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Diomaris E. Jurecska
George Fox University

Kelly B.T. Chang
George Fox University, kchang@georgefox.edu

Mary A. Peterson
George Fox University

Chloe E. Lee-Zorn
George Fox University

Joav Merrick

See next page for additional authors

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Authors

Diomaris E. Jurecska, Kelly B.T. Chang, Mary A. Peterson, Chloe E. Lee-Zorn, Joav Merrick, and Elizabeth Sequeira

The poverty puzzle: the surprising difference between wealthy and poor students for self-efficacy and academic achievement

Diomaris E. Jurecska^{1,*}, Kelly B.T. Chang²,
Mary A. Peterson¹, Chole E. Lee-Zorn¹,
Joav Merrick³⁻⁶ and Elizabeth Sequeira⁷

¹ Graduate Department of Clinical Psychology, George Fox University, Newberg, OR, USA

² Undergraduate Department of Psychology, George Fox University, Newberg, OR, USA

³ National Institute of Child Health and Human Development, Jerusalem, Israel

⁴ Division of Pediatrics, Hadassah Hebrew University Medical Centers, Mt Scopus Campus, Jerusalem, Israel

⁵ Office of the Medical Director, Health Services, Division for Intellectual and Developmental Disabilities, Ministry of Social Affairs and Social Services, Jerusalem, Israel

⁶ Kentucky Children's Hospital, University of Kentucky, Lexington, KY, USA

⁷ Department of Psychology, Universidad Centroamericana, Managua, Nicaragua

Abstract

This study explored the relationship between intellectual ability, socioeconomic status (SES), academic achievement and self-efficacy in a cross-cultural sample. Data from 90 students (63 students from Central America and 27 from the US) showed that regardless of culture or IQ, students from low SES families had significantly lower grade point averages than students from medium- or high-SES families. Unexpectedly, data showed that regardless of culture or IQ, students from high-SES families had the lowest self-efficacy, but the highest academic performance. Results suggest that self-efficacy is likely to be related to expectations and self-perception beyond IQ or culture.

Keywords: collectivistic; IQ; poverty; self-efficacy; socioeconomic status (SES).

Introduction

One of the American Psychological Association's goals is to be 'a principal leader and global partner promoting

psychological knowledge and methods to facilitate the resolution of personal, societal, and global challenges in diverse, multicultural, and international contexts' (1). Research into cognitive and psychosocial factors in students living in poverty facilitates movement toward this goal. The World Bank has identified education as 'one of the most powerful instruments for reducing poverty and inequality' (2). Increased access to education contributes to a more equitable distribution of economic growth benefits (3). Cross-cultural research on resilience indicates that education is a powerful counterforce against the harmful influence of poverty (4). In terms of well-being, people in high and low status benefit from education (5). Thus, the contribution of psychology to the global challenge of alleviating poverty may depend in part on developing a deeper understanding of the individual factors that contribute to academic success across cultures and socioeconomic conditions.

Nicaragua is one of the poorest countries in the Western hemisphere. It has consistently ranked low (50 out of 59 countries) in the United Nations Human Development Index (HDI; 6). For psychological science to help children in this country, we need to develop a greater understanding of the relationships between students' abilities, beliefs, and social economic status (SES) for this population. This study explored the relationship between self-efficacy (SE), academic achievement (grade point average, GPA), and SES in a cross-cultural sample, while controlling for the effects of IQ.

Self-efficacy as an asset

SE is defined as 'belief in one's capabilities to organize and execute the courses of action required to produce given attainments' (7). Research suggests that high SE is related to perseverance in the face of difficulty, amount of effort expended, and preference for higher goals (7, 8). There is substantial evidence that SE influences success in a number of domains, including cognition, health and clinical recovery, and is a key factor mediating behavior change that improves well-being (7). Some have proposed that SE is a better predictor of success than skills or past accomplishments (7, 9). Its connection to positive outcomes in the face of difficulty mean that it has been considered an important aspect of resilience (10), including the ability to overcome poverty (11). Little is known, however, about how SE might differ in developing countries.

In the academic realm, SE relates positively to mental effort (12), writing performance (13), use of learning strategies (14, 15), mathematics achievement (16, 17) and memory functioning (18), among other things. Specific academic SE has been linked to academic achievement,

*Corresponding author: Diomaris E. Jurecska, MA, Graduate Department of Clinical Psychology, George Fox University, 414 N Meridian Street, Newberg, OR 97132, USA

E-mail: Diomaris@jurecska.com

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including grades and aptitude tests (15, 17, 19–22). Additionally, academic SE has been shown to mediate the relationship between peer victimization and academic performance (21), suggesting that SE may potentiate or buffer the impact of other risk factors related to poor academic achievement.

The positive relationship between intelligence (IQ) and academic achievement has been well-documented. Research on the impact of SE on intelligence found that students' SE for specific cognitive domains correlated with subsequent performance on verbal, numerical and spatial cognitive abilities, but not for mechanical abilities (23). Ayatola and Adedeji (17) showed that mathematics SE was the best predictor of math achievement, but that mental ability did not correlate with math SE, math anxiety or math achievement. Other research has suggested that SE is a better predictor of academic success than IQ. Smith (15) reported that SE related to grades, but IQ did not. Nuovo and Elastico (20) found that SE predicts verbal IQ and academic success, but that IQ does not predict academic success. More research is needed to clarify the connections between ability (IQ), SE, and achievement, especially across cultures.

Self-efficacy in different cultures

Bandura (24) suggested that SE is one of the basic capacities of common human nature and therefore it contributes significantly to performance across cultures. However, many cross-cultural studies have found that non-Western groups tend to have lower SE beliefs than Western groups, but that these lower SE beliefs are more predictive of performance (25). In a review of 20 studies, Klassen (25) concluded that while optimistic SE (predictions higher than actual performance) appears to influence outcomes in Western cultures, realistic SE (predictions closer to actual performance) seem more likely and more effective in non-Western cultures. Klassen (25) concludes that SE operates differently in non-Western compared to Western cultures, but that across cultures SE does tend to be highly predictive of performance. More research is needed on the relationship between SE and positive outcomes in different collectivistic societies. Much of the present cross-cultural research on SE compares Western countries with Asian or Eastern European societies, but research in collectivistic Latin American countries is limited.

A central idea in social cognitive theory is the reciprocal determinism among behavioral, cognitive and environmental influences. According to this premise, SE would improve performance, which would in turn improve SE. Williams and Williams (26) tested the reciprocal determinism of SE and math performance for 15-year-olds in many countries. The structural equation model was a good fit and supportive of reciprocal determinism for 24 of the 33 countries. This suggests that while the relationship between SE and achievement is relevant in many cultures, there is still some cross-cultural variation for these pathways. No Central American countries were included in this analysis. Further research on SE and achievement in different cultures is needed, especially in

developing countries where SE could be a tool to help children improve their situations.

Low socioeconomic status as a risk

A family's SES is often defined by the parents' education, occupations and incomes (27). SES is among the variables most strongly connected to various important outcomes in resilience research (28). Particularly, lower SES relates to poorer academic and socio-emotional adjustment (29, 30).

SES influences student achievement through a multitude of pathways, including levels of trust in school, academic aspirations, choice of peers, and occupational goals (31–35). Parents' beliefs and educational successes are particularly influential in predicting children's achievement (36). Lower SES families might have less access to resources for creating a stimulating and warm home environment and might be at higher risk for lower achievement (37). Parental stress influences children's academic achievement. McLoyd (38) states that lower income parents have higher parental stress levels and lower mental health, which then influences parenting behaviors in the home and results in negative consequences for children. A study of diverse family dynamics found that Mexican American children had more adjustment problems when they experienced parental conflicts in the home than other ethnicities (39).

Low SES, achievement, and self-efficacy

When SES, achievement, and SE are considered together, results have generally suggested that SES and SE both contribute to academic success. The general direction of the relationship, according to regression analyses, indicates that SE mediates the relationship between SES and achievement. Research has shown that parents' SES is influential in predicting a student's achievement and SE (36), with low achievement linked with lower SES (40). SE appears to mediate the relationship between the home environment and a problems index (which includes spelling, reading, math, grades, task orientation and considerateness), for both European Americans and African Americans (41). In a study of Italian students, SES directly influenced junior high school grades and high school drop-out rate (33). The same study found that SES influenced SE for self-regulated learning in high school indirectly (through junior high school grades). SE for self-regulated learning, in turn, also influenced high school grades.

Williams and Williams (26) found that in all but two of 30 countries SES had a significant, positive effect on math achievement test scores. SES also had a positive effect on SE for math, but only in 19 of 30 nations. This suggests that culture may influence the pathways between poverty, SE and achievement.

Overview of the current study

Higher SE is related to academic achievement and IQ for students living in the United States (US) and similar Western societies. Despite this, research has not consistently

demonstrated the predictive utility of SE for people in other cultures and economic classes (25, 26, 42). Research on intelligence, SE and academic achievement is limited both in low SES residents of the US, as well as in developing countries. The primary purpose of this project was to explore the pathways of SES, SE, and grades in a collectivistic, developing nation, and an individualistic, developed nation. In order to reduce the confounding influence of linguistic differences, the US sample consisted of mainly first- and second-generation Spanish-speaking immigrant children.

Three hypotheses were undertaken to examine the relationship between SES, grades and SE in the two countries. Based on the current research, we hypothesized that SE would relate positively to GPA (hypothesis 1). This result would corroborate the current understanding of how SE enhances academic achievement (15, 17, 19–22). Second, that SES would correlate with GPA, with low-SES students achieving lower grades (hypothesis 2); corroborating previous research on SES and academic achievement (31–35, 38). Finally, we hypothesize that the relationship between SES and grades is mediated by SE (hypothesis 3), which seems to be the general pattern in research in other cultures (33, 41). The relationships between these factors may, however, demonstrate a different pattern than typically shown in Western societies, as demonstrated in cross-cultural literature (25, 26).

Methods

Ninety-one Spanish-speaking participants, aged 6–16 years old were randomly selected using the table of random numbers by school administrators and psychologists from a convenience sample of students from four different school districts (two in Nicaragua and two in the US). Of the selected participants, one did not qualify because her age was beyond the criteria established by the study. Therefore, 90 participants, including 27 residents of the US and 63 residents of Central America (CA) completed the Wechsler Intelligence Scale for Children – IV, Spanish version (WISC-IV, Spanish), the SE Questionnaire for Children (SEQ-C), a short demographic questionnaire (including questions regarding parent education, occupation and immigration status) and a short, structured interview. The WISC-IV, SEQ-C, demographic questionnaire and short, structured interview were completed in the students' primary language. The students' SES, GPA, eligibility for special education services and primary language spoken at home were obtained from students' school files (if information was unavailable from student files, it was collected during the interview). The study participants included 46 boys and 44 girls who ranged in age from 6 to 16 years with an average age of 11.57 years (standard deviation, SD, 3.0 years).

In the US sample ($n=27$), all participants resided in the Northwest and were enrolled in rural school districts. Ninety percent of these students' parents worked agricultural jobs. Their school records indicated that 80% of this sample group was first generation (born in Mexico), and 20% was second generation (born in the US, with parents born in different Latin American countries). For the first generation subgroup ($n=18$) length of residence in the US ranged from 5 to 15 years ($M=7.5$ years, SD 3.0 years). Of this sample, 85% reported speaking Spanish at home.

The participant sample from Nicaragua consisted of 63 students from two schools in the capital city of Managua. One school was a private institution and participants ($n=33$) were randomly selected

from a pool of students who had been referred to the school psychologist between January 7, 2008 and January 7, 2010. Of this group, 70% reported speaking a second language (however, Spanish was the primary language) and most of their parents had obtained college-level education. The remaining 30 participants were randomly selected from two rural school districts located in the Pacific Northwest. Of these, 68% of the students' parents worked in service occupations and 32% were unemployed.

Typically, SES is calculated by combining three factors: family income, parent education and occupation. Using this formula, the data from the US participants were assigned a combined score that reflected these factors, with each domain receiving one point for a possible total score of three. Family income was defined by free or reduced lunch eligibility (which is based on reported income of $< \$40,000$ for families with four or more members). If students were ineligible the family income was coded as 1. Level of parent education was coded as a 1 if both parents had completed high school or one parent had completed high school and some college. If both parents were employed full-time or at least one parent was employed in professional occupation, parent occupation was coded as 1. Participants receiving a score of 3 were coded as high SES; a total score of 2 was coded as middle SES, and a total score of 1 was coded as low SES. Nicaragua is the second-poorest country in the Western hemisphere (43), however, and its SES indicators differ greatly from developed nations (44). Based on Nicaragua's social situation, the SES indicators were slightly different. We retained the same criteria for parent education (both parents' completed secondary school or one parent with some college education=1) and parent occupation (with both parents employed full-time or at least one parent employed in professional occupation=1). Income, however, was coded in comparison to the average income per capita (income greater than average per capita=1).

This study followed the American Psychological Association's ethical guidelines to protect the confidentiality of participants' records, including de-identification of data. Parental consent and participant assent was provided, including the explanation that participation was voluntary, participants could discontinue the study at any time without penalty and only aggregate data would be reported. The Institutional Review Board of George Fox University approved this research project.

Instruments

Self-efficacy questionnaire for children (SEQ-C) This 24-item scale was created by Peter Muris in 2001 to assess a general sense of perceived SE in order to predict coping with daily hassles as well as adaptation after experiencing all kinds of stressful life events (45). Responses are made on a five-point Likert scale. It requires 10 min on average to complete the SEQ-C. The scale provides a total SE score obtained from adding the three subscales: academic, social, and emotional. The academic SE subscale provides information about perceived coping skills specific to scholastic activities. The social subscale extracts information related to adaptive social skills that are specific to peer relationships and personal boundaries. Lastly, the emotional subscale examines a child's self-regulation and emotional adaptive skills. The scale has moderate psychometric properties in English. It was translated and verified through blind back translation and then given to a large sample of children and adolescents ($n=90$). Internal reliability was analyzed with Cronbach's alpha showing a 0.91 coefficient.

Wechsler Intelligence Scale for Children – Spanish, fourth edition The WISC-IV Spanish is an adaptation of the WISC-IV. This measure provides sound psychometric properties of Spanish-

speaking children's intellectual abilities. The normative sample included Spanish-speaking children from countries in South, Central, and North America (46, 47). It is the most widely used intelligence measure for children in the US. This individually-administered battery provides a comprehensive measure of the intellectual ability of Spanish language-dominant children aged 6 through 16 years. It consists of one full scale IQ (FSIQ) and four index scores: verbal comprehension (VCI), perceptual index (PRI), working memory (WMI), and processing speed (PSI). The VCI measures general verbal skills, such as verbal fluency, conceptualization and knowledge of words. The PRI measures non-verbal knowledge and fluid reasoning. The WMI assesses the ability to memorize, concentrate, manipulate and retrieve new information. The PSI measures attention, speed and the ability to discriminate between visual and verbal stimuli.

The WISC-IV Spanish has comparable psychometric properties to the WISC-IV. The norming sample allows for comparison to other Spanish-speaking children with similar US educational experience, as well as parental education. Additional base rate and critical values scores for composite and discrepancy comparison were developed to strengthen the test's utility. Test items have been modified to minimize cultural bias across multiple regions. The examinee earns credit for answers in Spanish and English.

Procedure

The randomly selected participants and their parents received an invitation and informed consent document explaining the purpose of the study, the expected risks and benefits. The examiner also reviewed the relevant information with the students to obtain their assent to participate. In all four settings (two schools in Nicaragua and two in the US), students participated in the assessment in one pre-selected room inside the school facility. Snacks were provided to students, regardless of whether or not they chose to participate in the study. If the participant met the study criteria and gave consent, he or she participated in a short clinical interview and was administered the study instruments in the following order: interview/demographic questionnaire, cognitive test and SE measure.

Following completion, the participant was debriefed using a designated script. School staff then returned the participant to his or her classroom and brought in the next potential participant. The testing session took no more than 90 min. The data were analyzed using SPSS (SPSS Inc., Chicago, IL, USA) for Macintosh to produce descriptive statistics (means and standard deviations). To calculate

Pearson product-moment correlations, a significance level of $p < 0.05$ was adopted as the criterion for all correlation coefficients.

Inter-rater reliability

Two doctoral candidate psychology students with extensive assessment experience conducted the administration and scoring of the instruments. One of the students was both bilingual and bicultural, and the other student utilized an interpreter for the assessment administration. A licensed psychologist reviewed the scoring of 20% of the WISC IV data to ensure accuracy in assessment.

Results

Table 1 presents the correlations between the variables measured, including the mean and SDs for the total sample. SES correlated with everything except academic SE. GPA correlated with IQ ($r = 0.747$, $p = 0.000$), but not with SE. IQ correlated mildly with social SE and academic SE. Subscales of the SEQ-C had strong correlations with each other.

As shown in Table 2, participants showed no differences in IQ, GPA, total SE or SES scores based on country of residence (Nicaragua vs. US) or gender. Therefore, scores were aggregated across culture and gender for the multivariate analysis of variance (MANOVA) and analysis of variance analyses.

The main purpose of this study was to determine the effects of SES on the variables in question. The MANOVA explored the differences between the low-, medium- and high-SES groups in IQ, GPA and SE. In addition to the total SE score, we also explored differences between the groups on the three subscales of the SE measure: academic, social and emotional SE.

A MANOVA showed there was a significant difference between SES groups on the dependent variables (Wilks' Lambda (10,166)=3.10, $p < 0.001$). Subsequent univariate tests showed no significant differences between groups on two of the subscales of the SE measure (social S, $F(2,87) = 2.98$, $p = 0.056$; or emotional SE, $F(2,87) = 3.02$, $p = 0.054$). There were significant differences, however, between groups on

Table 1 Summary of intercorrelations, means, and standard deviations for socioeconomic status, grades, intelligence, and self-efficacy for the total sample.

	1	2	3	4	5	6	7
1. SES	–						
2. GPA	0.360 ^a	–					
3. FSIQ	0.259 ^b	0.747 ^a	–				
4. SOCSE	–0.223 ^b	0.116	0.234 ^b	–			
5. EMOSE	–0.225 ^b	0.081	0.202	0.888 ^a	–		
6. ACASE	–0.199	0.084	0.207 ^b	0.842 ^a	0.891 ^a	–	
7. TOTALSE	–0.270 ^b	0.080	0.194	0.915 ^a	0.931 ^a	0.922 ^a	–
<i>M</i>	1.70	2.95	91.16	24.14	20.60	24.63	68.51
<i>SD</i>	0.83	0.71	19.44	10.64	9.30	10.76	29.39

Intercorrelations for total sample ($n = 90$). ACASE, academic self-efficacy; EMOSE, emotional self-efficacy; FSIQ, full scale IQ; GPA, grade point average; SES, socioeconomic status; SOCSE, social self-efficacy; TOTALSE, total self-efficacy. ^aCorrelation is significant at the 0.01 level (two-tailed). ^bCorrelation is significant at the 0.05 level (two-tailed).

Table 2 Descriptive statistics: full-scale IQ, grade point average and total self-efficacy by socioeconomic status.

Variables	n	FSIQ		GPA		Total SE		Acad SE	
		<i>M</i>	SD	<i>M</i>	SD	<i>M</i>	SD	<i>M</i>	SD
Low-SES	48	86.7 ^a	20	2.7 ^a	0.78	73.2 ^a	21.9	25.6 ^{a,b}	7.9
Medium-SES	21	93.8 ^{a,b}	21.6	3.6 ^b	0.67	74.8 ^a	28.0	27.6 ^a	11.0
High-SES	21	98.6 ^b	12.3	3.3 ^b	0.23	51.5 ^b	29.4	19.4 ^b	14.4
<i>F</i>		3.15		6.96		5.04		3.73	
p-Value		0.048		0.002		0.008		0.028	

Acad SE, academic self-efficacy; FSIQ, full-scale IQ; GPA, grade point average; *M*, mean; SD, standard deviation; Total SE, total self-efficacy. Different superscripts within each column indicate significant ($p < 0.05$) differences. ^aCorrelation is significant at the level 0.05. ^bCorrelation is significant at the level 0.01.

academic SE, $F(2,87)=3.73$, $p=0.03$; total SE, $F(2,87)=5.04$, $p=0.008$; grade point average $F(2,87)=6.96$, $p=0.002$; and IQ $F(2,87)=3.15$, $p=0.048$.

Post-hoc analysis Tukey's honestly significant difference (HSD) test showed the differences between levels of SES on the variables of academic SE, total SE, GPA and IQ (See Table 2). In exploring the between-group differences for academic SE, results showed there was a difference between SES groups with the middle-SES group, showing significantly higher levels of academic SE ($M=27.62$, SD 10.99) than the high-SES group ($M=19.38$, SD 14.35; $p < 0.033$). There were no significant differences between low SES group ($M=25.63$, SD 7.93) and the other two groups when compared.

For between-group differences in total SE, the low-SES group showed significantly higher levels of SE than the high-SES group ($M=73.22$, SD 21.94 vs. $M=51.47$, SD 39.08, respectively; $p < 0.011$). The middle-SES group ($M=74.76$, SD 28.02) also showed significantly higher levels of SE than the high-SES group ($M=51.47$, SD 39.08), $p < 0.024$.

The different levels of SES also showed a significant difference in GPA, with that of the low-SES group being significantly lower than the middle-SES group ($M=2.71$, SD 0.78, vs. $M=3.16$, SD 0.66, respectively; $p=0.030$). The low-SES group also showed a significantly lower GPA than the high-SES group ($M=2.71$, SD 0.78 vs. $M=3.30$, SD 0.22, respectively; $p=0.003$). There was no significant difference between the GPA of the middle- and high-SES groups.

In summary, the middle-SES group had higher academic and total SE scores than the high-SES group, with the low-SES group also showing higher total SE scores than the high-SES group. This was an unexpected result, because the high-SES group had a significantly higher GPA than the low- and middle-SES groups. These results suggest that SES might influence perceived SE ability.

Hypothesis 1, that SE would relate positively to GPA, was not supported in this sample of participants. SE had no correlation with GPA. In fact, the SES group with the highest GPA had the lowest SE. Hypothesis 2, stating that SES would relate negatively to GPA, was supported. The low-SES group had a significantly lower GPA than the middle- or high-SES groups. Regarding hypothesis 3, we chose not to test the mediational effects with SES, SE and grades because SE did not correlate with grades – a prerequisite for a mediational analysis.

Discussion

An overview of the research has demonstrated that education is one of the most important factors in overcoming poverty (2, 3). Therefore, psychology's contribution to understanding poverty and finding a solution may exist in evaluating the individual factors that influence academic success. Prior research has indicated that there is a positive correlation between SE and academic achievement (15, 17, 19–22). SE itself has been connected to various benefits, including coping with adversity, greater effort in accomplishing tasks as well as seeking higher goals. Academic achievement related to SE is described as 'an individual's judgments of his or her capacity to perform given actions', such as a school-related assignment or a test (9).

Nicaragua, one of the poorest countries in the Western hemisphere, provides a valuable opportunity to explore the complex relationship between a child's SE, intelligence and achievement. The current study explored this relationship within the sample of children from Nicaraguan sample and then compared the results with that of Spanish-speaking students from the US.

Three hypotheses were undertaken to examine the relationship between SES, grades and SE in the two countries. Based on the current research, we hypothesized that SE would relate positively to GPA. This result would corroborate the current understanding of how SE enhances academic achievement (15, 17, 19–22). Second, SES would correlate with GPA, with lower SES students achieving lower grades. This would corroborate with research on SES and academic achievement (31–35, 38). Finally, we hypothesized that the relationship between SES and grades would be mediated by SE, which seems to be the general pattern in research in other cultures (33, 41). SES impacts a student's achievement in many ways, such as acquiring trust in areas of academia, friendships and occupational aspirations (31–35). Individuals with lower SES are likely to lack resources that promote a warm and nurturing home environment optimal for studying and learning (37).

The relationships between these factors, however, demonstrated a different pattern than that typically shown in Western societies, as demonstrated in cross-cultural literature (25, 26). The results indicated that those with a medium SES possess higher academic and total SE scores than those in the higher SES bracket. In addition, those with lower SES also displayed

higher SE than those with higher SES. Overall, this was a surprising finding, considering the significantly higher GPA in the high SES group. The results suggest that SES impacts SE, even when controlling for SES and culture.

There are a few potential implications for the results of the current study. One suggestion to consider is the sources that lead to the development of SE in an individual. For example, a person's successes and failures (mastery experiences), vicarious experiences (watching peers), verbal persuasion and physiological and affective states all have a potential impact on the development of SE (9). Another indication is the effect of differing parenting styles, such as a high-achieving vs. a low-achieving approach. If a parent falls into the high-achieving category, what impact does this have on his or her child's development? According to Kao and Tienda (48, 49) many factors can influence educational outcomes, including family rules, communication and parental involvement. In the case of an immigrant family, the parents are more likely to have rules related to grades and schoolwork than rules for housework and chores. This type of parenting emphasizes educational tasks as the child's primary responsibility (50–52).

Another area of consideration relates to parental communication style. Research indicates that direct communication about school impacts academic performance (53) and that there is variability in communication style based on race and ethnicity. In the case of immigrant parents, direct communication about school is not common, as academic issues are often discussed in abstract terms. Communication preferences can also impact on parental involvement in school activities. Studies have shown a positive correlation between high-achieving students and increased parental support of school-related activities. It is worthwhile considering that an immigrant parent may not feel as comfortable within a new culture, which could impact on the level of school involvement in his or her child's academic pursuits (48, 52, 54, 55).

With many different influences on a child's academic achievement, including parental style, communication level, structure and level of acculturation, how do these impact a child's level of self-appraisal? Various pieces of research have suggested that a person's expectancy directly impacts behavior (9). The SE theory postulates that people obtain efficacy through various sources, including previous accomplishments, observation, persuasion from others and physiological means (56, 57). Information received from these sources is evaluated through cognitive appraisal and applied based on factors including personal, situational, task difficulty, energy used, outside assistance and the legitimacy of others' appraisals.

Considering the many factors that contribute to a child's self-appraisal and academic achievement, it is also essential to evaluate the relative effect of SES on a child's success in school. Previous research has shown that SES has a positive relationship with student achievement (58). Contrary to these findings, the current study found that students from the middle SES had higher academic achievement and SE than the higher SES sample. In addition, the lower SES group displayed higher SE than the higher SES group. This is an interesting finding, considering that the higher SES group

had a significantly higher GPA than the medium and lower groups. These results were unexpected, as there is a significant amount of research to support SES as a predictive factor in achievement cross-culturally.

There are certain limitations that are apparent in this research study. They include a small sample size for the US. With a large sample from the US, additional trends may become apparent. Another limitation relates to the unequal number of individuals with lower and higher SES, making it difficult to compare these two groups. In addition, the operational definition of class is potentially affected by a Western understanding of SES. For example, in this sample the student was considered middle class if one member of the family was employed in a stable job. Finally, there was also an uneven distribution of age across the sample, with a disproportionate amount of children from the middle school age group.

In summary, there are some suggested future directions within the area of SE and SES. There is a great need for research aimed at a better understanding of the nature of SE and its manifestation within a collectivist culture. One suggested area of further study is how a collectivist culture perceives SE. Considering that self-worth in a collectivist culture is often based upon group norms rather than individual abilities, it is likely that this greatly impacts their understanding of SE.

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