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EMPIRICAL RESEARCH

It's All in the Family: Parents' Economic Worries and Youth's Perceptions of Financial Stress and Educational Outcomes

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Abstract

Perceived economic stress and lower subjective social status (SSS) have adverse effects on parents' and adolescents' emotional well-being, but less is known about associations with academic adjustment among preadolescent youth. This study examined associations between SSS, perceived economic stress about needs and wants, and academic adjustment among preadolescents and early adolescents ($n = 136$, ages 8 to 14 years, 44% girls, 61% White) and their parents ($n = 164$, majority middle- to higher SES). Overall, youth who worried more about their family's economic needs had lower academic achievement and youth who reported lower SSS had lower academic motivation. No significant differences were observed in the strength of associations between parent and youth perceptions and academic outcomes for early adolescents versus preadolescents.

Keywords Family economic stress · Subjective social status · Academic adjustment

Introduction

An expansive body of interdisciplinary research documents relations between socioeconomic status (SES; i.e., income, education, and occupation) and children's health and well-being (Duncan et al. 2015). Many of the effects of family SES, in particular household income and wealth, on child well-being have been shown to be indirect, through its influence on parents' ability to procure resources and opportunities (e.g., enrollment in high quality schools and extracurricular activities) as well as parents' psychological well-being and family relations (Diemer et al. 2020; Duncan et al. 2015). Although economic hardship and, relatedly, perceived economic pressure have been shown to induce parental stress with adverse downstream consequences on family functioning and children's and adolescents' emotional health, less research has examined associations with academic well-being (Delgado Killoren and Updegraff 2013; Mistry et al. 2009). Moreover, research shows that parents differentiate between economic stress about family needs (e.g., paying the bills) versus wants (e.g., eating out) (Mistry and Lowe 2006; Mistry et al. 2008), but studies have yet to examine whether youth also make this distinction, or if their perceptions of economic pressure around needs versus wants are aligned with those of their parents. Likewise, adults who perceive their relative social standing to be lower than that of others' experience more physical health, behavioral, and psychological difficulties, over and above the effects of objective SES indicators (Adler et al. 2000), but few studies have assessed similar perceptions or their consequences among youth (Ruck et al. 2019). Finally, adolescence is an important developmental period during which to examine youth perceptions of their family's economic circumstances and associations with academic well-being. However, changes in socio-cognitive abilities and shifts in social ecologies (e.g., moving from middle school to high school in the U.S. context) may contribute to differences in the extent to which youth are aware of their family's economic circumstances and associations with their academic adjustment. To date, however, limited research has examined potential developmental differences in these relations. To address these gaps in the empirical literature, this study examined: (1) associations between family income, parents' perceived economic stress about needs and wants and subjective social status (SSS), youth perceptions of the same, and youth academic achievement, motivation, and expectations, and (2) whether

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these associations were more consequential (i.e., stronger) among early adolescents relative to preadolescents.

Family Economic Stress and Youth Outcomes

The Family Economic Stress Model has its roots in seminal studies conducted by sociologists on the impact of parental job and income loss on family functioning and children's development during the Great Depression (Elder 1974) and the U.S. farming crisis of the 1980s (Conger and Elder 1994). These studies were conducted with predominantly White families with varying levels of economic security prior to the onset of macro-level shocks that affected their families. In 1990, a seminal review by developmental psychologist Vonnie McLoyd proposed an extension of this model to the experiences of African-American families living in poverty (McLoyd 1990). Since this time, a robust body of research, informed by the family economic stress perspective, has demonstrated that perceived economic pressure and strain influence children's development through a series of intervening and cascading family processes (see Conger et al. 2010 for review).

Specifically, the family economic stress perspective posits that family experiences of financial strain due, for example, to unstable work, low income, or income loss, causes parents to worry about their finances and, in turn, contributes to increased emotional distress (e.g., frustration, depression), which interferes with couple relationships (e.g., increases in conflict and withdrawal) and parenting practices (e.g., reduced responsiveness and increased hostility and disengagement). Another central tenet of the family economic stress perspective is that, over and above SES, people's *perceptions* of how they are doing financially (i.e., economic pressure) have a downstream influence on family functioning (Conger et al. 2010). These proximal family processes, in turn, have been amply shown to adversely affect children's and adolescents' development, and in particular their behavioral and emotional outcomes (Conger et al. 2010). Empirical support for the model has been observed among rural (e.g., Conger and Elder 1994) and urban families (e.g., Mistry et al. 2002), and families from diverse racial and ethnic backgrounds within and outside of the United States (e.g., Benner and Kim 2010; Gonzales et al. 2011; Parke et al. 2004; Solantaus et al. 2004). And, although a majority of the research in this area has focused on families experiencing job loss, financial instability, or poverty, studies conducted with more economically secure families have revealed similar findings, through the influence of perceived economic pressure (e.g., Mistry et al. 2004).

The majority of research in this area has focused on parents' mental health and children's and adolescents' social and emotional outcomes (e.g., internalizing and externalizing symptoms) (Conger et al. 2010). Fewer studies have examined how perceived economic stress may contribute to youth educational adjustment (e.g., engagement, performance). Instead, research linking economic resources and children's and adolescents' cognitive and educational outcomes has often focused on parents' differential access to people, goods, and services that bolster learning and academic prospects (Lareau 2011). In short, youth educational experiences and outcomes benefit when parents can afford to spend more money on learning materials (e.g., books), more time learning with their children (e.g., checking homework), and more money and time on educational activities and extras (e.g., visits to museums, tutoring, extracurricular clubs) (Duncan et al. 2015).

However, a growing body of evidence suggests that perceived economic pressure and financial strain affects children's and adolescents' academic outcomes, in addition to their social and emotional well-being. For instance, in early childhood, parents' perceived economic pressure and strain indirectly affects young children's math, reading, and general cognitive abilities, through parenting behaviors and interactions (Gershoff et al. 2007; Mistry et al. 2004). In late childhood and adolescence, parents' perceived economic pressure and strain, and subsequent changes in parenting behaviors, affect their children's academic achievement and performance on standardized achievement tests (Benner and Kim 2010; Mistry and Lowe 2006). Moreover, recent studies indicate that *adolescents' own* perceptions of family economic stress explain, in part, associations between family economic hardship and adolescents' academic outcomes (Delgado et al. 2013; Mistry et al. 2009).

Youth Perspectives on Family Economic Resources and Stress

More recently, researchers examined links between parent perceived economic stress, *youth perceived economic stress*, and youth academic outcomes in a short-term longitudinal study with a sample of Chinese American adolescents from low- to middle-income families, assessed at age 13 and again at age 17 (Mistry et al. 2009). Consistent with expectations, parents' (mothers' and fathers') perceived economic stress was associated with adolescents' reports of family economic stress. Adolescents' perceived economic stress, in turn, was related to greater levels of reported depressive symptoms and, in turn, lower academic engagement and performance (i.e., GPA) and less positive attitudes towards school. These relations were roughly equivalent across early adolescence (age 13) and late adolescence (age 17), but the relations between economic stress and depressive symptoms were stronger in late adolescence as compared with early adolescence. Similarly, a study with Mexican American adolescents from diverse SES backgrounds found that the more economic stress parents

reported the greater the levels of perceived stress reported by adolescents (Delgado et al. 2013). Adolescents who reported higher levels of family economic stress also reported less warmth and more conflict with their parents which, in turn, was associated with greater reports of depressive symptoms and lower GPAs.

Together, these findings suggest that *adolescents' perceptions* of family economic stress (in addition to their parents' perceptions) matter for their educational outcomes. This is consistent with theoretical notions that youth are agentic and responsive to their environment, including their family's socioeconomic position and relative social standing, which in turn shape their development (Bronfenbrenner and Morris 1998; Overton 2015). However, to date, no studies have directly assessed preadolescents' perceptions of economic stress in their families, or how these perceptions may affect preadolescents' academic adjustment.

Perceived Economic Stress: Needs and Wants

Recent research drawing on the family economic stress model has also demonstrated that parents differentiate between perceived economic pressure to meet their family's material *needs* (e.g., paying the bills, affording a place to live, buying food) versus their family's desires for modest *extras or wants* (e.g., vacations, new clothes). Importantly, mixed-methods research with a sample of racially and ethnically diverse (i.e., White, Black, and Latinx) low-income families indicates that a psychological sense of being able to meet basic needs is associated with mothers' sense of stability (i.e., feeling "okay" or "caught up"), whereas affording modest extras or wants is associated with feelings of fulfillment and accomplishment (Mistry and Lowe 2006; Mistry et al. 2008). In fact, the mothers in these studies reported trying to shield their children from feelings of economic deprivation as much as possible, pooling resources from additional jobs and help from family and friends in order to provide special extras such as desired games or toys, trips to the movies, or gifts. Thus, family financial needs and wants are distinct concepts for parents, and both are important for understanding the different ways in which family experiences of economic hardship affect youth well-being.

To date, few studies have investigated whether or how youth distinguish between family financial needs and wants, or the extent to which their perceptions in these two areas match their parents' perceptions. However, related research indicates that, by the end of the elementary years, children distinguish between resources that are necessary for healthy development (e.g., food, healthcare, education) and resources that are fun to have but best understood as luxuries (e.g., brand new toys, candy) (Elenbaas and Killen 2016; Rizzo et al. 2016). This suggests that, by late childhood (i.e., preadolescence), youth may be becoming aware of the extent to which their family's financial concerns center on meeting material needs, acquiring special extras, or both. And, while the majority of research in this area has focused on families experiencing job loss, financial instability, or low income, even affluent families have been shown to experience pressure to achieve more than previous generations (Luthar and Latendresse 2005). In the domain of education in particular, many middle class and affluent youth (and their parents) feel a pressure to achieve that takes a toll on their emotional well-being despite ample access to resources and opportunities (Luthar et al. 2013).

Youth Perceptions of Subjective Social Status

A related body of research has investigated SSS, or an individual's perception of their relative position or standing in an economic hierarchy (Diemer et al. 2013). Among adults, SSS has important implications for health. Adults who perceive their relative socioeconomic standing to be lower than others' standing experience a range of negative physical (e.g., overweight, high blood pressure), emotional (e.g., depression, stress), and behavioral (e.g., use of alcohol, cigarettes) health consequences over and above the effects of SES (Adler et al. 2000; Singh-Manoux et al. 2005).

Adolescents' perceptions of their SSS are associated with their parents' reports of income and education, and these associations grow stronger between early adolescence and late adolescence (Goodman et al. 2007; Goodman et al. 2015). Importantly, by late childhood, preadolescents' perceptions of their families' SSS and their parents' reports of SES are positively associated. For example, among a sample of 10- to 12-year-olds from racially and ethnically diverse but predominantly middle- to higher SES backgrounds, a majority of children placed their families near the middle of the SSS "ladder" relative to other families in the U.S. (Mistry et al. 2015). Children's SSS estimates also correlated with parents' reports of family income and parental educational attainment. Two additional studies have found similar associations with children and adolescents from diverse racial, ethnic, and SES backgrounds: African American and European American 8- to 14-year-olds' SSS perceptions were positively correlated with their parents' reported income (Burkholder et al. 2020), and 9- to 15-year-olds' reports of their SSS were negatively correlated with their families' eligibility for free or reduced price lunch (Rivenbark et al. 2019). Taken together, these results suggest that preadolescents exhibit more nuanced perceptions of their family economic background than previous research had examined or documented.

In addition to its implications for physical, emotional, and behavioral health, SSS has implications for youth academic adjustment (Destin 2019; Quon and McGrath 2014). For example, adolescents' perceptions of their SSS

relative to their peers at school are associated with a range of academic outcomes (Destin et al. 2012). More specifically, among a sample of racially, ethnically and socioeconomically diverse 9th through 12th grade students, lower SSS ratings were associated with higher levels of depressive symptoms which, in turn, were associated with less adaptive study habits and ultimately lower grades. Related research on adolescents' perceptions of their own potential for economic mobility likewise indicates that high school students from lower-income backgrounds practice stronger study skills and earn higher GPAs when they believe they can change (i.e., increase) their SES in the future, particularly through higher education (Browman et al. 2017).

Developmental Considerations Across Preadolescence and Early Adolescence

From a developmental perspective, the transition from late childhood to early adolescence involves a number of important social, cognitive, and contextual changes relevant to perceptions of economic stress and SSS and their associations with academic adjustment. Relative to late childhood, early adolescence is a period when youth engage in active exploration and examination of their social identities, including SSS (Crocetti 2017; Destin et al. 2017). This coincides with an expansion of opportunities for youth to compare their family's economic standing to that of their peers as a function of the transition into larger and (sometimes) more socioeconomically diverse school settings (Anderman and Mueller 2010; Lessard and Juvonen 2019), and increasingly greater interaction with social media, including exposure to influencers (Rideout and Robb 2019). While these shifting and expanding social experiences provide opportunities for more complex social perspective taking for adolescents, they also provide opportunities for feeling hierarchy (Destin et al. 2012)—for engaging in social comparisons with peers, friends, and with cultural and societal driven notions of higher (versus lower) levels of social status—that may have implications for youth well-being. Entry into adolescence also affords the possibility of formal employment in the near future, bringing the reality of one's own economic prospects and barriers into sharper focus (Mortimer 2010).

In terms of academic adjustment, the transition from elementary to middle school is a period when students' academic motivation and performance often decline and the risk for student dropout often increases (Anderman and Mueller 2010). This transition also marks a point at which students' expectations for their future educational attainment may shift, as previous goals (e.g., going to college) may begin to feel out of reach (Destin and Oyserman 2009). These changes are attributable to a range of shifting environmental and interpersonal factors, including stricter grading practices, less personal relationships with teachers, more stratified student ability groupings at school, and a reduced sense of general school belonging (Eccles and Roeser 2010; Wigfield et al. 2015).

To date, few studies have assessed the potential links between preadolescents' perspectives on their families' economic position and the potential links between perceived economic stress, SSS, and academic adjustment. This may represent an important, previously overlooked element of preadolescents' academic lives. These youth are gaining a sense of their relative economic position and a greater understanding of which material resources can be considered necessities and which are special extras. These interpersonal and family processes may have important implications for their academic adjustment, including their academic performance, motivation, and expectations for future success.

Current Study

Drawing on the family economic stress model and prior research, five sets of hypotheses were formulated for this study. Figure 1 presents the conceptual model for the study. First, lower levels of family income would be associated with higher parental reports of stress in meeting family needs and wants and lower SSS (Hypothesis 1). In turn, parents' reports of economic stress (needs and wants) would be positively associated with youth reports of economic stress (needs and wants), and parents' SSS would be positively associated with youth SSS (Hypothesis 2). Cross-associations were also explored (e.g., whether parent perceptions of economic stress about needs might be associated with youth SSS) but no specific hypotheses for the nature of these relations were proposed. Next, youth who reported more economic stress (needs and wants), and lower SSS, would have lower academic achievement, motivation, and expectations (Hypothesis 3). In addition to these direct effects, higher family income would be positively associated with youth academic outcomes indirectly, through parent and youth perceptions of economic stress and SSS (Hypothesis 4). Finally, all hypothesized paths were expected to be stronger among early adolescents than among preadolescents, for the developmental reasons outlined above (Hypothesis 5).

Methods

Participants

Participants were 8- to 14-year-old youth ($n = 136$) and their parents ($n = 164$, 85% mothers), from sixteen community sites (e.g., after-school programs) in a mid-sized city

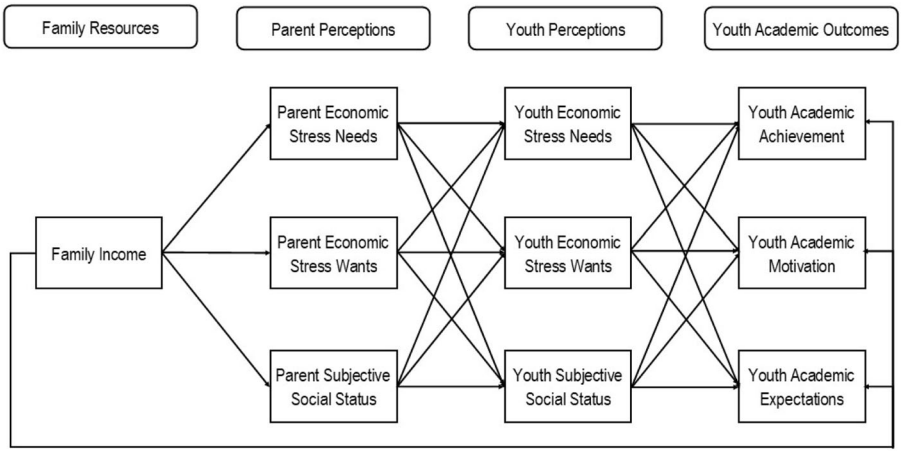

Fig. 1 Conceptual model

in the northeastern United States. At each site, all families with students in third through eighth grade were invited to participate in the study via a letter distributed to parents by site staff on behalf of the study team. For the moderation analyses (Hypothesis 5), youth in grades 3 through 5 were grouped together as preadolescents (8 to 11 years, $M_{Age} =$ 9.53 years, $SD = 1.17$) and youth in grades 6 through 8 were grouped together as early adolescents (11 to 14 years, $MAge = 11.76$ years, $SD = 1.14$), reflecting the shift from preadolescence to early adolescence as well as the transition from elementary school to middle school. The total youth and parent sample sizes differ because some parents completed the parent survey but did not enroll their child in the youth survey. All data were collected in the winter and spring of 2019, prior to the onset of the COVID-19 pandemic in the U.S. and the shuttering of the economy and schools in March 2020.

Most parents agreed to provide demographic information for their family (see Table 1). The sample was fairly evenly balanced by child gender and was primarily White/European-American and middle- to higher SES (based on parents' education level and household income). At the time of data collection in the county where the study took place, the median annual family income was $72,653, 22% of families were classified as living in poverty based on the Federal Poverty Threshold, and 7% of adults were unemployed (U.S. Census Bureau 2017). The county averages were similar to U.S. national averages at the time ($70,850 income, 20% poverty, and 7% unemployment). In this county approximately 77% of youth are White/European-American, 16% are Black/African American, 4% are Asian-American, and 3% are multi-racial; additionally, 9% are Latinx.

Procedure

This study was approved by the Research Subjects Review Board at the University of Rochester; 00003009, "Peer Relationships and Emotional Well-being". Parental consent and youth assent were obtained for all participants. Youth completed their surveys in quiet spaces at each site. Parents completed their surveys at home, and returned them to the study team in confidential envelopes. Youth surveys took approximately 20 min; parent surveys took approximately 10 min.

Measures

Family income

As displayed in Table 1, parents reported their *Approximate Annual Family Income* on a scale from 1 ≤ $10K to 10 ≥ $200K.

Economic stress: needs and wants

The perceived economic stress measures were based on prior studies conducted with samples of racially and ethnically diverse, low-income families (see Mistry et al. 2008), adapted from measures of perceived economic strain and financial pressure used in seminal studies of economic hardship conducted by Conger and Elder (1994) of White families in rural America.

Parents responded to eight questions about the extent to which they had worried about several economic issues over the past three months, on a scale from 1 = Never to 5 = Always. Parents' responses to four items about how much they felt worried or stressed about having enough money to (1) pay the bills, (2) buy food, (3) afford a place to live, and (4) meet family needs were averaged to create an index of *Parent Economic Stress-Needs* ($\alpha = .88$). Similarly, parents' responses to four items about how much they worried and felt stressed about having enough money to pay for (1) children's activities (e.g., sports, arts), (2) new things (e.g., clothes), (3) vacations and special events, and (4) meet family wants were averaged to create an index of *Parent Economic Stress-Wants* ($\alpha = .92$).

Table 1 Sample demographics

	Youth		Parents	
	%	*n*	%	*n*
Age				
8 years	9%	17		
9 years	14%	26		
10 years	15%	28		
11 years	26%	48		
12 years	17%	33		
13 years	14%	26		
14 years	3%	6		
Gender				
Boy/Father	45%	82	10%	16
Girl/Mother	44%	81	85%	140
Not Provided	11%	21	5%	8
Race or Ethnicity				
White/European-American	61%	113	79%	129
Black/African-American	9%	16	10%	18
Latinx	4%	7	3%	4
Asian/Asian-American	2%	3	5%	7
Other	2%	3	1%	1
Multiracial or Multiethnic	6%	11	2%	4
Not Provided	16%	31	1%	1
Approximate Annual Family Income				
< $10K			1%	2
$10–15K			4%	7
$15–25K			3%	5
$25–35K			3%	5
$35–50K			6%	11
$50–75K			14%	25
$75–100K			12%	22
$100–150K			25%	47
$150–200K			8%	15
> $200K			11%	20
Not Provided			13%	25
Highest Level of Education				
Some High School			2%	4
High School Graduate			7%	12
Some College			27%	49
Bachelor's Degree			24%	44
Graduate of Professional Degree			30%	55
Not Provided			11%	20
Total *N*		136		164

Youth responded to a parallel set of questions about the extent to which they worried about the same economic issues for their family over the past three months (White 2009). For example: "In the past three months, how much did you worry about your family not having enough money for you to do activities like playing on a sports team or taking music or dance lessons?" As with the parent measure, responses across items were averaged to create indices of *Youth Economic Stress-Needs* ($\alpha = .88$) and *Youth Economic Stress-Wants* ($\alpha = .87$) were created.

Subjective social status

Both parents and youth were shown the same image of a 10-rung ladder representing the city where they lived, and told that the top represented "the people who have the most money" and the bottom represented "the people who have the least money". Parents and youth (separately) placed Xs on the rung representing their family, as measures of *Parent Subjective Social Status* and *Youth Subjective Social Status*.

This measure was included in a prior study assessing 10- to 12-year olds' perceptions of their family's socioeconomic position and intergroup attitudes (Mistry et al. 2015). The sample was racially and ethnically diverse; although participants' SES backgrounds varied, a majority of the sample was middle class or higher-SES. In this prior study parents' and children's SSS varied, but were significantly correlated.

Academic outcomes

Parents were asked to think about their child's most recent report cards and respond to four questions about their child's school performance in (1) reading, (2) mathematics, (3) written work, and (4) overall, on a scale from 1 = Not Well At All to 5 = Very Well. Scores were averaged to create an index of *Youth Academic Achievement* ($\alpha = .93$). The measure was developed for a prior study examining the impact of a randomized experimental study designed to promote work and improve the economic circumstances of families living in poverty on family and child well-being (Huston et al. 2001).

Youth responded to five questions about their motivation at school, including (1) trying hard, (2) finishing homework, (3) not doing well (reverse scored), (4) finding grades important, and (5) avoiding distractions, on a scale from 1 = Strongly Disagree to 6 = Strongly Agree (Conger and Elder 1994). An example item was: "Even when there are other interesting things to do, I keep up with my schoolwork." Scores were averaged to create an index of *Youth Academic Motivation* ($\alpha = .72$).

Youth responded to one question about how far they expected to progress in school, from 1 = Finish High School to 5 = Finish Law, Medical, or Graduate School, with an option to select "not sure", as a measure of *Youth Academic Expectations* (Cook et al. 1996). A total of 35 youth selected the "not sure" option; their responses were recoded as missing. This measure has been widely used in

studies with racially, ethnically, and SES diverse samples of youth (e.g., Huston et al. 2001; Zhang et al. 2011).

Child age

Youth reported their age in years, from 8 to 14 years.

Covariates

Parents reported their highest level of educational attainment on a scale from 1 = Some High School to 5 = Graduate Degree. Parents also reported their child's gender, which was coded as 1 = Boy and 0 = Girl for analyses. The survey included an option to write in a different gender identity, but no parents used this option. To report race and/or ethnicity, parents were asked to "check all that apply" from a list of 15 options, including an option to write in a racial/ethnic identity not listed. For analyses, parent and child race/ethnicity was coded as 1 = Racial/Ethnic Minority Background and 0 = Racial/Ethnic Majority (White/European-American) Background.

Analysis Plan

The primary analytic tool was structural equation modeling (SEM) using M*plus* 8 (Muthén and Muthén 1998–2017). Specifically, path analyses were conducted to test relations among the study constructs, because it allows for the simultaneous testing of direct and indirect effects, which is not possible with OLS regression (Stage et al. 2004). M*plus* uses delta method standard errors when estimating indirect effects (Muthén and Muthén 1998– 2017). To test for differences in the strength of associations among the study constructs across preadolescents and early adolescents, multiple group analyses were conducted. An initial unconstrained model was first estimated, in which all of the structural paths were allowed to vary across the two age groups. Next, pathways were sequentially constrained to be equal across groups -- moving from exogenous (i.e., family income to parent perceptions, and from income to youth academic outcomes) to endogenous (e.g., youth perceptions to youth academic outcomes). At each step, a chi-square test of parameter constraints was conducted to determine whether the more constrained model resulted in a significant decrease in overall model fit compared with the previous, less constrained, model.

SEM allows for tests of model fit using several goodness-of-fit indices. Models were considered an acceptable fit if they met the majority of the following criteria: non-significant model χ^2, chi-square/df < 2, CFI > .90, RMSEA < .08, and 95% CI for the RMSEA < .10 (Hu and Bentler 1999). Full-information maximum-likelihood (FIML) estimation procedures were used to deal with missing data. FIML is a preferred method that allows generalization of results to the population while preserving the use of all available data. FIML does not impute missing data; rather, it fits the covariance structure model directly to the observed raw data for each participant (Enders and Bandalos 2001).

Results

The means, *SDs*, and correlations among all study variables are shown in Table 2. In general, the set of household (income), parent, and youth economic indicators correlated with each other in the expected direction. One exception was youth SSS, which was correlated with youth reports of perceived economic stress about needs and wants, but not family income or any of the parental indicators of perceived economic stress and SSS. Youth academic outcomes were differentially related to the economic indicators. Academic achievement correlated with household income and youth reports of perceived economic stress about wants. Academic motivation correlated with youth SSS. Academic expectations were not correlated with any of the economic indicators.

Multi-Group Analyses: Moderation by Age

As a first step, multi-group comparisons were used to test the hypothesis that the relations among the variables in the model, illustrated in Fig. 1, were stronger among early adolescents (sixth through eighth graders) relative to pre-adolescents (third through fifth graders). Initial models included child gender, child ethnicity and parent education as covariates of youth measures, and parent ethnicity and education as covariates of family income. Child gender and ethnicity were not significant and were dropped from the models; parent education was not consistently associated with the youth academic outcomes and was not included in further analyses. Parent ethnicity and education were significant covariates of family income and were retained in the final analytic model.

An initial unconstrained model fit the data relatively well, χ^2 (60) = 74.38, p = .10, RMSEA = .05 (90% CI [.00, .09]), SRMR = .09, CFI = .98. As described in the Analysis Plan, paths were sequentially constrained to be equal across age groups, and the overall fit of the more constrained model was compared to the previous, less constrained model for reductions in fit.

Contrary to Hypothesis 5, no evidence of moderation across preadolescents and early adolescents was found. Constraining paths from family income to parent perceptions and youth academic outcomes, from parent to youth perceptions, and from youth perceptions to academic outcomes did not result in significant reductions in model fit;

Table 2 Descriptives and correlations

	n	*M*	*SD*	1	2	3	4	5	6	7	8	9
1. Family Income	163	6.97	2.18									
2. Parent Economic Stress Needs	166	1.95	.91	−.60**								
3. Parent Economic Stress Wants	165	2.49	1.07	−.54**	.72**							
4. Parent Subjective Social Status	153	5.33	1.75	.68**	−.53**	−.52**						
5. Youth Economic Stress Needs	132	1.78	.84	−.35**	.26**	.23*	−.30**					
6. Youth Economic Stress Wants	130	1.87	.85	−.31**	.26**	.26**	−.28**	.69**				
7. Youth Subjective Social Status	121	6.01	1.32	.04	−.09	−.16	.07	−.31**	−.29**			
8. Youth Academic Achievement	167	3.95	.97	.22**	−.08	−.13	.15	−.15	−.22*	.01		
9. Youth Academic Motivation	124	5.08	.72	.03	.17	.03	−.01	−.18	−.17	.23*	.35**	
10. Youth Academic Expectations	129	3.82	1.12	.07	−.03	.05	.11	−.11	−.06	−.11	.09	.24*

Family Income 1 ≤ $10 K to 10 ≥ $200 K. Parent and Youth Economic Stress Needs and Wants 1 = never to 5 = always. Parent and Youth Subjective Social Status 1 = least money 10 = most money. Academic Achievement 1 = not well at all to 5 = very well. Academic Motivation 1 = strongly disagree to 6 = strongly agree. Academic Expectations 1 = finish high school to 5 = finish law, medical, or graduate school

*$p < .05$; **$p < .01$

$\Delta\chi^2$ (6) = 3.94, $p = .68$, $\Delta\chi^2$ (9) = 9.06, $p = .43$, and $\Delta\chi^2$ (10) = 11.36, $p = .33$, respectively. The paths appeared to be of similar magnitude and direction across both age groups.

As a supplemental test of our moderation hypotheses, child age was added as a covariate of youth economic stress about both needs and wants, SSS, and academic outcomes. This neither improved the fit of the model nor changed the pattern of results shown in Fig. 2. Only one effect was marginally significant, the older the child the lower their reported SSS, β = −.16, $p = .07$.

Full Sample Analyses

Because the multi-group analyses revealed no significant differences in the structural paths across preadolescents and early adolescents, all subsequent analyses were conducted using the full sample. Figure 2 presents the results. The final model fit the data well, χ^2 (30) = 62.45, $p < .001$, RMSEA = .08 (90% CI [.05, .10]), SRMR = .08, CFI = .95.

Model direct effects

Supporting Hypothesis 1, for parents, lower family income was associated with higher levels of perceived economic stress about meeting family needs, β = −.58, $p < .001$, and wants, β = −.63, $p < .001$, as well as lower SSS ratings, β = .68, $p < .001$.

Next, parents' stress about meeting their family's needs was marginally associated with youth stress about needs, β = .35, $p = .06$, but unrelated to youth stress about wants, β = .25, $p = .17$, or youth SSS, β = .17, $p = .42$. Interestingly, lower parent SSS was associated with higher levels of youth stress about needs, β = −.21, $p = .05$, but unrelated to youth stress about wants, β = −.11, $p = .33$, or youth SSS, β = −.07, $p = .56$. Finally, higher levels of parent stress about wants was related to lower youth SSS, β = −.38, $p = .04$, but unrelated to youth stress about needs, β = 1.15, $p = .41$, or wants, β = .03, $p = .98$. Thus, Hypothesis 2 was partially confirmed.

Supporting Hypothesis 3, higher levels of youth stress about needs was associated with lower parent-reported academic achievement, β = −.41, $p = .03$, and youth SSS was marginally associated with youth-reported academic motivation, β = .17, $p = .10$. However, youth stress about wants was unrelated to the educational outcomes, and none of the youth-reported indicators of family economic well-being were associated with youth-reported academic expectations (see Fig. 2).

Indirect effects: SES and academic outcomes

Family income had a significant indirect effect on youth academic achievement, β = .07, $p = .04$, a marginally significant indirect effect on youth academic motivation, β = .06, $p = .07$, and a non-significant indirect effect on youth academic expectations, β = .01, $p = .82$. Thus, Hypothesis 4 regarding the indirect effects of family income on youth academic outcomes through parent and youth economic stress and SSS was partially confirmed.

Alternate models

One question when assessing indirect effects with cross-sectional data concerns potential reverse causality. Theoretically, parents' perceptions of their economic circumstances were expected to influence youth perceptions, but the inverse may also be true (e.g., youth vocalize their

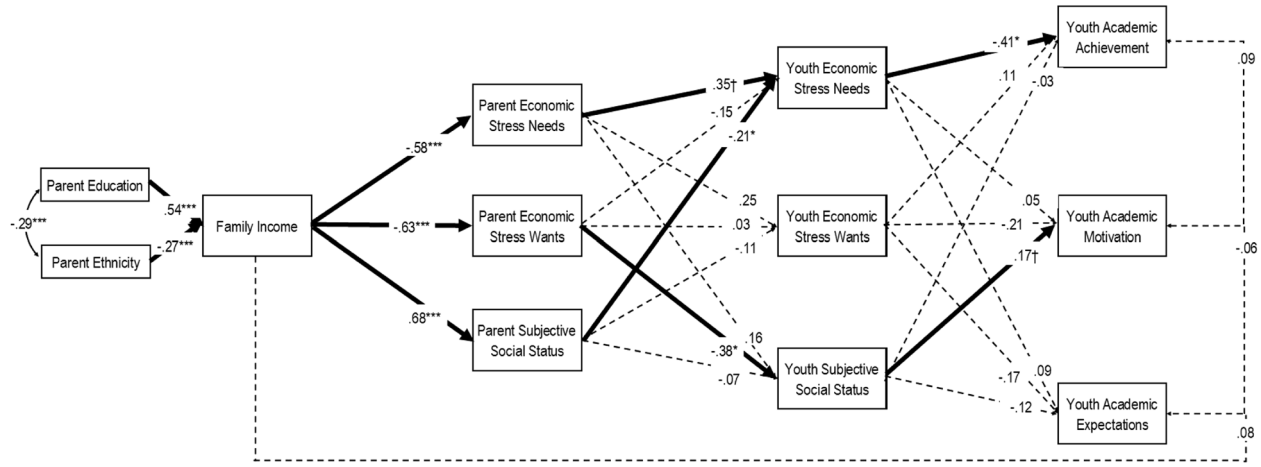

Fig. 2 Final model, standardized path coefficients. Within-level covariances were estimated but not shown. $^{\dagger}p < .06$; $^{*}p < .05$; $^{**}p < .01$; $^{***}p < .001$

perceived economic stress about wants leading their parents, in turn, to worry about meeting their family's desires for special extras). Before concluding that the model described above reflected the best possible representation of the data, an alternative specification of the data was tested. This model was identical to that presented in Fig. 2, but with parent perceptions and youth perceptions reversed (i.e., family income predicting youth perceptions, youth perceptions predicting parent perceptions, and parent perceptions predicting youth academic outcomes). This model did not fit the data as well as the model aligned with the theoretical formulation shown in Fig. 2, χ^2 (30) = 157.901, $p < .001$, RMSEA = .15 (90% CI [.13, .17]), SRMR = .12, CFI = .81.

In addition, a second alternate model -- allowing for the possibility of a direct effect of family income on youth economic stress about needs and wants, and SSS, in addition to the indirect effect via parent perceptions -- was tested. This model was identical to Fig. 2, but with the addition of direct paths from family income to all three youth perceptions. This model fit the data well, χ^2 (27) = 53.761, $p = .001$, RMSEA = .07 (90% CI [.04, .10]), SRMR = .06, CFI = .96. Income remained significantly associated with parents' stress around needs and wants, and parent SSS; $\beta = -.59$, $p < .001$, $\beta = -.63$, $p < .001$, and $\beta = .68$, $p < .001$, respectively. The associations of parent and youth stress around needs and the association of parent stress around wants with youth SSS also remained significant; $\beta = .32$, $p = .06$ and $\beta = -.40$, $p = .04$, respectively. In addition, there was a significant direct effect of income on youth stress around needs, $\beta = -.38$, $p = .003$. No other effects of income on youth perceptions were significant. The effect of youth stress about needs on academic achievement remained significant, $\beta = -.42$ $p = .03$, but no other effects of youth perceptions on academic outcomes were significant. As in the initially specified model, family income had a significant indirect effect on youth academic achievement, $\beta = .17$, $p = .01$, but not motivation or expectations; $\beta = .07$, $p = .17$ and $\beta = .01$, $p = .86$, respectively. Thus, beyond the indirect effect through parent perceptions of economic stress, family income was directly associated with youth perceptions of stress around meeting economic needs. This finding is interpreted in the Discussion.

Discussion

Economic stress and lower SSS adversely affect parents' and adolescents' emotional wellbeing, but less is known about the nature of these relations among pre adolescent youth, with regard to youth academic adjustment, or among those in more economically secure families as compared with families experiencing enduring economic hardship. To address these existing limitations, this study examined associations between perceived economic stress about needs and wants, SSS, and academic adjustment among preadolescents and early adolescents from middle- to higher-income families. The findings indicate that youth perceptions of their family's economic circumstances were differentially related to parents' perceptions of needs, wants and SSS, and had implications for their academic adjustment and well-being. Specifically, youth who reported worrying more about their family's economic needs (but not wants) had lower academic achievement, and those who rated their family's SSS lower reported lower levels of academic motivation. These processes and their associations with the indicators of academic adjustment and well-being were comparable across preadolescents and early adolescents in this sample.

Youth Perceptions: Economic Needs and Wants, and Subjective Social Status

The results of this study highlight the important role of *preadolescents' and adolescents' perceptions* of their family's experiences of economic stress and assessments of their SSS. Two prior studies suggested that adolescents' perceptions of family economic stress (in addition to parents' perceptions) matter for their educational outcomes (Delgado et al. 2013; Mistry et al. 2009), but the current study was the first to directly assess preadolescents' perceptions of these family processes. Parent and youth worries about economic needs were significantly associated: the more parents worried about meeting their family's needs the more youth worried about the same. Additionally, youth worried more about needs when their parents perceived their relative social standing to be lower. Consistent with prior research with adults, lower family income was related to higher economic stress about both needs and wants, as well as lower SSS, among parent participants.

For parents, being able to meet basic material needs (e.g., paying the bills) is associated with feeling "caught up" while affording additional extras is associated with feelings of accomplishment (Mistry and Lowe 2006; Mistry et al. 2008). Older children, too, distinguish between resources that are necessary for healthy development and resources that are special extras (Rizzo et al. 2016). In fact, seeing others go without necessary resources (e.g., healthcare) evokes children's moral concerns for others' rights (Elenbaas and Killen 2016). The results of the current study indicated that preadolescents and early adolescents made this important distinction with regard to their own families' economic well-being. In particular, when parents reported being worried about meeting their family's basic material needs their children were aware of, and shared, their concerns.

Interestingly, when parents expressed greater worry about affording desired extras or wants, their children perceived their SSS to be lower. Prior research indicates that low-income parents attempt to provide some modest extras (e.g., gifts, eating at McDonalds) in order to shield their children from feelings of economic deprivation (Mistry and Lowe 2006; Mistry et al. 2008). The results of the current study suggest that, when worries about extras are apparent to middle- and higher-SES youth, they influence how these youth perceive their family's economic standing relative to others.

At the same time, however, parent and youth SSS estimates were not significantly related in this sample. These results contrast with prior findings demonstrating significant associations between parent and child SSS ratings (Goodman et al. 2015; Mistry et al. 2015), and suggest that preadolescents' and early adolescents' perceptions of their SSS may still be in flux and evolving, depending on local conditions and contexts. Moreover, additional analyses revealed that family income was directly related to youth perceived stress about needs, above and beyond the indirect effect through parents' perceptions, but not to youth perceived stress about wants or SSS. This suggests that, despite parents' efforts to conceal their worries from their children, youth may still formulate perceptions of their family's economic circumstances based on cues other than parents' direct communication about, or affective responses to, perceived economic stress.

One possibility is that, even among a mostly middle class sample, it may be harder for parents to shield their children from their worries related to affording basic needs (e.g., rent, food) as compared with worries about wants. Likewise, youth may be more aware of their parents' worry about affording basic needs (e.g., bills being paid late) versus the inability to afford wants (e.g., not going on vacation), even when parents do not directly express these concerns to them. In turn, youth may themselves worry more upon learning of their families struggle to procure basic needs as compared with desirable but non-essential purchases (e.g., new clothes) or activities; with the former having more consequences on academic achievement and engagement at school than the latter. In contrast to perceived needs, perceived wants and SSS are also more likely influenced by sources outside of the family, including observations of peers' belongings and activities (e.g., Lessard and Juvonen 2019; Mistry et al. 2015) and media influences (e.g., Rideout and Robb 2019). In short, although more variable than expected, the observed links between parent and youth perceptions of family financial well-being highlight that youth are sensitive to, and aware of, their family's economic circumstances and their parents' reactions to those circumstances.

Family Economic Processes and Academic Adjustment

The results of this study revealed important associations between youths' perceptions of their family's economic stress, SSS, and academic adjustment. Despite well-documented associations between family SES and a range of youth academic outcomes (Duncan and Murnane 2011), few studies have examined whether or how perceived financial stress and SSS may underlie these associations, particularly with preadolescent samples. This study found that youth who worried more about their family's ability to meet needs had lower academic achievement (i.e., grades), and lower youth SSS was associated with lower academic motivation (e.g., trying hard in school). These results align with prior, similar, findings with older adolescents (Destin et al. 2012; Mistry et al. 2009), and provide the first

evidence for how economic stress and SSS are related to academic adjustment at earlier periods in development.

Notably, these findings emerged in a sample of primarily middle- to higher-SES parents and youth attending public schools in majority middle-income neighborhoods. The sample average of youth worries about economic needs (e.g., food, housing) was below the midpoint of the scale. Likewise, the sample average for youth SSS was toward the middle of the economic "ladder". Nevertheless, consistent with tenets of the family economic stress model, *feeling* worried about their family's economic needs or *perceiving* their status to be lower than that of their peers was harmful for preadolescents' and early adolescents' academic adjustment.

A central prediction of the family economic stress model is that, over and above SES, people's *perceptions* of their financial well-being have direct effects on their adjustment (Conger et al. 2010). While most research in this area has (understandably) focused on families experiencing poverty or income loss, even middle-class and affluent families can feel economic pressure (e.g., Luthar et al. 2013; Mistry et al. 2004). Moreover, economic mobility in the U.S. has declined substantially in recent decades (Chetty et al. 2017), and it is possible that sensing the precariousness of their status may have amplified the effects of even relatively modest levels of youth economic stress and lowered SSS in this sample. Overall, the results support the focus on the importance of perceptions of economic hardship, over and beyond indicators of SES, advanced by the family economic stress perspective.

Early Origins

Counter to expectations, no significant differences emerged in the strength of the associations between parent perceptions, youth perceptions, and youth academic outcomes by developmental status (i.e., preadolescents vs. early adolescents). These links were hypothesized to be stronger among early adolescents than among preadolescents for a range of reasons related to social comparison, identity development, future prospects, and school environments. Moreover, at least one prior study found that relations between economic stress and emotional well-being were stronger in late adolescence than in early adolescence (Mistry et al. 2009), and SSS and SES have been shown to correlate more strongly with age (Goodman et al. 2015). It is possible that developmental differences in perceptions may become more salient as youth progress through adolescence, including navigating their way through the middle and high school years.

However, these findings resonate with those from recent studies indicating that even young children may have a general sense of their family's economic status (Elenbaas 2019; Hazelbaker et al. 2018), though these perceptions are not as complex, nuanced, or calibrated as those of adolescents or adults. The results of this study highlight a need for further research on the early origins and development of children's perceptions of family economic stress and SSS, as these correlate with parents' perceptions and relate to academic adjustment earlier in development than previously anticipated. Research adopting a mixed-methods approach may be especially useful for exploring these processes in younger children. For instance, recent studies using qualitative methods have revealed awareness of material needs, concerns over neighborhood conditions, and experiences of peer exclusion and stigma on the basis of SES among elementary aged children (Quint et al. 2018).

Limitations and Future Directions

There are three primary limitations to the current study that point to important directions for continued investigation. First, the data reported here are cross-sectional; longitudinal research is needed to fully examine potential mediating relations between family SES, family economic processes, and youth academic outcomes over time. This work should also assess variables related to the hypothesized developmental changes (e.g., shifting school contexts, identity development), and may benefit from a mixed-methods approach, as discussed above. As one example, designs combining interview and survey methods may be able to shed light on some of the unique findings that emerged in this study, such as why youth SSS was associated with parents' perceptions of economic stress about wants but not parent SSS, or what additional factors contribute to youth perceptions of economic stress about needs, over and above parent perceptions of the same issues.

Second, fully investigating these links across childhood and adolescence will require samples that are both higher and lower on the SES spectrum, and reflect a larger range of racial and ethnic backgrounds, than the participants in this study. Just as poverty and economic hardship shape developmental outcomes, cultural privilege shapes the development of middle-class and affluent youth (Calarco 2014), yet these families remain under-represented in studies investigating the effects of economic status and inequality on development (Ruck et al. 2019). The sample for the current study takes a step to address this imbalance, but a wider variety of perspectives is clearly necessary. Even with a relatively small range of middle and higher family incomes, this study found important differences in youths' subjective perceptions of their relative economic standing and perceptions of economic stress and pressure, as well as links between these perceptions and academic adjustment.

An important extension of this study is further examination of how youth perceptions and experiences of their

economic position in contexts outside of the family affect their health and well-being. Beyond academics, school environments have the potential to influence youth perceptions of "place" in an economic-social-cultural hierarchy (Diemer et al. 2013; Destin et al. 2012). For example, despite, on average, doing better academically when attending schools with a higher proportion of middle-class and high achieving peers, children from lower-SES families exhibit more psychosocial problems (e.g., loneliness) as compared with peers from similar SES backgrounds who attend schools with more similar peers (Crosnoe 2009). Given the prominent role of peers and friends during adolescence, studies investigating the extent to which peers and friends influence youth 'feeling hierarchy' (Destin et al. 2012) are important next steps.

Likewise, youth perceptions of their economic position and SSS may inform their societal beliefs, with downstream implications for their health and well-being. Adolescence marks a time of increased awareness, understanding, and investment in broader civic, economic, and political systems (Flanagan 2013; Patterson et al. 2019), with some youth appearing to be more vulnerable to this awareness than others. For example, among early adolescents from lower-SES backgrounds (i.e., based on eligibility for free or reduced price lunch), believing that social systems operate fairly is associated with decreases in self-esteem and increases in risky behavior across the middle school years (Godfrey et al. 2019). Furthermore, among adolescents of color, awareness of economic inequalities coupled with feelings of powerlessness to affect systemic change is associated with higher depressive symptoms and lower academic achievement and engagement (Godfrey et al. 2019). Less well understood, but an important future direction, is to what extent youth perceptions of their economic position and SSS interact with their beliefs about society to inform their health and well-being.

A third limitation to the current study concerns low power to detect some hypothesized effects. The Monte Carlo simulation approach described in Muthén and Muthén (1998–2017) was used to run post-hoc power analyses on the models presented in the Results section. This approach draws a large number of samples (i.e., 10,000) from a population with the parameter values observed, fits the specified model to each sample, and obtains parameter estimates and corresponding SEs. Power is the proportion of replications in which an effect of interest is significant (i.e., the null hypothesis that the parameter is equal to 0 is rejected). Power > .80 is considered sufficient. At the sample size obtained for this study, observed power ranged considerably. For the full model (Fig. 2), power to detect the indirect effects of family income on youth academic achievement, motivation, and expectations was .84, .61, and .04, respectively. In the multi-groups test of moderation, for preadolescents, power to detect the indirect effects of family income on academic achievement, motivation, and expectations was .01, .02, and .04, respectively, and for early adolescents, power for the same indirect effects was .66, .37, and .18, respectively. This means that the study was under-powered to detect smaller hypothesized effects in particular (e.g., indirect effects on youth motivation and expectations). At the same time, the bivariate correlations between income and youth academic motivation and expectations were also non-significant, suggesting that these hypothesized effects may be less pronounced in this sample relative to prior research in this area. Most prior studies investigating economic stress, SSS, and academic outcomes have included lower-SES youth and families, whereas this study included families from middle- to higher-SES backgrounds. Together, these points underscore the need for larger and more socioeconomically diverse samples in future research in this area.

Conclusion

Prior research provided a crucial foundation for understanding the effects of economic stress and SSS on adolescents' emotional health (Conger et al. 2010; Quon and McGrath 2014). To extend this work and address important developmental and contextual questions, this study included a new age group (i.e., preadolescents as well as early adolescents), a less-studied socioeconomic background (i.e., perceived economic stress and SSS in middle- and higher-SES families), and an under-studied set of outcomes (i.e., academic adjustment and well-being). Study results provide evidence that youth distinguish between concerns about meeting their family's economic needs versus wants, and youth concerns about unmet needs in particular were associated with those of their parents. Moreover, the findings suggest that perceptions of economic stress and SSS are related to youth' academic adjustment. Specifically, in this sample, higher rates of perceived stress about needs was associated with lower academic achievement and lower SSS was associated with lower academic motivation. These findings emerged with a sample of middle- and higher-SES families, highlighting the significance of *perceptions* of financial well-being and standing for family processes and developmental outcomes.

Authors' Contributions RSM conceived of and designed the study, interpreted the data, and drafted the manuscript; LE conceived of and designed the study, coordinated the study, performed the statistical analyses, interpreted the data, and drafted the manuscript. Both authors read and approved the final manuscript.

Data Sharing and Declaration This manuscript's data will not be deposited.

Compliance with Ethical Standards

Conflict of Interest The authors declare that they have no conflict of interest.

Ethical Approval This study was approved by the Research Subjects Review Board at the University of Rochester; 00003009, "Peer Relationships and Emotional Wellbeing". The procedures used in this study adhere to the tenets of the Declaration of Helsinki.

Informed Consent Parental consent and youth assent were obtained for all participants.

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