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Original Paper

Parental Education and Spanking of American Children: Blacks' Diminished Returns

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Abstract

Background: *Based on the Minorities' Diminished Returns (MDRs) framework, high socioeconomic status (SES) indicators such as parental education shows weaker protective effects against adverse experiences for Blacks than Whites. For example, Black children with highly educated parents report high levels of depression, anxiety, suicide, smoking, obesity, and chronic disease. Limited knowledge exists on MDRs of parental education on the child's exposure to spanking by the mother.* ***Aims:*** *Built on the MDRs framework, we tested the hypothesis of whether the effect of parental education on the child's exposure to spanking by the mother differs in Black and White families. We hypothesized that: 1) there is an inverse association between mothers' educational attainment and child spanking, and 2) the effect of mothers' educational attainment on mothers' spanking of the child is weaker for Black than White families.* ***Methods:*** *We used data from the Fragile Families and Child Well-being Study (FFCWS), a 9-year follow up study of a random sample of births in cities larger than 200,000 population. In this analysis, 2722 Black or White families were followed. The main predictor was parental educational attainment at birth. The outcomes were exposure to spanking at ages 3, 5, and 9.Logisticregression was used for data analysis.* ***Results:*** *Higher parental educational attainment at birth was inversely associated with the child's exposure to spanking by the mother among Whites, not Blacks. We also found a significant interaction between parental educational attainment at birth and race, suggesting that the associations between parental education and child exposure to spanking by the mother at ages3, 5, and 9were weaker for Black than White families.*

Conclusions: *Diminished returns of parental educational attainment in terms of reducing children's exposure to trauma and stress may be a mechanism that contributes to racial health disparities, particularly poor health of children in highly educated Black families. That is a smaller protective effect*

of parental education on reducing undesired exposures for Black than White children may be one of the mechanisms that may explain why children develop worse than expected physical, mental, and behavioral health in high SES Black families. Not all health disparities are due to racial differences in SES, but some of them are also secondary to the diminishing returns of socioeconomic status indicators such as parental education for racial minorities. Research should study contextual, structural, family, and behavioral factors that reduce Black families' ability to mobilize their human capital and secure health outcomes for themselves and their children.

Keywords

African Americans, Blacks, parental health, socioeconomic status, socioeconomic education; discipline, child abuse, spanking, physical punishment

1. Introduction

High Socioeconomic Status (SES), particularly parental education, is a Strong social Determinant Of Health (SDOH) and human behaviors ("Poverty, low birth weight and brain size", 2017). Individuals with higher parental education show better health (Blumenshine, Egerter, Barclay, Cubbin, & Braveman, 2010). High parental education is also among the strongest indicators of SES and SDOH (Silvestrin et al., 2013) and shows protective effects against child abuse, child neglect, physical punishment, inappropriate or harsh parenting, and spanking (Afifi, Fortier, Sareen, & Taillieu, 2019; DeGarmo, Forgatch, & Martinez, 1999; Eamon, 2002; Grogan-Kaylor, 2004; McLeod, Kruttschnitt, & Dornfeld, 1994; Paschall, Ringwalt, & Flewelling, 2003; Straus & Mouradian, 1998; Straus, Sugarman, & Giles-Sims, 1997). In fact, these parental processes and behaviors may be one of the many mechanisms by which high SES parents raise children who are emotionally stable and physically healthy (Chuang, Ennett, Bauman, & Foshee, 2005; Mistry, Biesanz, Chien, Howes, & Benner, 2008; Odgers et al., 2012). Spanking is the most common type of physical punishment (Shawna J Lee, Altschul, & Gershoff, 2015), which is associated with a wide range of undesired behavioral and mental health outcomes (Gershoff & Grogan-Kaylor, 2016), such as antisocial behaviors and conduct disorder both in adolescence as well as adulthood (Gershoff, Ansari, Purtell, & Sexton, 2016; Gershoff, Lansford, Sexton, Davis-Kean, & Sameroff, 2012; Gromoske & Maguire-Jack, 2012; Ma, 2016; Ma, Grogan-Kaylor, & Klein, 2018; Julie Ma, Andrew Grogan-Kaylor, & Shawna, J. Lee, 2018; McLeod et al., 1994; Okuzono, Fujiwara, Kato, & Kawachi, 2017). There is also a large racial and SES gap in the use of physical discipline and spanking, with low SES and Black children experiencing far more spanking than high SES and White children (Altschul, Lee, & Gershoff, 2016; Berlin et al., 2009; Day, Peterson, & McCracken, 1998; Giles-Sims, Straus, & Sugarman, 1995; Shawna et al., 2015; MacMillan et al., 1999; Oscea et al., 2010).

There are, however, variations in the effects of SES and SDOH indicators depending on social context and demographic factors (Campbell et al., 2018). In other terms, the protective effects of SES and SDOH indicators such as parental education depend on race and place, suggesting a complex interplay between race, place, and resources on shaping populations' and individuals' health outcomes (Kothari et al.,

2016). This pattern is also true for spanking and physical punishment (Buemi, 2009; Coley, Kull, & Carrano, 2014; Vittrup & Holden, 2010). Research has shown that spanking may have different predictors and risk factors by race (Berlin et al., 2009).

A growing body of research has suggested that SES and SDOH indicators, such as parental educational attainment, maybe less protective for Black than White families (Assari, 2017; Shervin Assari, 2018a). For parents themselves, educational attainment better increases the exercise, diet, health, and job quality of Whites than Blacks (Shervin Assari, 2019a; S. Assari & M. Bazargan, 2019; S Assari & Lankarani, 2018; S. Assari, Preiser, & Kelly, 2018). These studies show interactions between race and SES which means variation in the protective effects of SES across contexts, subpopulations, and groups.

Most studies on racial inequalities in outcomes have focused on the racial gap in exposure to risk and protective factors (Perneger, Whelton, & Klag, 1995). For example, racial differences in spanking are attributed to racial differences in parenting, SES, or endorsement of spanking as an acceptable disciplinary behavior (Heffer & Kelley, 1987). Other groups have attributed the same inequalities to cultural differences between Blacks and Whites (Brown, Holden, & Ashraf, 2018; Dodge, McLoyd, & Lansford, 2005; Honig & Chung, 1989; Plessy, Long, & Kelley, 2018; Zegiob & Forehand, 1975). There is, however, another explanation, which is informed by Minorities' Diminished Returns (MDRs) (S. Assari, 2017; Shervin Assari, 2018a).

Although historically neglected, attention has been recently given to the contributions of MDRs as a source of racial and ethnic health disparities and inequalities in middle-class Black families, particularly in urban settings (Assari, 2017; Shervin Assari, 2018a). According to the MDRs framework, SES and SDOH indicators, particularly educational attainment, show weaker effects and generate fewer positive health outcomes for Black than White families (S. Assari, 2017; Shervin Assari, 2018a). As a result of these MDRs, we observe worse than expected health outcomes for children from highly educated Black families, a pattern not seen for White families (B. M. Assari S, S. Assari, & Mistry, 2018; S. Assari, H. T. Schatten et al., 2019). For example, children from highly educated parents show less aggression, tobacco use, obesity, chronic disease, and poor school performance if they are White, but not if they are Black (Shervin Assari, Boyce, Bazargan, & Caldwell, 2020; Shervin Assari, Boyce, Bazargan, Caldwell, & Zimmerman, 2020; Shervin Assari, Boyce, Bazargan, Mincy, & Caldwell, 2019; Shervin Assari, Shanika Boyce, Cleopatra H. Caldwell, & Mohsen Bazargan, 2020; S. Assari, S. Boyce, C. H. Caldwell, & M. Bazargan, 2020; S. Assari, Caldwell, & Bazargan, 2019; M. R. Assari S, Caldwell CH, Bazargan M. ; Boyce, Bazargan, Caldwell, Zimmerman, & Assari, 2020; Shanika Boyce, 2020).

While parental education generates fewer health outcomes across domains for Black than White individuals (S. Assari, 2018f; Assari S, 2019), we are unaware of any longitudinal studies that show differential effects of parental educational attainment (e.g., MDRs) on the child exposure to spanking by the mother. Recent research has shown that parental education shows a weaker than expected protective effect on childhood trauma for Black than White families (Shervin Assari, 2020). However, this study was focused on all types of stressors and did not test if harsh parenting, physical punishment, disciplinary

behavior, or spanking were different across race by education groups. Thus, any studies on MDRs of parental education on child exposure to spanking by the mother would be a unique contribution to the literature.

1.1 Aims

Built on the MDRs literature (S. Assari, 2017; Shervin Assari, 2018a), and built on our past work that shows parental education has a weaker effect on reducing childhood trauma and stress for Black than White families (Assari & Lankarani, 2018), we conducted this study with two aims in mind: First, to test the effect of parental education on the child's exposure to spanking by the mother, overall. Second, to compare the protective effect of parental educational attainment on the child's exposure to spanking by the mother between Black and White families. We hypothesized an inverse association between parental educational attainment and children's exposure to spanking by the mother (hypothesis 1). We also expected a weaker protective effect of parental educational attainment on children's exposure to spanking by the mother for Black than White families (hypothesis 2). If our hypothesis 2 gets supported, then Black children would have high exposure to spanking, regardless of their parental education. This would be in contrast to White children whose exposure to spanking would go down as maternal education goes up.

2. Methods

2.1 Design and Setting

This longitudinal study used nine years of follow up of a national urban sample of newborns. The Fragile Families and Child Wellbeing Study (FFCWS) was conducted from 1998 to 2016. The FFCWS is an ongoing longitudinal study. However, the most current wave of data collection occurred in the year 2016. The FFCWS has followed racially diverse and economically fragile families from the birth of their new borns to when the child is 15 years old. A full description of the FFCW sampling, design, and methodology of the study are available elsewhere (Waldfogel, Craigie, & Brooks-Gunn, 2010). Here we provide a brief description of the FFCWS sample, sampling, and methods.

2.2 FFCWS Sample, Sampling, and Analytical Sample

The FFCWS recruited newborns that were from economically challenged families. These births were selected from 20 US cities in which the population was 200,000 or more people. The FFCWS has used a random sample of urban families. This, however, included an oversampling of non-married and Black and Hispanic couples (Waldfogel et al., 2010). Most births in the FFCWS were non-marital, low SES, racially, and ethnic minorities. As a result, the sample overall reflects the economically challenged and fragile families. Despite a random sample, this national sample is not representative of the US general population. The baseline sample size of the FFCWS was composed of 4,898 families. In the current analysis, we only included 2722 individuals who were followed from birth to age 3, 5, and 9, and had complete data on race, maternal education, and at least one spanking measure. The FFCWS data on 15th year was available. However, age 15 did not have data on spanking.

2.3 Study Constructs

2.3.1 Predictor Variables

The main independent variable *was* parental educational attainment at the time of the birth of the newborn (wave 1). Parental educational attainment was a four-level variable: 1) "less than high school", 2) "high school completed", 3) "some college education", and 4) "college completed". This variable was treated as a categorical variable with "less than high school" as the reference level.

2.3.2 Covariate

Child gender, parental age at childbirth, family marital status, and poverty status at baseline were the study covariates. Child gender was a dichotomous variable: 1 for female, and 0 for male. Parental age at birth was a continuous measure and reported by the mother. Poverty status at birth was calculated based on the household income level and household size. Family structure at birth was a dichotomous variable: married=1, non-married=0.

2.3.3 Dependent Variables

Our outcomes were the child's exposure to spanking by the mother measured using the following single item in years 3, 5, and 9. Mother was asked, "Have you spanked your child in the past month?" (Lee, Grogan-Kaylor, & Berger, 2014; Ma, Grogan-Kaylor, & Lee, 2018; Mackenzie, Nicklas, Brooks-Gunn, & Waldfogel, 2011, 2014; MacKenzie, Nicklas, Waldfogel, & Brooks-Gunn, 2013; Ragavan, Griffith, Bair-Merritt, Cabral, & Kistin, 2019; Taylor, Lee, Guterman, & Rice, 2010; Taylor, Manganello, Lee, & Rice, 2010; Ward, Lee, Limb, & Grogan-Kaylor, 2019). Responses were yes, no, refuse to answer, or do not know. This variable was coded as 1 for presence and 0 for the absence of spanking. These were treated as three distinct and a combined binary variable.

2.3.4 Moderator

Race, the moderator, was self-identified by the mother. This variable was operational zed as a dichotomous variable: Blacks=1, Whites=0. All participants were non-Hispanic.

2.4 Statistical Analysis

The SPSS 22.0 (SPSS Inc., Chicago, IL, USA) was used for the data analysis. To describe the sample, we applied univariate analyses and reported frequency (%) and mean (standard deviation) for categorical and continuous measures. For the multivariable analysis, we used a series of nested Logistic regression models. First, we ran models in the overall sample, and then we ran models specific to race. For aim 1, we ran Model 1. For aim 2, we ran three other models. In these models, the child's exposure to spanking by the mother at age 3, 5, 9, and all were the outcomes, and parental education at birth was the independent variable (categorical variable). *Model 1* only included the main effects. *Model 2* included three race by parental education interaction terms. *Model 3* and *Model 4* tested the same models in White and Black families. Odds Ratio (OR), 95% confidence intervals (95% CI), and p-values were reported.

2.5 Ethics

The FFCWS study protocol and ethics were approved by the Institutional Review Board (IRB) of Princeton University. Mothers (and fathers, if present) provided written informed consent. Children provided assent at age 15. All the FFCWS data were collected, stored, and analyzed anonymously. Respondents received some financial compensation for their participation.

3. Results

3.1 Descriptive Statistics

This study included 2722 families who were either Black (n = 2027) or White (n = 746). All these families were followed from birth to the time that their child was 15 years old. Thus, all these families had data on demographics, SES at wave 1, as well as children outcomes (child exposure to spank by the mother) at ages 3, 5, and 9, and overall.

Table 1 shows a summary of the descriptive statistics of the sample overall and by race/ethnicity. Most White and Black families were composed of married and unmarried couples. Parental age, educational attainment, and family income were all significantly lower in Black than White families. Black children had higher odds of exposure to spanking by the mother at ages 3, 5, and 9 than White children.

Table 1. Descriptive Overall and by Race/Ethnicity (n = 2722)

	All		White		Black	
	n	%	n	%	n	%
Race						
White	746	26.9	746	100.0		
Black	2027	73.1			2027	100.0
Gender						
Male	1468	52.9	395	52.9	1073	52.9
Female	1305	47.1	351	47.1	954	47.1
Marital Status*,[a]						
Non-married	2087	75.3	316	42.4	1771	87.4
Married	686	24.7	430	57.6	256	12.6
Poverty*,[a]						
Not Poor	1800	64.9	670	89.8	1130	55.7
Poor	973	35.1	76	10.2	897	44.3
Education*,[a]						
Less than high school	779	28.1	107	14.3	672	33.2
High school or equivalent degree	911	32.9	175	23.5	736	36.3
Some college education	720	26.0	207	27.7	513	25.3

College degree	363	13.1	257	34.5	106	5.2
Spanking 3th Year*,a						
No	1812	69.1	602	83.3	1210	63.7
Yes	811	30.9	121	16.7	690	36.3
Spanking 5th year*,a						
No	1095	43.3	324	46.5	771	42.1
Yes	1432	56.7	373	53.5	1059	57.9
Spanking 9th Year*,a						
No	1239	49.7	378	57.3	861	46.9
Yes	1255	50.3	282	42.7	973	53.1
Spanking-Any*,a						
No	875	31.6	302	40.5	573	28.3
Yes	1898	68.4	444	59.5	1454	71.7
	Mean	**SD**	**Mean**	**SD**	**Mean**	**SD**
Maternal Age at Birth*,b	25.42	6.19	27.89	6.62	24.52	5.77

* $p< 0.05$ (Blacks compared to Whites); [a] Pearson Chi-square test; [b] Independent sample t-test.

Tables 2 to 5 show the main results of four logistic regressions for each outcome. These models were estimated in the overall sample and then in race groups to test the effects of parental education on the child's exposure to spanking by the mother at ages 3, 5, 9, and overall. *Model 1*, which did not include our interaction term, showed that high parental education was not associated with the child's exposure to spanking by the mother in the overall sample. *Model 2*, which included an interaction term between race and mother's education, showed a significant interaction between race and parental education level, suggesting a larger protective effect of high parental education on the child's exposure to spanking by the mother, at all ages, for Whites than Blacks. These tables also present the statistics for two other logistic regressions that were performed to assess the association between parental education and the child's exposure to spanking by the mother at ages 3, 5, 9, and any time for racial groups. *Model 3* (Whites) and *Model 4* (Blacks) always showed an inverse and positive association between parental education and the child's exposure to spanking by the mother in White and Black families, respectively. This pattern suggested that while for White families, high maternal education was protective, for Black families, high maternal education was associated with higher odds of spanking by the mother. While some nuances existed, this pattern was mainly consistent across outcomes.

Table 2. Logistic Regression Models with Child Exposure to Spanking by the Mother at Ages 3 to 9 (any) as the Outcome in the Overall Sample and by Race

	Model 1 (Main Effects)				Model 2 (M1 + Interaction)				Model 2 (Whites)				Model 4 (Blacks)			
	OR	95% CI		p	OR	95 %		p	OR	95% CI		p	OR	95% CI		P
Race (Black)	1.57	1.28	1.94	0.000	0.75	0.47	1.21	0.238								
Gender (Female)	0.81	0.69	0.95	0.010	0.80	0.68	0.94	0.007	0.86	0.63	1.16	0.309	0.78	0.64	0.94	0.011
Married family	1.00	0.78	1.28	0.999	1.04	0.81	1.34	0.753	1.15	0.77	1.72	0.503	0.96	0.70	1.32	0.785
Poor Family	0.86	0.71	1.05	0.139	0.90	0.73	1.09	0.279	0.63	0.37	1.08	0.096	0.94	0.76	1.17	0.583
Mother Age at Childbirth	0.96	0.95	0.98	0.000	0.96	0.95	0.98	0.000	0.96	0.93	0.99	0.005	0.96	0.95	0.98	0.000
Mother Education				0.108				0.000				0.003				0.004
High School Graduate	1.22	0.98	1.51	0.081	0.57	0.32	0.95	0.030	0.52	0.30	0.90	0.019	1.43	1.12	1.82	0.004
Some college	1.26	0.98	1.61	0.066	0.75	0.44	1.28	0.295	0.68	0.38	1.19	0.175	1.37	1.04	1.81	0.027
College Graduate	1.00	0.71	1.41	0.990	0.42	0.24	0.73	0.002	0.36	0.20	0.67	0.001	2.21	1.33	3.68	0.003
Mother Education x Race								0.000								
High School Graduate x Race					2.55	1.43	4.57	0.002								
Some college x					1.77	0.98	3.17	0.057								

Race												
College Graduate x Race				5.04	2.48	10.24	0.000					
Constant	4.41		0.000	8.08		0.000	9.19		0.000	5.90		0.000

Overall models are statistically significant; Outcome: child exposure to spanking by the mother; Confidence Interval (CI).

Table 3. Logistic Regression Models with Child Exposure to Spanking by the Mother at Age 3 as the Outcome in the Overall Sample and by Race

	Model 1 (Main Effects)				Model 2 (M1 + Interaction)				Model 2 (Whites)				Model 4 (Blacks)			
	OR	95% CI		p	OR	95% CI		p	OR	95% CI		p	OR	95% CI		P
Race (Black)	2.48	1.95	3.17	0.000	0.87	0.56	1.36	0.547								
Gender (Female)	0.86	0.73	1.02	0.085	0.85	0.72	1.01	0.073	0.93	0.62	1.40	0.732	0.84	0.70	1.02	0.077
Married family	0.87	0.67	1.15	0.328	0.94	0.71	1.23	0.636	1.18	0.70	2.02	0.533	0.83	0.60	1.15	0.261
Poor Family	0.84	0.69	1.02	0.078	0.88	0.72	1.07	0.199	0.64	0.32	1.28	0.210	0.90	0.73	1.11	0.337
Mother Age at Childbirth	0.96	0.95	0.98	0.000	0.97	0.95	0.98	0.000	0.98	0.94	1.02	0.356	0.96	0.94	0.98	0.000
Mother Education				0.164				0.000				0.000				0.023
High School Graduate	1.14	0.91	1.41	0.248	0.41	0.24	0.72	0.002	0.37	0.21	0.65	0.001	1.35	1.07	1.70	0.013
Some college	0.88	0.68	1.13	0.308	0.26	0.14	0.47	0.000	0.20	0.11	0.39	0.000	1.12	0.85	1.47	0.428
College Graduate	0.96	0.65	1.42	0.834	0.26	0.14	0.49	0.000	0.17	0.08	0.36	0.000	1.76	1.08	2.86	0.023

Mother Education x Race							0.000							
High School Graduate x Race				3.20	1.76	5.83	0.000							
Some college x Race				4.14	2.18	7.86	0.000							
College Graduate x Race				6.05	2.92	12.52	0.000							
Constant	0.65		0.067	1.54			0.121	1.07		0.890	1.46			0.107

Overall models are statistically significant; Outcome**:** child exposure to spanking by the mother; Confidence Interval (CI).

Table 4. Logistic Regression Models with Child Exposure to Spanking by the Mother at Age 5 as the Outcome in the Overall Sample and by Race

	Model 1 (Main Effects)				Model 2 (M1 + Interaction)				Model 2 (Whites)				Model 4 (Blacks)			
	OR	95% CI		P	OR	95% CI		p	OR	95% CI		p	OR	95% CI		P
Race (Black)	1.17	0.95	1.44	0.128	0.60	0.38	0.96	0.031								
Gender (Female)	0.89	0.76	1.04	0.154	0.88	0.75	1.04	0.125	0.91	0.73	1.135	0.964	0.84	0.70	1.013	0.083
Married family	1.16	0.91	1.48	0.231	1.22	0.95	1.56	0.114	1.14	0.75	1.722	0.542	1.26	0.92	1.733	0.185
Poor Family	0.89	0.74	1.08	0.230	0.93	0.77	1.13	0.458	0.52	0.30	0.901	0.022	1.09	0.82	1.232	0.982
Mother Age at Childbirth	0.97	0.96	0.99	0.001	0.98	0.96	0.99	0.001	0.96	0.93	0.996	0.026	0.98	0.96	1.001	0.021
Mother				0.13				0.00				0.02				0.10

Education				5				3				4				0
High School Graduate	1.05	0.85	1.30	0.64	0.57	0.34	0.97	0.03	0.55	0.32	0.96	0.03	1.14	0.92	1.45	0.19
Some college	1.22	0.96	1.55	0.10	0.69	0.41	1.17	0.16	0.69	0.39	1.21	0.19	1.34	1.02	1.75	0.03
College Graduate	0.90	0.64	1.25	0.52	0.40	0.23	0.68	0.00	0.43	0.23	0.79	0.00	1.63	1.00	2.67	0.04
Mother Education x Race								0.00								
High School Graduate x Race					2.03	1.15	3.61	0.01								
Some college x Race					1.93	1.08	3.43	0.02								
College Graduate x Race					4.17	2.12	8.19	0.00								
Constant	2.25			0.00	3.85			0.00	6.37			0.00	1.99			0.00
	5			0	5			0	7			0	9			2

Overall models are statistically significant; Outcome**:** child exposure to spanking by the mother; Confidence Interval (CI).

Table 5. Logistic Regression Models with Child Exposure to Spanking by the Mother at Age 9 as the Outcome in the Overall Sample and by Race

	Model 1 (Main Effects)			Model 2 (M1 + Interaction)			Model 2 (Whites)			Model 4 (Blacks)		
	OR	95% CI	p	OR	95% CI	p	OR	95% CI	p	OR	95% CI	p
Race (Black)	1.41	1.14	0.002	0.78	0.49	0.284						
Gender (Female)	0.77	0.66	0.001	0.76	0.65	0.000	0.66	0.48	0.011	0.81	0.67	0.026

Married family	1.11	0.87	1.42	0.397	1.15	0.90	1.48	0.260	1.33	0.86	2.06	0.196	1.05	0.77	1.42	0.765
Poor Family	0.90	0.74	1.08	0.260	0.93	0.77	1.12	0.424	1.08	0.62	1.88	0.792	0.91	0.74	1.11	0.347
Mother Age at Childbirth	0.97	0.95	0.98	0.000	0.97	0.95	0.98	0.000	0.98	0.95	1.01	0.229	0.96	0.94	0.98	0.000
Mother Education				0.011				0.004				0.001				0.018
High School Graduate	1.20	0.97	1.49	0.087	0.66	0.39	1.11	0.119	0.63	0.37	1.08	0.093	1.35	1.07	1.70	0.010
Some college	1.35	1.06	1.71	0.014	0.86	0.51	1.45	0.570	0.77	0.44	1.35	0.365	1.46	1.12	1.91	0.005
College Graduate	0.91	0.65	1.28	0.593	0.44	0.25	0.75	0.003	0.35	0.18	0.65	0.001	1.61	1.00	2.60	0.049
Mother Education x Race								0.003								
High School Graduate x Race					2.03	1.14	3.60	0.016								
Some college x Race					1.66	0.93	2.94	0.084								
College Graduate x Race					3.43	1.76	6.68	0.000								
Constant	1.89			0.003	3.06			0.000	2.23			0.054	2.65			0.000

Overall models are statistically significant; Outcome**:** child exposure to spanking by the mother; Confidence Interval (CI)

4. Discussion

There were three findings: (a) in the pooled sample, parental education and the child's exposure to spanking by the mother at ages 3, 5, and 9, as well as overall were not correlated, (b) high parental education reduced the child's exposure to spanking by the mother at ages 3, 5, 9, and overall, for White but not Black families, and (c) for Black youth, high parental education was associated with an increased, rather than reduced, odds of child spanking across all the measures.

We found that while highly educated White mothers are less likely to spank their child at ages 3, 5, 9, and overall, Black children are at high risk of being exposed to spanking by their mothers, particularly when their maternal education is high. That is, highly educated Black families use spanking against their children, and this pattern is stable over time. For White families, however, higher maternal education means a lower risk of spanking.

This pattern is an indicator of MDRs of parental education on the child's exposure to spanking by the mother and is similar to what we have shown before on MDRs of parental education on the exposure of the child to trauma. In a recent analysis of data from 4696 NHW or NHB American 8-11-year-old children from the ABCD Study, parental educational attainment and family income were measured. Main outcomes were exposure to 1 or 2+ childhood traumas. Authors applied polynomial regression and observed that high parental education and family income both had protective effects on childhood trauma. Although children from high income and highly educated families were less likely to be exposed to childhood trauma, race showed significant interactions with both parental education and family income, that was indicative of the systematically weaker protective effect of parental education and family income on reducing exposure to trauma of Black than White children. Similarly, race-specific models showed that parental education and family income reduce exposure to childhood trauma for White but not Black children. The result was indicative of the prevalence of high stress of Black children regardless of family SES (Shervin Assari, 2020).

Our findings are also supported by other studies. MDRs of parental education and household income are shown for impulsivity (Assari, Caldwell, & Mincy, 2018a), school achievement (Assari, 2019), school bonding (Assari, 2019b), school achievement (Assari, 2019; Assari & Caldwell, 2019b), aggression (Assariet al., 2019), and tobacco use (Assari, Caldwell, & Bazargan, n.d.). Similarly, Black kids from high SES families remain at high risk of obesity (Assari, Thomas, Caldwell, & Mincy, 2018), anxiety (Assari, Caldwell, & Zimmerman, 2018), depression (Assari, 2018e), as well as chronic diseases (Assari, 2018a) such as ADHD (Assari & Caldwell, 2019a), and asthma (Assari & Moghani Lankarani, 2018a). That is, Black children and children are not much protected by their family SES, which is the essence of the MDRs.

Previous research has attributed MDRs to discrimination (Assari, 2018c; Assari & Moghani Lankarani, 2018b), neighborhood quality (Shervin et al., 2020), labor market discrimination (Preiser et al., 2018), and health behaviors (Shervin, 2019a). The patterns reported here may propose a behavioral explanation for why MDRs exist for both children and adults. Our study suggests that MDRs that are commonly

observed in adults can be traced back to childhood (Assari & Moghani Lankarani, 2018a), adolescence (Assari, Caldwell, & Mincy, 2018a; Assari, Caldwell, & Mincy, 2018b; Assari et al., 2018), and even at birth. As a result of such an unequal start of the life-course, family SES and parental education do not equally translate to health outcomes for Blacks and Whites over the life-course.

Many mechanisms and social processes can explain MDRs (Assari, 2017; Shervin Assari, 2018a). Due to structural and environmental factors, high SES Black families experience high levels of adversity, stress, and prejudice (Assari, 2017; Shervin Assari, 2018a). Highly educated Black people work in worse jobs than their highly educated White counterparts (B. M. Assari S). For example, highly educated ethnic minorities are more likely to be obese (Assari, 2018d; Assari et al., 2018), have a poor diet (Assari & Lankarani, 2018), have a poor exercise routine (Shervin Assari, 2019a), smoke cigarettes (Assari & Mistry, 2018), drink alcohol (Assari, Farokhnia, & Mistry, 2019), be depressed (Assari, 2018e), and have multiple chronic diseases (Assari & Moghani Lankarani, 2018a).

Another mechanism behind MDRs is the higher psychosocial tax that Blacks pay for upward social mobility (S. Assari, 2018g). Blacks report high levels of stress at all mobility statuses. Simultaneously, highly educated Blacks report more stress associated with race and discrimination (Assari, 2018c). Blacks and Whites with the same education do not have similar wealth, which would have operated as a buffer and protect Blacks if life conditions became out of hand (Oliver & Shapiro, 2013; Oliver & Shapiro, 1999). Education also does not have the very same effects on generating income and bringing the Black family out of poverty (Shervin Assari, 2018b).

It is previously shown that context and social group membership both alter causes and consequences of behaviors and health outcomes (Assari, 2014a; S. Assari & Burgard, 2015), mental health (S. Assari, Lankarani, & Lankarani, 2013), and their inter-relations (Shervin Assari, 2014; S. Assari, 2014b; S. Assari, Moazen-Zadeh, Lankarani, & Micol-Foster, 2016). Stress is shown to have very different health implications for groups by race and sex (S. Assari & Lankarani, 2016b; S. Assari, Moghani Lankarani, Caldwell, & Zimmerman, 2016; Shervin Assari, Smith, Caldwell, & Zimmerman, 2015). The same can be said for discrimination (S. Assari, Moazen-Zadeh, Caldwell, & Zimmerman, 2017). Similarly, SES indicators (Assari, 2018h) such as poverty status (S. Assari & Moghani Lankarani, 2018a), education (S. Assari, M. Farokhnia et al., 2019), income (S. Assari, 2018a; S. Assari, Lapeyrouse, & Neighbors, 2018), and family structure (Assari, Caldwell, & Zimmerman, 2018) differently influence health, behaviors, and well-being of groups. Similarly, the complex interplays between social, behavioral, and health factors also depend on social group membership (Assari, 2018b; Assari & Lankarani, 2016a). These general patterns apply to children and adults (S. Assari, 2018d, 2018e; Shervin Assari & Hani, 2018).

The results may be due to a contrasting view of the effects of discipline across ethnic groups. A study by Lansford et al discussed that different ethnic groups have adapted different parenting techniques based on cultural context, assimilation experiences, and socialization goals. Black children were found to have fewer externalizing behavior problems compared to White children after experiencing physical discipline in the first five years of life. This was attributed to Black children perceiving physical

discipline as carried out with their best interest at heart compared to the scary experience and perception that parents were out of control by White children (Lansford, Deater-Deckard, Dodge, Bates, & Pettit, 2004).

This study and other investigations propose that MDRs are not specific to any specific health outcomes. This observation suggests that upstream socialization processes that accompany race, also called racism, are responsible for a systemic difference between Whites and Blacks in their ability to gain health and well-being from educational attainment and other resources (Assari, 2017; Shervin Assari, 2018a)**.** These patterns may not be specific to race, as they are also shown for ethnicity (Shervin Assari, 2019b; S. Assari, M. Farokhnia et al., 2019; Shervin & Ritesh, 2019) and sexual orientation (Assari, 2019a; Shervin Assari & Mohsen Bazargan, 2019). Thus, it is not just racism, but any form of marginalization that reduces health gain that follows SES.

Various researchers have documented MDRs. Farmer and Ferraro published on MDRs of education on self-rated health (Farmer & Ferraro, 2005). In this study, Whites gained more than Blacks from an increase in their educational attainment. Shapiro and Oliver have published on the inequalities in wealth distribution as a consequence of unfair social policies such as Jim Crow and redlining (Oliver & Shapiro, 2013; Oliver & Shapiro, 1999). Hamilton and Darity have conducted several studies documenting the enormous wealth gap in the United States (Hamilton & Darity Jr, 2009). Other scholars have also published on MDRs (Fuller-Rowell, Curtis, Doan, & Coe, 2015). Hudson et al. have shown a reduced gain of SES in the lives of Blacks (Hudson, Bullard, et al., 2012; Hudson, Neighbors, Geronimus, & Jackson, 2012, 2016). Wilson, Thorpe, and LaVeist have shown that income reduces discrimination for Whites and Blacks (Wilson, Thorpe, & LaVeist, 2017) differently. These are all in line with the Navarro's argument that living conditions and health are not a function of race or class (SES) but race and class (Navarro, 1989, 1990, 1991).

4.1 Implications

Our findings propose policy solutions that can help reduce health disparities in the United States. Previous policies have mainly tried to reduce inequalities in access to resources and have assumed that the elimination of inequalities in access would result in the elimination of inequalities in outcomes. Our findings, however, suggest that given the MDRs, some of the racial and ethnic inequalities are not because of unequal access but the systemic disadvantage of Blacks and other ethnic groups in society. Without addressing MDRs, solely enhancing access to SES resources would not be enough for the elimination of health disparities. Thus, MDRs research may contribute to the advancement of policies to reduce health disparities (Bailey et al., 2017; Butler & Rodgers, 2019; Gee & Ford, 2011; Louis, Menard, & Gee, 2015; Rodriguez, Bound, & Geronimus, 2014).

4.2 Limitations

The study has a few limitations. First, we did not have a balanced sample size in our Black and White groups. The sample was random, but not generalizable to the US. This is because the FFCWS has predominantly recruited economically fragile participants from large cities. The FFCWS cohort, as its

title suggests, reflects the economically challenged and fragile families. Various confounders such as parental warmth, acceptability of spanking, other parental behaviors, and stress were not measured. Another limitation was a single-item measure for our spanking variable. We also did not include data on the frequency or severity of spanking. In addition, this study could not match Black and White participants for SES. Whites still have higher levels of wealth and income, and live in better neighborhoods, even when parental education and poverty status are controlled.

There are also other reasons for a need in cation. We do not attribute high level of spanking to poor culture of Blacks. Thus, some individuals may perceive the findings as quite controversial. There are also some methodological issues. One is that there was a large difference in level of education between Blacks and Whites, which may have biased the results. There are also some potential confounders which were not corrected for, such as mental health in parents, which may increase the risk of spanking. The assessment of the spanking was also based on single items. The results may have also been affected by high social desirability of low educated Black sample, compared to the higher educated White sample.

5. Conclusions

In a national sample of US urban areas, Black and White families widely differ in how their parental education reduces their risk of being spank by the mother. That means, we observe a high risk of spanking, which is consistent over time, across all education levels of Black families. For Whites families, however, the risk of spanking is a function of parental educational attainment. That is, not only are White children protected overall, their risk goes down even further as their parents receive higher education. In contrast, Black children, however, are commonly spanked by their mothers, regardless of the educational level of the mother. These are generally described as a pattern called MDRs.

Author Contributions

SA conceptualized this paper, analyzed the data, wrote the first draft, and revised the paper. SB and MB contributed to the conceptual model and revised the manuscript. All authors approved the final draft.

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Conflicts of Interest

None.

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