



Differences in Febrile and Respiratory Illnesses in Minority Children: The Sociodemographic Context of Restrictive Parenting

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ABSTRACT

OBJECTIVE: To examine the moderating role of restrictive parenting on the relation of socioeconomic status (SES) to febrile illnesses (FIs) and upper respiratory illnesses (URIs) among ethnic minority and non-minority children.

METHODS: Children from diverse ethnic backgrounds (Caucasian, African American, Asian, Latino, other, or multiethnic) were followed across the course of the kindergarten year. Parents reported on SES and parenting. A nurse completed 13 physical exams per child over the year to assess FIs and URIs.

RESULTS: During the school year, 28% of children ($n = 199$, 56% ethnic minority) exhibited one or more FIs (range, 0–6) and 90% exhibited one or more URIs (range, 0–10). No main or moderating effects of SES or restrictive parenting on FIs or URIs were found among Caucasian children; however, among ethnic minority children, the relation of SES to FIs was conditional upon restrictive parenting ($\beta = .66$; $P = .02$), as the fewest FIs were found for lower SES minority children whose

parents reported more restrictive practices. Additionally, among minority children, more restrictive parenting was marginally associated with fewer URIs ($\beta = -.21$; $P = .05$).

CONCLUSIONS: Unexpectedly, among minority children the fewest illnesses occurred among lower SES children whose parents endorsed more restrictive parenting. This may be due to unique appraisals of this rearing style among minority children in lower SES environments and its potential to influence immune functioning. Results suggest variability in the effects of parenting on offspring health and support context-specific evaluations of parenting in efforts to ameliorate early health disparities.

KEYWORDS: child; ethnicity; parenting; physical health; socioeconomic status

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WHAT'S NEW

Among minority children in this study, better physical health outcomes were unexpectedly found for lower socioeconomic status children whose parents endorsed a more restrictive parenting style. Socioeconomic and parenting influences on children's health may differ between ethnic minority and non-minority children.

SOCIOECONOMIC STATUS (SES) exerts a profound influence on health during the early years of life. Lower SES is associated with children's overall poorer health, impaired growth, more acute and chronic health conditions, and greater frequency of injuries,¹ with effects that may endure across the lifespan.² Research on these relations early in life is important not only for reducing childhood health disparities but also for shifting the developmental trajectories that underlie differences in

health across the lifespan. In the current study, we focus on the relation of SES to 2 frequent forms of childhood morbidity that often result in school absence and lost work time among parents: febrile illnesses (FIs) and upper respiratory illnesses (URIs).

The macro-level effects of SES represent one component of a complex set of multilevel influences on early health disparities. Proximal factors within the family environment, particularly qualities of the parent-child relationship, have been shown to exert a strong influence on a range of health outcomes among children,³ including the development of febrile and upper respiratory illnesses.^{4,5} A compelling body of literature has also observed associations between parenting and inflammation, the latter of which is implicated in most upper respiratory illness symptoms.⁶ Greater inflammation has been observed among offspring exposed to harsher and more inconsistent parenting,⁷ although, of note, research in this area has been predominantly

conducted among samples that are relatively homogeneous in terms of SES and ethnic/racial composition.

Consideration of diversity is important when studying the social determinants of children's health, particularly when examining parenting. Parenting behaviors do not operate in a vacuum, and the value and health implications of varied parenting styles may be best understood by examining the larger socioeconomic and cultural context in which they unfold. In particular, the consequences of more restrictive parenting practices may vary with social and demographically driven differences in parents' motivation and affective reasoning for exerting greater control behaviors.⁸ Illustratively, poorer quality family environments have been associated with higher offspring inflammation when SES was lower but lower inflammation when SES was higher.⁹ Thus, rather than exerting independent effects, it may be the case that SES and parenting dynamically interact across multiple domains of children's ecologies to shape early health outcomes.

Physical health among children from ethnic minority groups is also consistently poorer as compared to majority culture children, and such discrepancies are not fully explained by differences in SES.¹⁰ Large-scale studies have observed persistent ethnic disparities across broad indicators of children's health, including asthma, chronic illnesses, injury, obesity, and overall mortality.¹¹ Differences in ethnic norms surrounding certain caregiving behaviors and how they function in varied socioeconomic contexts may also shape how restrictive parenting is related to children's health outcomes within minority and non-minority families.¹² Suggestive of such differences, Ehrlich and colleagues¹³ observed a significant relation between family relationship stress and greater inflammation among offspring from white families but not ethnic minority families. The authors suggested that the non-significance of such relations among minority youth may be due to the fact that authoritarian (ie, more restrictive) parenting is perceived as less stressful and more normative within this cultural context.

The aim of the present study was to examine the dynamic influences of SES and restrictive parenting on children's respiratory illnesses and fevers and evaluate whether these relations varied across ethnic minority and non-minority kindergarten children. These objective indicators of children's health were obtained through standardized physical examinations conducted by a registered nurse.

METHODS

PARTICIPANTS

Children and their parents were drawn from a larger study of early exposure to environmental adversity, social status, and health outcomes in kindergarten.¹⁴ Parent/caregiver reported data were provided by biological mothers (87%), biological fathers (9%), adoptive mothers (2.5%), biological grandmothers (0.6%), and individuals with other relationships to the child (0.9%), all hereafter referred to as "parent."

PROCEDURES

During the fall of 3 successive kindergarten years, families were recruited from 6 public schools in the San Francisco Bay Area selected to represent the sociodemographic characteristics of the geographic region. A registered nurse conducted individual examinations of each child in a private location on school premises during regular school hours. The standard physical exam included an assessment of the child's core body temperature by an infrared ear thermometer; inspection of the eyes, ears, nose, throat, cervical lymph nodes, and skin; and auscultation of the child's chest and breath sounds. This study was approved by the Committee for the Protection of Human Subjects of the University of California, Berkeley, and the Committee on Human Subjects of the University of California, San Francisco.

MEASURES

FAMILY SOCIOECONOMIC STATUS

Parents self-reported their total household income using an 11-point scale ranging from less than \$10,000 to over \$200,000. Parents were also asked to report their level of educational attainment and the education level of their partner/secondary caregiver in the household on a 6-point scale that ranged from less than a high school degree to professional/graduate degree. Total household income and highest educational level in the household were standardized and averaged to create a more robust measure of family SES,¹⁵ an analytic approach that has been used in prior research within this sample to examine relations between SES and children's health.¹⁶ SES was treated as a continuous variable in all analyses.

RESTRICTIVE AND CONTROLLING PARENTING

Parents' use of restrictive and controlling parenting practices was assessed with a modified version of the Child-Rearing Practices Report (CRPR).¹⁷ Parents filled out this paper and pencil measure at home in fall of the kindergarten year and mailed it back to study staff upon completion. The CRPR is a well-validated, widely used measure of restrictive parenting that was chosen for the present study because of extensive evidence of its relations with children's adjustment.¹⁸ The original version of the CRPR is a 91-item Q-sort; due to our broad study focus and to reduce subject burden, a reliable 18-item version of the instrument was administered in questionnaire form.¹⁹ Items measured strict, high limit setting, and controlling practices related to child-rearing on a 7-point scale ranging from "extremely untrue" to "extremely true" and were averaged such that higher values indicated more strict and restrictive parenting ($\alpha = .83$).

ETHNIC MINORITY STATUS

Nearly one-quarter of our sample identified as multiethnic, and there was an unbalanced (and often small) distribution of individuals across several other minority groups. In light of the power constraints posed by such small groups and in order to optimally account for ethnic

Table 1. Participant Characteristics and Study Descriptives

	Full Sample (N = 202)*	Non-Minority (n = 89)	Ethnic Minority (n = 113)
Sex			
Boys	103 (51.0%)	51 (57.3%)	52 (46.0%)
Girls	99 (49.0%)	38 (42.7%)	61 (54.0%)
Age	5.31 (0.31)	5.36 (0.33)	5.27 (0.28)
Race			
Non-minority (Caucasian)	89 (44.1%)	89 (44.1%)	...
Ethnic minority	113 (55.9%)	...	113 (55.9%)
Hispanic/Latino	8 (4.0%)	...	8 (4.0%)
Black/African American	36 (17.8%)	...	36 (17.8%)
Asian	21 (10.4%)	...	21 (10.4%)
Multiethnic	47 (23.3%)	...	47 (23.3%)
Other	1 (0.5%)	...	1 (0.5%)
Family income (n = 199)			
Less than \$10,000	9 (4.5%)	...	9 (8.2%)
\$10,000–\$19,999	9 (4.5%)	...	9 (8.2%)
\$20,000–\$29,999	7 (3.5%)	1 (1.1%)	6 (5.5%)
\$30,000–\$39,999	8 (4.0%)	1 (1.1%)	7 (6.4%)
\$40,000–\$49,999	9 (4.5%)	2 (2.2%)	7 (6.4%)
\$50,000–\$59,999	12 (6.0%)	3 (3.4%)	9 (8.2%)
\$60,000–\$79,999	26 (13.1%)	13 (14.6%)	13 (11.8%)
\$80,000–\$99,999	31 (15.6%)	15 (16.9%)	16 (14.5%)
\$100,000–\$149,999	49 (24.6%)	29 (32.6%)	20 (18.2%)
\$150,000–\$199,999	28 (14.1%)	19 (21.3%)	9 (8.2%)
Greater or equal to \$200,000	11 (5.5%)	6 (6.7%)	5 (4.5%)
Parent education			
Less than high school	5 (2.5%)	...	5 (4.4%)
High school diploma	8 (4.0%)	...	8 (7.1%)
Some college or 2-year degree	39 (19.3%)	5 (5.6%)	34 (30.1%)
College graduate	36 (17.8%)	17 (19.1%)	19 (16.8%)
Some graduate or professional school beyond college	22 (10.9%)	13 (14.6%)	9 (8.0%)
Professional or graduate degree	92 (45.5%)	54 (60.7%)	38 (33.6%)
Socioeconomic status, mean (SD)	0.04 (0.87)	0.39 (0.50)	−0.31 (0.93)
Harsh parenting, mean (SD)	3.62 (0.74)	3.29 (0.58)	3.90 (0.75)
Parent/caregiver work status (n = 194)			
Both parents work full-time	104 (53.6%)	47 (54.0%)	57 (53.3%)
At least one parent works less than full-time	90 (46.4%)	40 (46.0%)	50 (46.7%)
Months spent in > 30 h/wk of day care, mean (SD)	21.58 (13.79)	18.23 (12.82)	24.26 (14.33)
FIs, mean (SD)	0.53 (1.06)	0.64 (1.26)	0.22 (0.88)
URIs, mean (SD)	2.90 (2.32)	2.84 (2.13)	2.94 (2.47)

SD indicates standard deviation; FIs, febrile illnesses; URIs, upper respiratory illnesses.

*n = 199 in the febrile illness model.

group membership, we created a dichotomous categorical variable based on child ethnicity: Caucasian (non-minority) and ethnic minority. The ethnic minority group included children who belonged to one of the following groups: Hispanic/Latino, black/African American, Asian, multiethnic, or other (Table 1). Although this strategy was appropriate for the present analyses and for the distribution of our sample, we do not mean it to infer that all ethnic minority individuals are homogeneous in terms of our socioeconomic and familial variables of interest.

FEBRILE ILLNESSES

Core body temperatures $\geq 38.0^{\circ}\text{C}$ (100.4°F) indicated the presence of a fever, while temperatures $< 38.0^{\circ}\text{C}$ (100.4°F) reflected the absence of a fever. The number of FIs was summed across the 13 exams to create a count of total febrile illnesses.

UPPER RESPIRATORY ILLNESS

The nurse diagnosed a URI if symptoms of one of the following conditions were present: diffuse URI,

pharyngitis, conjunctivitis, otitis media with effusion, cough, or other respiratory illness. This diagnosis was rendered independently from that of FI, and the 2 diagnoses were not mutually exclusive.* The number of URI diagnoses was summed across the 13 exams to create a count of total URIs.

PARENT EMPLOYMENT STATUS

Parents reported their employment status and the employment status of the other caregiver/contributing member to their household income. For the present analyses, a dichotomous variable was created to indicate whether both individuals worked full-time or if at least one individual worked less than full-time.

*There were instances in which children were diagnosed with an URI and a FI. On average, across the 13 exams, 13% of children with an URI also had a FI.

Table 2. Estimates from Multiple Group Poisson Regression Models Predicting Number of Febrile Illnesses and Upper Respiratory Illnesses

	Febrile Illnesses				Upper Respiratory Illnesses			
	β	SE	<i>P</i>	IRR (95% CI)	β	SE	<i>P</i>	IRR (95% CI)
Minority Children								
Parent/caregiver work status	.04	.29	.88	1.05 (0.47, 1.84)	-.12	.17	.47	.89 (0.65, 1.04)
Months spent in > 30 h/wk of day care	.01	.01	.47	1.01 (0.99, 1.02)	.01	.01	.10	1.01 (1.00, 1.02)
Strict parenting	-.71	.28	.01	.49 (0.22, 0.76)	-.21	.11	.05	.81 (0.68, 0.94)
Socioeconomic status	.51	.19	< .01	1.67 (1.18, 2.42)	.01	.11	.89	1.01 (0.84, 1.23)
Restrictive parenting \times socioeconomic status	.66	.28	.02	1.93 (1.20, 3.52)	-.13	.13	.31	.88 (0.67, 1.06)
Caucasian Children								
Parent/caregiver work status	1.05	.34	< .01	2.89 (0.56, 4.41)	-.24	.15	.11	.78 (0.57, 1.09)
Months spent in > 30 h/wk of day care	.01	.01	.48	1.01 (0.97, 1.02)	-.01	.01	.10	.99 (0.98, 1.00)
Strict parenting	1.58	1.25	.21	4.86 (0.40, 11.14)	.09	.14	.51	1.09 (0.90, 1.41)
Socioeconomic status	.17	.59	.79	1.19 (0.17, 6.13)	-.06	.17	.73	.94 (0.68, 1.23)
Restrictive parenting \times socioeconomic status	-.81	1.09	.46	.45 (0.02, 2.43)	.26	.26	.32	1.30 (0.62, 1.63)

SE indicates standard error; IRR, incidence rate ratio; CI, confidence interval.

CHILDREN'S HISTORY OF DAY CARE

Parents indicated the number of months their child spent in at least 30 hours per week of day care prior to kindergarten entry.

PRELIMINARY ANALYSES AND STATISTICAL ANALYSIS PLAN

Across the full sample ($N = 338$), children underwent between 1 and 13 school-based physical exams completed by a registered nurse. To eliminate potential biases from including children who were not available to complete the intended 13 exams, only children with complete febrile illness ($n = 199$) and upper respiratory illness ($n = 202$) data were included in the present analyses. Children from 1 school were more likely to be excluded from analyses than those from the other 5 schools due to incomplete data; this school is located in a neighborhood of generally lower SES. Both *t*-tests and chi-square analyses compared children with and without complete FI/URI data. There were no group differences on key variables of interest, including ethnic minority status ($P = .97$ for FI sample; $P = .81$ for URI sample), socioeconomic status ($P = .59$; $P = .32$), employment status of parent(s) ($P = .11$; $P = .31$), months spent in day care prior to kindergarten ($P = .85$; $P = .83$), or restrictive/controlling parenting ($P = .92$; $P = .92$). Table 1 presents participant characteristics for children in the analyses.

Prior to conducting our primary analyses, we evaluated whether the interactive effects of SES and restrictive parenting on FIs and URIs should be conducted in a multiple group framework (comparing ethnic minority vs non-minority children) or run using the full sample without stratifying by race/ethnicity. To make this determination, we compared the fit of an unconstrained model in which all paths were allowed to differ between ethnic minority and non-minority groups to the fit of a constrained model in which paths were restricted to be equal between ethnic minority and non-minority groups. All models were run in MPlus version 7.1 using Poisson regression due to the count nature of our dependent variable. A significant decrement in model fit when the paths were constrained to be

equal provides evidence that the associations among the variables differed by race/ethnicity. The chi-square difference test cannot be used with models in which the outcome is a count variable. Thus, we evaluated model fit using the Bayesian information criterion (BIC), with a BIC difference of >10 serving as evidence in favor of the model with the lower BIC value.²⁰ In the case of the models predicting FIs and URIs, the BIC of the unconstrained model was smaller by a value of >10 compared to the constrained model, indicating the superiority of a multiple group model stratified on the basis of ethnic minority status (FI model: constrained vs unconstrained BIC difference = 120.126; URI model: constrained vs unconstrained BIC difference = 132.937).

Using this multiple group framework, we conducted our primary analyses to evaluate the main and interactive effects of SES and restrictive/controlling parenting on the total number of FIs and URIs in ethnic minority and non-minority children. Within the models, Poisson regression coefficients represent the expected log count of FIs or URIs as a function of restrictive/controlling parenting, socioeconomic status, and their interaction, controlling for potential confounding variables (described below). To aid in interpretability, results are also presented in tables as incident rate ratios with 95% confidence intervals.

Two variables were included to address potential confounds that could bias relations in our models. All physical exams were completed during regular classroom hours; thus, exam data were not available for children who were absent on designated exam days. It was hypothesized that a child with a FI or an URI may have been more likely to be absent from school if a caregiver was able to stay home with the child (ie, if at least one parent was working less than full-time); thus, all models included a dichotomous variable that represented parent employment status (both parents worked full-time vs at least one parent working less than full-time). Non-residential group day care has been associated with more frequent infections and respiratory illnesses among children,²¹ and such early exposure has been related to

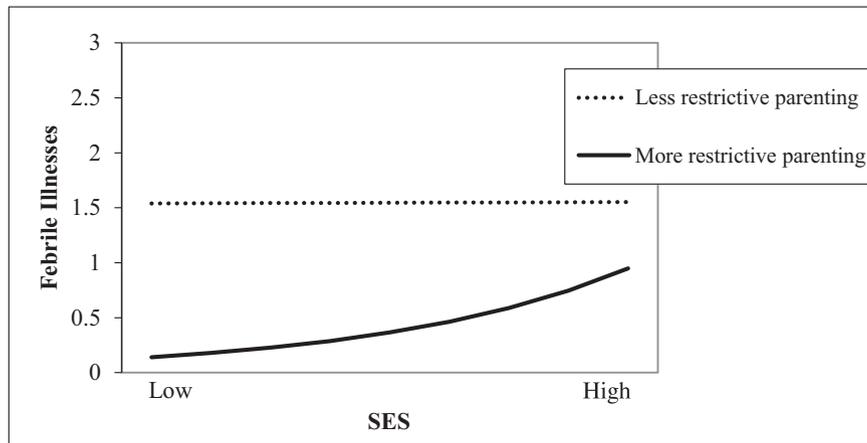


Figure 1. Results of Poisson model: Frequency of febrile illnesses as a function of the interaction of socioeconomic status (SES) and restrictive parenting among minority children. SES and parenting were both modeled as continuous measures in all analyses. To demonstrate the interactive association, this figure shows example SES and restrictive parenting results taken from those models, plotted and graphed at 1 standard deviation above and below the mean for each variable. Minority children from lower SES families who were exposed to more restrictive parenting had the fewest febrile illnesses. There was no relation between SES and fevers for children exposed to less restrictive parenting.

both increased²² and decreased²³ risk for illness following the initiation of school. All models also controlled for children's previous experience in a day care setting.[†]

RESULTS

Among children with complete exam data, the count of FIs ranged from 0 to 6, with 28% of the sample evidencing one or more FIs. The counts of URIs ranged from 0 to 10, with 90% of the sample that had complete exam data having one or more URIs (Table 1).

FEBRILE ILLNESSES

Among minority children, lower SES ($\beta = .51$, $P < .01$) and higher levels of restrictive/controlling parenting ($\beta = -.71$, $P = .01$) were each associated with a decrease in the log count of FIs; however, these relations were conditional upon a significant interaction ($\beta = .66$, $P = .02$; Table 1). SES was positively associated with FIs at higher levels of restrictive parenting (ie, 1 standard deviation above the mean). There was no significant association between SES and FIs when parenting was less restrictive (1 standard deviation below the mean). However, as demonstrated by the significant main effect of parenting in Table 2 and illustrated in Figure 1, the overall count of FIs was higher for children raised by less restrictive parents relative to those whose parents reported being more restrictive. Thus, among minority children, the lowest FI counts were identified among those reared in lower SES family environments with more restrictive parents. The attenuating influence of more restrictive parenting declined at higher levels of family SES among minority

children. Among Caucasian ethnic majority children, there were no significant main effects or interactive effects of SES or restrictive parenting on FIs (P values ranged from .21 to .79; Table 2).

UPPER RESPIRATORY ILLNESSES

Five or more URIs were observed in approximately 20% of the sample. Among minority children, SES was not related to URIs ($P = .89$), nor was there an interaction between SES and restrictive parenting on URI count ($P = .31$). There was a marginally significant relation between more restrictive parenting and fewer URIs ($\beta = -.21$, $P = 0.05$; Table 2 and Figure 2). Among Caucasian children, there were no significant main or interactive effects of SES or restrictive parenting on URIs (P values ranged from .32 to .73; Table 2).

DISCUSSION

The present study represents a preliminary attempt to disentangle the dynamic influences of SES and parenting on health outcomes among ethnic minority and non-minority children. We found that lower levels of SES were associated with less frequent FIs, particularly in the context of more restrictive parenting for ethnic minorities. Conversely, FIs were highest among minority children in higher SES environments with lower levels of restrictive parenting. Additionally, in minority children only, more restrictive parenting was marginally associated with fewer URIs. There were no main or interactive effects of SES and parenting on FIs or URIs among non-minority children.

Our findings are a surprising contrast to the large body of literature that has documented robust relations between lower SES and children's poor health.²⁴ However, results of the present study are not without precedent; select research has found associations between higher SES and poorer health among minority samples.²⁵ The hygiene

[†]We also evaluated multilevel models that accounted for the clustering of children within classrooms. The coefficients were not appreciably different in these models, and the pattern/significance of findings remained unchanged. In favor of parsimony and ease of interpretation, we present the results of our original Poisson models.

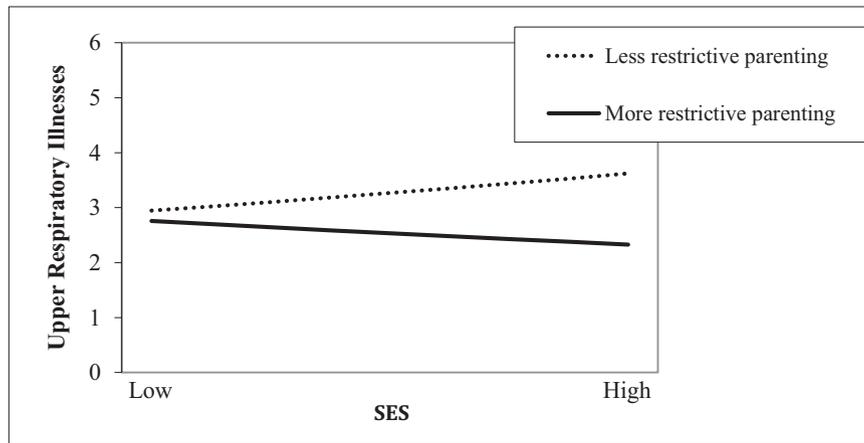


Figure 2. Results of Poisson model: Frequency of upper respiratory illnesses as a function of restrictive parenting among minority children. The interaction of restrictive parenting and socioeconomic status (SES) did not reach statistical significance in this model; however, SES is included to graphically depict the results in a manner consistent with Figure 1. SES and parenting were both modeled as continuous measures in all analyses. To demonstrate the interactive association, this figure shows example SES and restrictive parenting results taken from those models, plotted and graphed at 1 standard deviation above and below the mean for each variable. Minority children who were exposed to more restrictive parenting had fewer upper respiratory illnesses.

hypothesis suggests that early exposure to microbes and infections may reduce susceptibility to illness and chronic conditions among children later in life.²⁶ To the extent that suboptimal housing and other environmental risks of lower family SES exposes children to more respiratory pathogens, this may provide immunity that is protective during the initiation of formal schooling. It has also been suggested that higher levels of SES do not afford ethnic minorities the same protective health benefits as compared to majority culture individuals (hypothesis of “diminishing returns”²⁷), possibly due to racial disparities in income at equivalent education levels or experiences of discrimination that become more pronounced at higher levels of SES.²⁷

There was also a marginally significant relation between more restrictive parenting and less frequent URIs for minority children. Although we are tentative about interpreting marginally significant effects, we believe this relation is worth discussion given its alignment with our FI findings. Restrictive and controlling parenting practices have long been viewed as detrimental to children’s development;²⁸ however, cultural norms and beliefs influence both parenting style and the manner in which parenting behaviors are appraised by children.²⁹ Ethnic minority parents, particularly those in low SES communities, may use more restrictive practices in an attempt to ensure their children’s safety or prepare them for the dangers of living in a riskier neighborhood with higher levels of crime.³⁰ It may be the case that ethnic minority and lower SES contexts provide a unique lens of lived experiences through which children perceive adaptive (and more favorable, less upsetting) motives or meanings underlying parental restriction. This has been suggested by patterns observed in the differential effects of controlling parenting on children’s socioemotional development across varied ethnic/racial contexts.³¹ For example, the positive statistical association between parents’ use of harsh discipline and problem behaviors observed in Caucasian children has been found to be non-significant (and in some cases,

negative) among African American children.³² Higher levels of parental control have also been related to important cultural values in Mexican American³¹ and Asian American families.³³ Thus, although the (negative) terms “restrictive” and “controlling” have been universally applied to describe the parenting practices in both ethnic minority and non-minority families in the present study, such behaviors may not be cognitively appraised in the same (negative) manner by children across ethnic groups. Rather, ethnic minority children may perceive such parenting behaviors as normative, adaptive, and consistent with values of the larger sociocultural context.

How might such differences in the appraisal or perception of restrictive parenting influence children’s physical health outcomes? There is compelling evidence of the influence of early family factors on immune functioning,²⁶ as well as empirical support for cognitive and behavioral factors that offer protection against immune-compromising pathogens.³⁴ For example, adults with a more positive emotional style and greater social support have been shown to be at reduced risk for developing URIs following experimental exposure, possibly due to the release of proinflammatory cytokines.^{35,36} Thus, in the current study, it may be the case that ethnic minority children (particularly those reared in a low SES environment) appraise restrictive, high limit setting parenting practices as generally supportive and protective in a manner that stimulates healthy immune system functioning. Parents also guide children to adopt health promoting behaviors,³⁷ and those with a more restrictive style may instill routine handwashing and other hygiene-related practices that are protective against illness.

There were no significant direct or moderated relations of SES and parenting to physical health outcomes among Caucasian children. Income and education are select measures of the multidimensional SES construct, and prior research suggests that minority health outcomes may be more strongly associated with objective measures

of SES (eg, income, education, occupation) than with subjective measures (eg, perceived social position), whereas the latter is more influential than the former among majority individuals.³⁸ Thus, it may be the case that subjective SES is more salient to the physical health of Caucasian children in our sample than objective SES. Moreover, prior research of SES-health associations among children has often focused upon parental report of chronic illness, acute injury, and general health status. Although such broader health outcomes are not unrelated to the present study's physical-exam-based illness measures, there are methodological and substantive differences that may limit the comparability of our findings to prior research.

Our study has several limitations. We dichotomized our sample into minority and non-minority groups due to the small numbers of children within specific ethnic minorities; however, this precluded more in-depth analysis of processes that may distinguish between groups. We used self-reports of parenting, which may be subject to social desirability biases. This may be particularly true among ethnic minority parents who could be concerned about how responses will be viewed by non-minority individuals in positions of high social standing. In addition, we cannot rule out the possibility that 2 or more URIs diagnosed during consecutive exams may represent a single prolonged illness, although the duration of time between data collection points (approximately 3 weeks) renders it more likely that such diagnoses are separate occurrences. We controlled for parents' employment status in an effort to reduce potential bias related to the availability of a caregiver to remain home with an ill child; however, we did not have data to account for the degree of flexibility within parents' work schedules, which may be greater in some higher SES families. Finally, although our findings did not differ when we accounted for the clustering of children within classrooms, our sampling frame was sub-optimal for examining school-level effects. Future research that allows for more sufficiently balanced numbers of classrooms and schools across the range of SES is warranted.

A substantial number of young children in the United States live in socioeconomically disadvantaged environments that influence early development.¹ However, economic deprivation is only one component of a larger set of interactive familial and sociocultural influences that shape physical health outcomes early in life.²⁴ We found that SES interacted with parenting practices to influence minority children's physical health in somewhat surprising ways. Minority children reared in low SES environments had the lowest FIs when parents were more restrictive. More restrictive parenting was also marginally associated with less frequent URIs among minority children. Although abusive, neglectful, and other unequivocally negative parenting practices clearly adversely affect children's health and development across the lifespan,³⁹ our results suggest the need to thoughtfully evaluate parenting styles sometimes deemed as "restrictive" and to consider them in context. Results of the present study also provide further support for the importance of culturally

sensitive care, although there can be considerable challenges to the implementation of tailored services within the constraints of health care settings.⁴⁰ It is clear that there is pressing work to be done in this area as the socioeconomic and ethnic diversity of the US population increases. We argue for an ongoing, open dialog about diversity and continued research in this area that aims to understand and prevent disparities in health.

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SUPPLEMENTARY DATA

Supplementary data related to this article can be found online at [doi:10.1016/j.acap.2018.09.012](https://doi.org/10.1016/j.acap.2018.09.012).

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