a better understanding of the disparities in adolescent risk-taking behaviors, they should consider the larger social and economic context in which youth reside.

Limitations

This study provides valuable information about the relationships among state-wide police shootings, wealth, and adolescent risk-taking behaviors. However, several limitations should be noted. While we do not control for neighborhood characteristics, future studies should tease apart the role of neighborhood environments. Research on residential segregation suggest that black and white youth confront substantially different neighborhood environments. The negative behaviors that result from exogenous shocks could also be a reflection of racially segregated neighborhood milieus. Moreover, the YRBS is cross-sectional and does not provide family- and community-level demographic variables such as socioeconomic status, family structure, neighborhood characteristics, and peer relationships. Therefore, we were unable to ascertain potential mechanisms by which state-wide police shootings and wealth affect youths' risk-taking behaviors. Another limitation is our measure of wealth, which is a modeled estimate that may not capture differences at the district and city level within states. Despite these limitations, we have provided important results showing that state-wide police shootings lead to risk-taking behavior among black adolescents. Our findings lay the groundwork for future studies exploring the relationships among prominent shifts in the social climate, wealth, and adolescents' risk-taking behaviors. The addition of possible mechanisms in future studies may better explain racial differences and unearth further costs and safeguards of state-wide police shootings to adolescent well-being.

Author Contributions

Conceptualization, N.S., J.H. and C.S.; methodology, N.S. and C.S.; formal analysis, N.S. and C.S.; investigation, N.S., J.H., C.S., and D.Y.; writing—original draft preparation, N.S., J.H., C.S., and D.Y.; writing—review and editing, N.S., J.H., C.S., and D.Y.; visualization, N.S., J.H., C.S., and D.Y.; supervision, N.S. All authors have read and agreed to the published version of the manuscript.

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Conflicts of Interest

The authors declare no conflict of interest.