

Prosocial Tendencies among Chinese American Children in Immigrant Families: Links to Cultural and Socio-demographic Factors and Psychological Adjustment

Alexandra Main¹, Qing Zhou², Jeffrey Liew³ and Charlene Lee⁴

¹*University of California, Merced*

²*University of California, Berkeley*

³*Texas A&M University*

⁴*Chapman University*

Abstract

The present study examined relations between prosocial tendencies (dispositional sympathy and prosocial behavior) and psychological adjustment using a multi-method and multi-informant approach in a socioeconomically diverse sample of first- and second-generation Chinese American children from immigrant families (N = 238, M age = 9.2 years). We tested the concurrent associations between: (a) children's dispositional sympathy (rated by parents, teachers, and children, and observed prosocial behavior), (b) psychological adjustment (parent- and teacher-reported externalizing problems and social competence); and (c) cultural and socio-demographic factors (children's Chinese and American orientations, family Socioeconomic Status (SES), only child status, and children's age, sex, and social desirability). Results from correlations and structural equation modeling suggested that different measures of prosocial tendencies related differently to children's psychological adjustment. Parent- and teacher-rated sympathy were associated with higher child social competence and lower externalizing problems within, but not across, reporter. By contrast, child-rated sympathy was associated with higher teacher-rated social competence, and observed prize donation was associated with lower teacher-rated externalizing problems. Different measures of prosocial tendencies also showed different relations to cultural and socio-demographic factors. These findings suggest that prosocial tendencies are not a unitary construct in Chinese American immigrant children: the manifestations of prosocial tendencies and their adjustment implications might depend on the context and/or targets of these tendencies.

Keywords: empathy; culture; immigrants; social competence; prosocial behavior

Correspondence should be addressed to Qing Zhou, Department of Psychology, University of California, 3210 Tolman Hall #1650, Berkeley, CA 94720-1650, USA. Email: qingzhou@berkeley.edu

Introduction

Children growing up in immigrant families face unique challenges, including socioeconomic difficulties (Leventhal & Brooks-Gunn, 2000), exposure to multiple sets of cultural values (Gonzales, Fabrett, & Knight, 2009), and acculturative stress (Williams & Berry, 1991). Despite these challenges, children from immigrant families sometimes thrive and have better adjustment than their native-born peers, likely due to culturally unique protective processes (García-Coll & Marks, 2012; Zhou et al., 2012). Although it is widely acknowledged that prosocial tendencies are critical components of socioemotional competence and can be a developmental asset for children's mental health and interpersonal relationships (see Flynn, Ehrenreich, Beron, & Underwood, 2015), there has been limited research focusing on prosocial development in children of immigrant families.

Asian-Americans are now the fastest growing foreign-born population in the USA (Pew Research Center, 2012) and Chinese-Americans are the largest subgroup of Asian-Americans. The study of specific ethnic or cultural groups is needed to better understand how prosocial tendencies are related to social and psychological adjustment. Indeed, whereas prosocial behaviors are valued by many ethnic or cultural groups, a study on Latino and Chinese children from Head Start classrooms showed that prosocial behaviors were related to friendship choices for Chinese but not Latino children (Lee, 2015). Thus, while prosocial behaviors are important for all children, the implications of these behaviors for different aspects of psychosocial adjustment for immigrant children warrants further research.

The present study used a multi-method and multi-informant approach to assess prosocial tendencies in a socioeconomically diverse sample of first- and second-generation Chinese-American children from immigrant families. We tested the concurrent associations between: (a) children's dispositional sympathy (rated by parents, teachers, and children, and observed prosocial behavior), (b) psychological adjustment (parent- and teacher-reported externalizing problems and social competence); and (c) cultural and socio-demographic factors (children's Chinese and American cultural orientations, family Socioeconomic Status (SES), only child status, and children's age, sex, and social desirability).

Prosocial Development and Its Links to Children's Psychological Adjustment

Prosocial tendencies include individuals' disposition or propensity toward empathy-related responding (including empathy and sympathy; see Eisenberg, Eggum, & Di Giunta, 2010 for a review) and prosocial behavior. Prosocial development plays a critical role in individuals' emotional well-being, social relationships, and long-term health (Edwards et al., 2015; Flynn et al., 2015). Although empathy and sympathy are different constructs, they are often used interchangeably in the literature. Research with children generally draws the distinction between dispositional sympathy (the tendency to sympathize with others across contexts) and prosocial behavior (i.e., voluntary behavior intended to benefit another, Eisenberg, Fabes, & Spinrad, 2006). Whereas individuals' dispositional tendencies to experience sympathy are expected to be related to their prosocial responding across situations (e.g., Valiente et al., 2004), the link is likely to be stronger when there is correspondence between the contexts in which sympathy and prosocial behavior are measured (Holmgren, Eisenberg, & Fabes, 1998).

Although prosocial tendencies are generally associated with favorable developmental outcomes in school-aged children (Eisenberg et al., 2006, 2010), the links are more consistent for sympathy than prosocial behavior. Indeed, consistent with the theory that sympathy often motivates altruistic behavior and deters aggression, researchers have consistently found a negative association between children's sympathy and externalizing behaviors (see Eisenberg et al., 2010 for a review). A recent study found that prosocial behaviors were stable across middle childhood and adolescence, and high stability in prosocial behavior was associated with fewer externalizing problems (Flynn et al., 2015). Moreover, consistent with the theory that sympathy can foster social connection by allowing individuals to share and understand each other's emotions and engage in altruistic behavior (Eisenberg et al., 2010), children's sympathy has been associated with higher social competence (Sallquist, Eisenberg, Spinrad, Eggum, & Gaertner, 2009) and better emotion regulation and lower negative emotionality (Laible, Carlo, Murphy, Augustine, & Roesch, 2014). Similar associations between prosocial tendencies and adjustment have also been found in native Chinese children. Chinese adolescents who showed less empathic concern for others were more likely to display deliberate aggression (Fung, Gerstein, Chan, & Engebretson, 2013). Furthermore, empathy was negatively associated with mental health problems in Chinese migrant adolescents (Au, Wong, Lai, & Chan, 2011).

By contrast, the links between prosocial behavior and psychosocial adjustment are complex, likely because a variety of factors can motivate prosocial behaviors (Eisenberg et al., 2006). Svetlova, Nichols, and Brownell (2010) studied toddlers' prosocial behavior (helping an adult) in three contexts: instrumental (action-based), empathic (emotion-based), and altruistic (costly). They found that the three types of helping behavior had different developmental trajectories, likely due to differences in their social-cognitive demand. Thus, prosocial behavior may be more context-dependent than dispositional sympathy. However, positive associations between prosocial behavior and psychosocial adjustment have been reported in studies of children's dispositional prosocial behaviors (e.g., helping behaviors across situations) (e.g., Chen, Li, Li, Li, & Liu, 2000). This suggests that prosocial tendencies across contexts are associated with positive adjustment.

Because the literature suggests that sympathy and prosocial behavior are different developmental constructs and may serve different functions in children's psychological adjustment, we examined their separate associations with children's adjustment (externalizing problems and social competence) in this study.

Prosocial Tendencies and Psychological Adjustment in Children from Immigrant Families

Although the majority of research on prosocial development has focused on children of non-immigrant families, the bulk of work that has been conducted with children of immigrant families has focused on Latino American adolescents. Carlo and de Guzman (2009) hypothesized that US Latino immigrant youths' prosocial development is jointly influenced by multiple proximal contexts (including the receiving community, family, peers, life events, and school). Moreover, the influences of proximal contexts on youths' prosocial development are mediated by youths' socio-cognitive processes (e.g., empathy-related responding and ethnic identity) and acculturative stress. Consistent with theory, empirical studies have revealed both

between-group and within-group variations in prosocial tendencies. Studies focusing on cross-group comparisons found that immigrant Mexican-American youth were generally more prosocial and cooperative than US-born Mexican-American youth and European-American youth (see Knight & Carlo, 2012 for a review). Within-group studies showed that culturally-specific psychological processes such as parents' cultural socialization practices, youth's ethnic identity, and cultural orientations were associated with greater prosocial tendencies in Mexican-American youth (Carlo & de Guzman, 2009; Knight & Carlo, 2012).

There are several culturally unique characteristics of Asian-American families that have implications for children's prosocial development. On the one hand, traditional Asian cultures place high emphasis on collectivism, interdependence, and group harmony. Because prosocial tendencies are conducive to interdependence and group harmony, these traits may be encouraged and fostered by ethnic socialization practices in Asian-American immigrant families (Stewart & McBride-Chang, 2000). On the other hand, recent Asian immigrants (those who immigrated after 1980s) are also influenced by contemporary sociocultural changes taking in place in rapidly industrialized Asian countries (China is the most notable example), where traditional values and cultural practices are being replaced by Western individualistic values, beliefs, and lifestyles. The need to foster children's competitiveness, autonomy, and personal achievement might take higher priority over the goal of fostering children's prosocial tendencies in contemporary native and immigrant Chinese families (see Chen et al., 2000, 2002). Thus, Chinese-American immigrant families provide a unique opportunity to study complex cultural influences on prosocial development.

Links of Cultural and Socio-demographic Factors to Chinese-American Children's Prosocial Tendencies

To further understand the sources of individual differences in Chinese-American children's prosocial tendencies, we considered the roles of children's cultural orientations and socio-demographic factors including SES, only child status, child age, sex, and social desirability.

Cultural Orientations

Cultural orientation refers to the degree to which individuals are influenced by and actively engage in the traditions, norms, and practices of the specific culture (Tsai, Chentsova-Dutton, Freire-Bebeau, & Pryzmus, 2002). Recent research suggests that cultural orientation of immigrant youth can simultaneously involve acculturation (i.e., adaption to the mainstream or host culture) and enculturation (i.e., adaptation to immigrants' heritage culture) (Chen et al., 2014; Gonzales et al., 2009). There is very limited research on the links between immigrant children's cultural orientations and prosocial development, especially in school-age children. Studies of adolescent samples showed that immigrant families place a stronger emphasis on family obligation (i.e., responsibilities surrounding caring for family members and contributing to family's well-being) compared with non-immigrant families (Fuligni, Tseng, & Lam, 1999; Suárez-Orozco & Suárez-Orozco, 2001). These expectations may be associated with an emphasis on prosocial goals by family members, which may in turn contribute to the salience of prosocial goals for children. Indeed, Mexican-American adolescents who identified more closely with their ethnic group engaged

in more prosocial behaviors than those with weaker affiliation with the ethnic culture (Schwartz, Zamboanga, Jarvis, 2007). Based on these findings, we hypothesize that children's Chinese orientation would be positively associated with their prosocial tendencies.

Acculturation is hypothesized to confer benefit for immigrant children's psychosocial adjustment, especially during the elementary school period, in which they are faced with the critical task of becoming adjusted to and integrated with the mainstream education system. Indeed, two studies of immigrant Chinese school-age children residing in the USA or Canada reported positive associations between children's acculturation and psychological adjustment (Chen et al., 2014; Chen & Tse, 2010). Based on these findings, we also hypothesize that immigrant children's American orientation would be positively associated with their prosocial tendencies. It is important to note that cultural orientations to different cultures need not be mutually exclusive. Many individuals increase orientation to the host culture after immigration while maintaining the values of the heritage culture (see Chen et al., 2014). Therefore, we hypothesized that both Chinese and American orientation would be positively associated with Chinese-American children's prosocial tendencies.

Socioeconomic Status (SES)

According to the Family Stress Model (Conger, Rueter, & Conger, 2000), low socioeconomic status puts children at risk for emotional and behavioral problems, likely through increasing family and interparental conflict, parents' psychological stress, and negative parenting practices. Indeed, family economic strain predicted lower prosocial responding among adolescents (Carlo, Padilla-Walker, & Day, 2011). Eisenberg and colleagues posited that children from more well-educated families may develop more advanced moral reasoning skills, which may in turn foster more prosocial responding in social situations (Eisenberg, Zhou, & Koller, 2001). In addition, children from higher-SES families may have more resources to help others (e.g., donating their toys and material goods to the children in need). Thus, we hypothesized that SES would be associated with greater sympathy and more prosocial behavior.

Only Child Status, Child Age, Sex, and Social Desirability

Consistent with the hypothesis 'sibling deprivation' may cause only children to be self-centered, less cooperative, and less likely to get along with peers, Cameron, Erkal, Gangadharan, and Meng (2013) found that being an only child is associated with being less trusting, less trustworthy, and having less conscientiousness in native Chinese adults compared with those with siblings, after controlling for family background effects. With regard to age, children's empathy generally increases over time (Schwenck et al., 2014). Moreover, children's prosocial development has also been shown to vary across gender. Girls have a tendency to behave more empathically and prosocially than boys, although these differences are more consistent when empathy is measured with self-report than with behavioral measures (Zhou, Valiente, & Eisenberg, 2003). Finally, although researchers have not consistently found a link between social desirability and empathy-related responding, there are associations between social influence and empathy (see Eisenberg et al., 2010). Based on the above review, we included the only child status, child age, sex, and

social desirability as additional predictors of Chinese-American children's prosocial tendencies.

The Present Study

In summary, the present study had three aims: (1) to test associations between children's dispositional sympathy and prosocial behavior, (2) to examine links between children's prosocial tendencies and psychological adjustment (externalizing problems and social competence), and (3) to examine the relations of cultural orientations and socio-demographic factors to Chinese-American immigrant children's prosocial tendencies.

Method

Participants

Participants were 238 children (48.1% female, M age = 9.2 years, $SD = .73$, range = 7.5–11.0 years), their parents, and teachers who participated in a longitudinal study of psychological, social, and academic adjustment of first- and second-generation Chinese-American children from immigrant families in the San Francisco Bay Area (Chen, Zhou, Main, & Lee 2015; Chen et al., 2014). This article used data collected from Wave 2 of the study (approximately 1.5–2.5 years after Wave 1) because prosocial tendencies were not assessed at Wave 1. Children were in third (45.6%) or fourth grade (47.7%) at the time of assessment to capture a developmental period when culture is expected to have a strong influence on mental health adjustment (see Chen et al., 2014) and prosocial tendencies become somewhat stable (Flynn et al., 2015). The majority of children were from two-parent families, (90.6%), and had at least one sibling living at home (81.2%).

The sample was recruited using a variety of methods, including conducting recruitment fairs in Asian-American communities, through schools, and seeking referrals from Asian-American community agencies and organizations (see Chen et al., 2014 for a more detailed description of the study procedures). A total of 258 children and their parents completed the Wave 1 assessment, and 238 of these families participated in the second assessment approximately 2 years later (retention rate = 92.2%).

Procedure

The child and one parent participated in a 2.5-hour laboratory assessment, which included a child interview, cognitive and behavioral tasks, a parent interview and questionnaire session, and parent-child interaction. All questionnaires and interviews were administered in the parent's or child's preferred language (English, Mandarin, or Cantonese) indicated at the beginning of the visit. All written materials (including consent and assent forms and questionnaires) were available in English, simplified Chinese, or traditional Chinese. The majority of parents (75.6%) completed the questionnaires in Chinese and all the children completed the assessment in English. After the lab visit, the child's current classroom teacher was asked to complete teacher questionnaires by mail. Parents and teachers were paid for their participation and children received small prize(s).

Measures

The present study used data collected from parent and teacher questionnaires, child interview, and a child behavioral task. The measures that had not been previously used in Chinese-speaking samples (i.e., the prize donation task and the sympathy questionnaires) were translated, back translated, and piloted following the procedures outlined by Knight, Roosa, Calderón-Tena, and Gonzales (2009).

Demographic Characteristics (Parent Report). The Family Demographics and Migration History Questionnaire was used to assess family demographic characteristics. The scale used in the present study was adapted from a measure used in a study of Mexican-American immigrant families (Roosa et al., 2008), which included questions on maternal and paternal education, family income, whether the child received free or reduced lunch at school, and mothers' and fathers' country of birth and length of stay in the US. Questions involving ethnicity and country of origin were modified for use in the present sample.

Child Cultural Orientations (Parent Report). Parents rated children's cultural orientations using the Cultural and Social Acculturation Scale-Child Version (CSAS-C, Chen & Lee, 1996; Chen & Tse, 2010). The CSAS-C is a bidimensional scale, which permits the assessment of independent variation in the heritage (Chinese) and mainstream (American) cultural dimensions. The CSAS-C has two subscales: (a) the American orientation/Acculturation subscale (14 items), and (b) the Chinese orientation/Enculturation subscale (12 items). The items mainly assess the child's level of social and behavioral adherence to the American and Chinese cultures in the domains of language fluency, media use, and social affiliations. In a study of Chinese immigrant preschool-age children, parent-rated CSAS-C had alphas of .85 and .61 (Garrett-Peters & Fox, 2007). In another study (Chen & Tse, 2010), Canadian-Chinese school-aged children's Chinese and Western orientations measured by the CSAS-C were associated with teacher-rated social competence and peer sociometric nominations. In the present sample, the alphas were .79 for the American orientation subscale and .75 for the Chinese orientation subscale. Thus, the composites for children's American orientation and Chinese orientation were computed as the averages of standardized item scores in the corresponding subscales.

Dispositional Sympathy (Parent, Child, and Teacher Report). During the child interview, children were administered the six-item Child Report of Sympathy Scale (Spinrad et al., 1999), which assesses children's perception of their own tendencies to feel sympathy for others. Parents and teachers also rated children's dispositional sympathy using the five-item Parents' Reports of Children's Sympathy/Empathy Scale (Eisenberg et al., 1998). Similar measures have been correlated with observed indexes of children's sympathy and prosocial responding in predominantly European-American school-aged children (Eisenberg & Miller, 1987). In this sample, reliabilities were .73, .75, and .84 for child, parent, and teacher report, respectively.

Prosocial Behavior (Observed Prize Donation). Children viewed a 60-second slideshow depicting 13 photographs of the daily lives of children living in impoverished rural areas in China. The images were not considered overtly distressing, but were

intended to elicit feelings of concern among school-aged children (e.g., a child carrying a heavy load of sticks on his back; a child with a burn on his hand; a child helping her parent cook in a small hut). A similar task has been used with school-aged children in previous studies (see Eisenberg, Spinrad, & Morris, 2013; Padilla-Walker & Carlo, 2014). At the end of the visit, children were given a choice of selecting two prizes and either: (a) keeping both prizes for themselves, or (b) donating one prize to Chinese children like those in the video. The instructions were as follows: ‘You did a great job today! You earned [total # of stickers] stickers, so that means you can pick two prizes. You can either keep both prizes for yourself, *or* you can just take one and we can give the other prize to Chinese children like the ones we just saw in the video. It’s up to you. You don’t have to tell me how many prizes you kept for yourself’. Children were then shown two boxes, one labeled ‘donation’ and one labeled ‘prize’. Children were instructed to first pick two prizes from the ‘prize’ box, and if they wanted to donate, to place it in the ‘donation’ box. The child interviewer then thanked the child for participating and exited the room to ensure privacy. Children’s behaviors during the task were captured by a visible video camera. Children’s prosocial behavior was coded into one of two categories: 1 = the child donated at least one prize, and 0 = the child did not donate a prize. The inter-rater reliability (based on 58 cases coded by both the main coder and the reliability coder) was $\kappa = .92$. Of the 212 children with non-missing data on the task, 150 children (70.8%) chose to donate at least one prize.

Child Social Desirability (Child Report). A subset of 14 items selected from the Social Desirability Questionnaire (Crandall, Crandall, & Katkovsky, 1965) was used to assess social desirability. The items were modified by Eisenberg and colleagues to make them age-appropriate for school-aged children. The child answered ‘Yes’ (1) or ‘No’ (0). A composite was obtained by averaging the raw or reserve-coded item scores such that a high score represents high social desirability ($\alpha = .71$ in the present sample).

Externalizing Problems (Parent and Teacher Report). Parents completed the externalizing problems subscale of the Child Behavior Checklist (CBCL; Achenbach & Rescorla, 2001), and teachers completed the Teacher Report Form (TRF; Achenbach & Rescorla, 2001). Both measures have been shown to have good criterion validity in previous research with Singaporean children (Ang, Rescorla, Achenbach, Ooi, & Woo, 2012). The Chinese versions of the CBCL and TRF externalizing and internalizing subscales have demonstrated good internal consistency (α s $> .80$) and test–retest reliability (r s $> .80$) in a native Chinese sample (Zhou et al., 2008). In the present sample, the alphas for parent and teacher report of externalizing problems were .99 and .87, respectively.

Social Competence (Parent and Teacher Report). Parents and teachers rated children’s social competence using a four-item subscale from an adapted version of Harter’s Perceived Social Competence Scale for Children (Harter, 1979). This scale assesses children’s socially appropriate behaviors. In a sample of native Chinese children (Zhou, Main, & Wang, 2010), the Chinese language version of this measure demonstrated satisfactory alpha reliabilities (α s $\geq .63$), and parent- and teacher-rated social competence were positively associated with children’s academic

achievement. Reliability for the current sample was .71 and .83 for parents' and teachers' reports, respectively.

Results

The sample descriptive statistics of study variables (i.e., measures of prosocial tendencies, psychosocial adjustment, and demographic and sociocultural variables) are presented in Table 1. We screened the continuous variables for normality. All the continuous study variables were normally distributed, with the exception of teacher-rated child externalizing problems, which was slightly positively skewed (meaning that there was a high concentration of cases with low scores on this measure). Due to the presence of a nonnormally distributed variable, we used robust estimation in structural equation modeling analyses.

Correlation Analyses

The full correlation matrix of all study variables are reported in Table 2. Due to the large number of correlations ($n = 136$) tested, we used the Benjamini-Hochberg false discovery rate correction to control for alpha error, which is a more powerful approach to multiple testing than the commonly used Bonferroni correction (Benjamini & Hochberg, 1995). Here we summarize statistically significant correlations that are most relevant to our study hypotheses. First, measures of children's prosocial tendencies were unrelated with each other. Second, significant correlations between prosocial tendencies and psychosocial adjustment were mostly found within reporters (e.g., parents' and teachers' reports of children's sympathy were correlated with their own reports of externalizing problems and/or social competence). Children's observed prize donation was unrelated to adjustment. Third, a few associations were found between demographic and sociocultural factors and children's prosocial tendencies. Specifically, children's American orientation was positively correlated with parents' reports of children's dispositional sympathy. Paternal education was positively correlated with parents' reports of child sympathy. Boys scored lower than girls on parent-reported sympathy, and older children were more likely to donate their prizes than younger children.

Structural Equation Modeling

Two structural equation models were specified to test hypothesized relations between (a) demographic and sociocultural factors and children's prosocial tendencies, and (b) prosocial tendencies and psychosocial adjustment. According to correlational analyses (Table 2), measures of prosocial tendencies were mostly unrelated between informants (parent, teacher, and child) and showed different patterns of relations to demographic and sociocultural and/or adjustment variables. Thus, separate models were tested: (a) one model using parent- and teacher-rated sympathy (Figure 1); and (b) a model using child-rated sympathy and their observed prize donation (Figure 2). In these models, children's cultural orientations and socio-demographic variables (SES, child age, sex, social desirability, and only child status) were hypothesized to relate to children's prosocial tendencies, which in turn are related to parent- and teacher-rated psychological adjustment (externalizing problems and social competence). The direct effects of cultural and socio-demographic variables on child adjustment were also controlled in the model.

Table 1. Descriptive Statistics of Study Variables

	<i>N</i>	Min	Max	Mean	SD	Skew	Kurtosis
Dispositional sympathy—P	227	1.60	4.00	3.19	.52	−.08	−.71
Dispositional sympathy—T	193	1.00	4.00	2.94	.70	−.45	−.60
Dispositional sympathy—C	239	1.00	3.00	2.20	.44	−.24	−.43
Prize donation: observed (0 = did not donate, 1 = donated)	212	.00	1.00	.29	.46	.92	−1.17
Externalizing problems—P	237	.00	24.0	4.37	4.88	1.63	2.72
Externalizing problems—T	216	.00	19.0	1.90	3.64	2.57	6.72
Social competence—P	233	1.00	4.00	3.35	.50	−.91	1.44
Social competence—T	207	1.00	4.00	3.48	.60	−1.55	2.43
Child Chinese orientation: P	235	−1.13	1.76	−.001	.52	.26	.01
Child American orientation: P	233	−1.39	1.53	.00	.53	.31	−.08
Only child status (0 = with sibling, 1 = only child)	239	.00	1.00	.19	.39	1.61	.58
Child social desirability—C	239	.07	1.00	.70	.20	−.74	.18
Child gender (0 = girls, 1 = boys)	239	.00	1.00	.52	.50	−.77	−2.01
Child age (years)	238	7.49	10.96	9.20	.73	.06	−.70
Mother's level of education ^a	230	2.00	20.00	13.02	2.94	−.58	1.53
Father's level of education ^a	231	.00	20.00	12.89	3.44	−.36	.89
Family per capita income	227	1000	33 750	11 910	8359	.93	−.05

Note: P = parent report, T = teacher report, C = child report.

^aMother's and father's levels of education are coded as: 0 = no school, 11 = some high school, 12 = graduated high school, 13 = some college, 14 = vocational school, 15 = associates degree, 16 = bachelors degree, 17 = some graduate school, 18 = masters degree, 19 = some doctorate work, and 20 = doctorate or similar.

Table 2. Correlations among Study Variables

	Dis-P	Dis-T	Dis-C	Prize	Ext-P	Ext-T	SC-T	SC-P	Chi-P	Am-P	Only	SD-C	Sex	Age	M Edu	F Edu
Prosocial variables																
Dis-P	—															
Dis-T	.07	—														
Dis-C	.16*	.13	—													
Prize	.11	-.11	.04	—												
Adjustment variables																
Ext-P	-.23** ^a	-.11	-.06	-.02	—											
Ext-T	-.12	-.33** ^a	-.04	-.07	.32** ^a	—										
SC-T	.12	.34** ^a	.17*	.08	-.36** ^a	-.78** ^a	—									
SC-P	.43** ^a	.12	.15*	.05	-.37** ^a	-.26** ^a	.25** ^a	—								
Demographic and sociocultural variables																
Chi-P	.09	.01	-.02	-.05	.03	-.06	.002	.06	—							
Am-P	.23** ^a	-.07	.17*	.14*	.001	.08	.01	.22**	.18** ^a	—						
Only	-.00	.10	.04	-.05	.01	.10	-.09	-.02	.18** ^a	-.04	—					
SD-C	.06	.11	-.03	-.01	-.07	-.22** ^a	.20*	.07	.07	-.07	-.06	—				
Sex	-.20** ^a	-.17*	-.13*	.01	.11	.31** ^a	-.39** ^a	-.15*	-.09	-.14*	.001	-.04	—			
Age	-.02	-.02	.00	.30** ^a	-.05	-.05	.07	.02	.02	-.01	-.01	-.04	-.09	—		
M Edu	.15*	-.09	.08	.18*	.02	.08	-.05	.06	-.06	.36** ^a	-.11	-.17*	-.07	-.11	—	
F Edu	.18** ^a	-.09	.06	.02	-.08	.17*	-.17*	.12	-.06	.28** ^a	-.08	-.10	.01	-.10	.52** ^a	—
Income	.09	-.08	.12	.12	-.03	.17*	-.09	.10	-.06	.38** ^a	.01	-.10	-.08	-.13*	.50** ^a	.52** ^a

Notes: Dis-P = parent-reported dispositional sympathy, Dis-T = teacher-reported dispositional sympathy, Dis-C = child-reported dispositional sympathy, Prize = observed prize donation (0 = did not donate, 1 = donated), Ext-P = parent-reported externalizing problems, Ext-T = teacher-reported externalizing problems, SC-T = teacher-reported social competence, SC-P = parent-reported social competence, Chi-P = parent-reported child Chinese orientation, Am-P = parent-reported child American orientation, Only = only child status (0 = with sibling, 1 = only child), SD-C = child report of social desirability, Sex = child sex (0 = girls, 1 = boys), M Edu = mother's level of education, F Edu = father's level of education, Income = per capita income. * $p < .05$, ** $p < .01$, *** $p < .001$.

^a correlation coefficients that are significant after applying the Benjamini and Hochberg's (1995) false discovery rate correction.

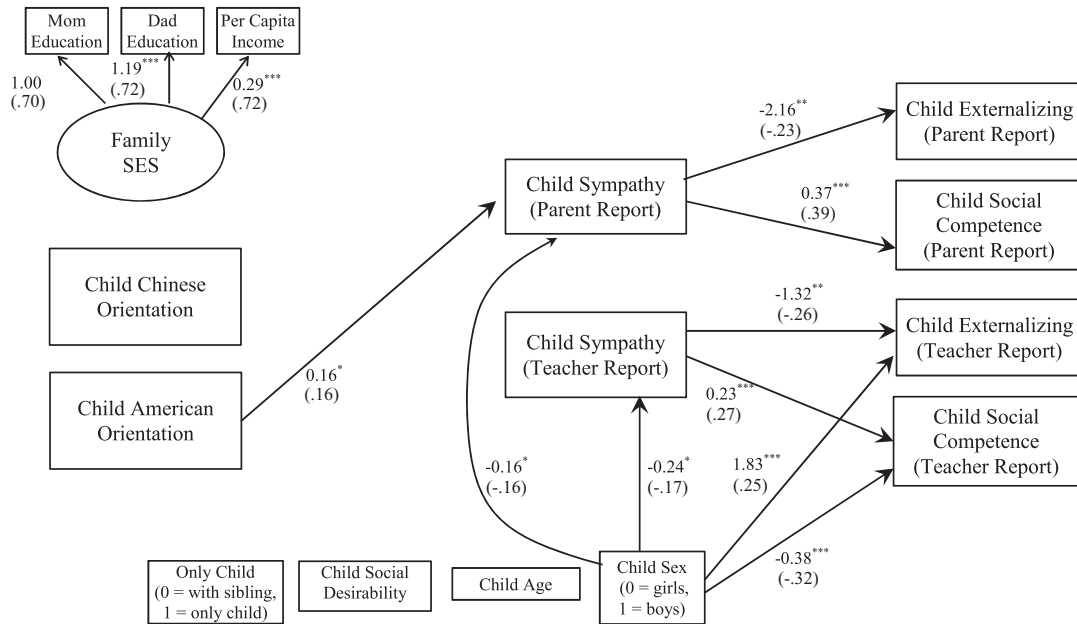


Figure 1. The Structural Equation Model Testing the Relations among Demographic and Sociocultural Factors, Teacher- and Parent-reported Child Sympathy, and Children’s Psychological Adjustment.

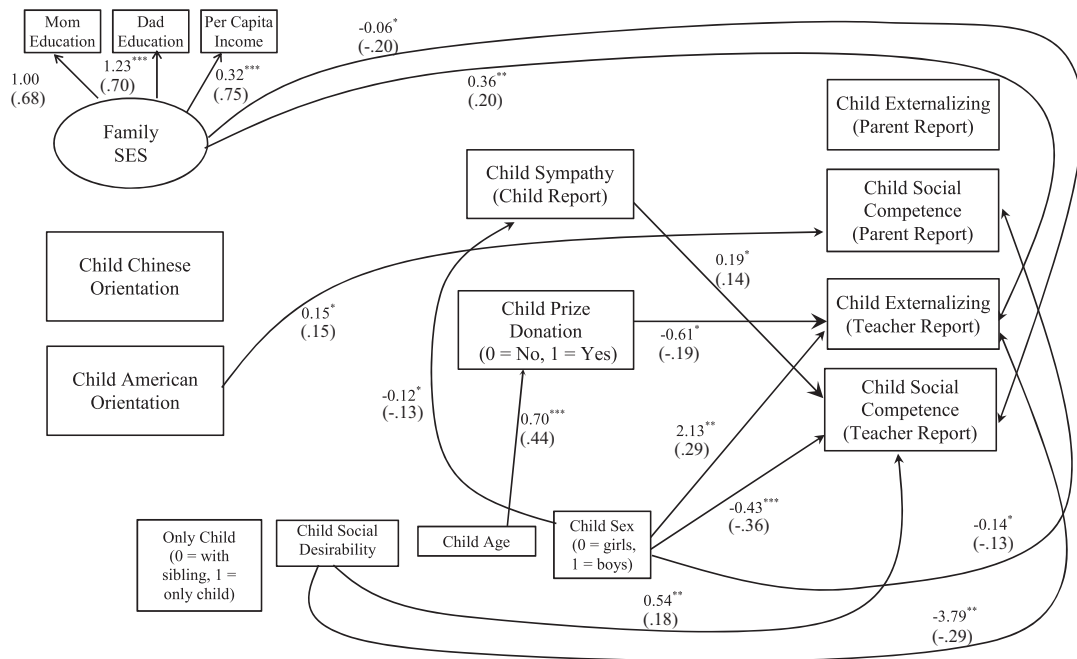


Figure 2. The Structural Equation Model Testing the Relations among Demographic and Sociocultural Factors, Child-Reported Sympathy and Observed Prize Donation, and Children’s Psychological Adjustment.

The Model Using Parent- and Teacher-reported Sympathy. The models were tested using Mplus 6.12 (Muthén & Muthén, 1998–2011) using full information maximum likelihood to handle missing data and the maximum likelihood robust estimator to adjust for standard error estimates due to nonnormality (Muthén &

Muthén, 1998–2011). Based on the criteria suggested by Hu and Bentler (1999), the model using parents' and teachers' reports of sympathy fit the data well, χ^2 ($df = 39$, $N = 238$) = 41.09, $p = .38$, CFI = 1.00, RMSEA = .015, SRMR = .038. Children's American orientation was uniquely and positively associated with parent-rated child sympathy, which in turn was positively associated parent-reported social competence and negatively associated with parents' reports of externalizing problems. Neither family SES nor children's cultural orientations uniquely predicted teacher-rated sympathy, which was significantly associated with teachers' reports of child adjustment. Among the covariates included in the model, child sex had unique effects on parent- and teacher-rated sympathy and teacher-rated psychological adjustment.

The Model Using Child-reported Sympathy and Prize Donation. Because children's observed prize donation (prosocial behavior) was a dichotomous variable, the model for child's measure of prosocial tendencies (Figure 2) was estimated in Mplus using the weighted-least-square estimator. The model fit the data well, χ^2 ($df = 39$, $N = 238$) = 52.25, $p = .07$, CFI = .98, RMSEA = .038. Neither family SES nor children's cultural orientations uniquely predicted child-reported sympathy or prize donation. Child-reported sympathy was positively associated with teacher-rated social competence, and children's tendency to donate their prizes was negatively associated with teacher-rated externalizing problems. However, demographic and sociocultural factors had a few direct paths on psychological adjustment. The latent factor of family SES was positively related to teacher-rated externalizing problems and negatively related to teacher-rated social competence. Children's American orientation was positively related to parent-rated social competence. With regard to the effects of covariates, similar to the previous model, child sex had significant effects on child-reported sympathy and teacher- and parent-reported adjustment. Moreover, children's age was positively related to the tendency to donate their prizes. Children's social desirability was positively related to teacher-rated social competence and negatively related to teacher-rated externalizing problems.

Discussion

To our knowledge, this is the first study examining prosocial development, its role in psychological adjustment, and its links to cultural and socio-demographic characteristics in Chinese-American school-aged children in immigrant families. We found that different measures of prosocial tendencies related differently to children's psychological adjustment: parent- and teacher-rated sympathy were associated with higher social competence and lower externalizing problems within (but not across) reporter, and child-rated sympathy was associated with higher teacher-rated social competence. Moreover, observed prize donation was associated with lower teacher-rated externalizing problems. Different prosocial measures also showed somewhat different associations to cultural and socio-demographic variables: girls had higher ratings of sympathy than boys, older children were more likely to donate a prize in the child reporter model, and child American orientation was associated with higher parent-rated sympathy. We discuss our interpretation of these findings below.

Relations among Measures of Children's Prosocial Tendencies

A strength of this study is the collection of multiple measures of prosocial tendencies from different reporters. Interestingly, we found no significant cross-reporter correlations among parent-, teacher-, and child-rated variables. This may be partially due to the fact that different reporters observe children's sympathy toward others in different contexts (parents primarily observe children in the home, teachers primarily observe children in school, and children report on their own sympathetic tendencies across contexts). Thus, the lack of associations across reporters suggests that Chinese-American children might display sympathy differently in home vs. school contexts. Moreover, because the majority of parents in the sample were first generation Chinese immigrants (whereas teachers were trained in the American school system), cultural differences in the perception or evaluation of children's sympathy and social competence might have also contributed to the low associations among reporters. Traditional Chinese culture tends to endorse restrained and 'fitting in' behaviors in young children, and first generation Chinese immigrant parents may socialize their children to behave with restraint and not call attention to themselves too much at school because this could disturb group harmony (Chen & Tse, 2010). By contrast, autonomy, social assertiveness, and individual choice or decision-making is often valued in American society, and American teachers and peers may perceive and evaluate Chinese immigrant children's 'fitting in' behaviors as nonassertive or passive, and not socially engaged. Thus, there are likely cultural differences between parents' and teachers' perceptions and evaluations of Chinese-American children's social behaviors.

Interestingly, there were no associations between dispositional sympathy and children's tendency to donate a prize to children from impoverished families. This result is generally consistent with the hypothesis that there is likely to be a stronger link between sympathy and prosocial behavior when both constructs are measured in the same context (Holmgren et al., 1998; van IJzendoorn, Bakermans-Kranenburg, Pannebakker, & Out, 2010). In this study, immediately after the slideshow, children were asked open-ended questions to describe their feelings and thoughts about the slideshow. Children generally reported emotional reactions, such as feeling sorry for the children in the slideshow, feeling sad, and being sorry that the children didn't have clothes or toys. This suggests that many of the children who donated prizes did so for empathy-motivated reasons. Conversely, it is possible that children who chose to donate their prize perceived the children depicted in the slideshow as in-group members, while those who did not donate perceived the children as out-group members. This would be consistent with research demonstrating that individuals more readily empathize with members of their in-group than those in their out-group (e.g., Drwecki, Moore, Ward, & Prkachin, 2011). We are currently conducting a systematic analysis of these qualitative responses to gain a more nuanced understanding of the motivations behind the children's prosocial behavior in this context.

Relations between Prosocial Tendencies and Children's Psychological Adjustment

Consistent with the lack of cross-reporter associations on measures of prosocial tendencies, we found that relations between children's prosocial tendencies and their psychological adjustment also differed across reporters. Parent- and teacher-rated

child sympathy were associated with lower externalizing problems and higher social competence within reporter. The pattern of associations between prosocial tendencies and adjustment is generally consistent with the hypothesis that prosocial tendencies can promote positive interpersonal relations and protect children from antisocial behaviors (Eisenberg et al., 2006).

Again, the lack of associations across reporters is likely due to the fact that parents and teachers observe children in different contexts. Parents have fewer opportunities to observe children's sympathy-related responses to other children than teachers (who interact with children in the school/peer context) or children themselves. Thus, teachers and children might be better reporters of children's prosocial tendencies toward peers than parents, but parents may be better situated to evaluate children's prosocial tendencies toward siblings or other family members. Furthermore, sympathy measures used in the present study might not fully capture Chinese-American children's prosocial tendencies in family life. Previous research has shown that immigrant families (including Chinese-American families) place stronger emphasis on family obligation (i.e., responsibilities involving contributing to family's well-being) compared with European-American families (Fuligni et al., 1999) and children may be more likely to help close others than strangers (see Padilla-Walker & Carlo, 2014). Given that children's prosocial responding toward family members is highly valued and encouraged in Chinese-American families (Stewart & McBride-Chang, 2000), future research on Chinese-American children's prosocial development would benefit from including measures that assess children's prosocial tendencies toward different targets.

Links of Cultural and Socio-demographic Factors to Prosocial Tendencies

The only statistically significant association between cultural orientations and prosocial tendencies was the positive association between children's American orientation and parent-reported child sympathy (Figure 1). This result supports the perspective that acculturation confers general benefits for immigrant children's mental health and social competence, especially during the elementary school period (Chen et al., 2014; Chen & Tse, 2010). It is also possible that children with higher American orientation are more likely to openly express their emotions (including sympathy). Indeed, studies of immigrant parents have shown that parents' Western orientation is associated with greater emotion expressivity and more open discussion of emotions with children (Chen, et al., 2014; Tao, Zhou, Lau, & Liu, 2013).

Family SES was mostly unrelated to teacher- or child-reported prosocial tendencies. However, there was a positive correlation between paternal (but not maternal) education and parent-reported child sympathy, which is somewhat consistent with the perspective that children from more well-educated families may respond more prosocially in social situations because of their more advanced moral reasoning skills (Eisenberg, Zhou, & Koller, 2001). However, the fact that paternal education was unrelated to other measures of prosocial tendencies suggests that paternal education might have a greater influence on parents' perceptions of than actual prosocial tendencies of children. Nonetheless, the findings on SES and children's prosocial tendencies need to be replicated in other immigrant samples.

The SEM analyses suggested that girls scored higher than boys on all three measures of sympathy. This is consistent with previous research demonstrating that girls report higher empathy-related responding and adults often perceive girls

as more empathic than boys (Eisenberg & Lennon, 1983). Importantly, the sex differences in sympathy found in this study were consistent across reporters and significant after controlling for children's social desirability, suggesting that sex differences in sympathy are unlikely to be fully due to self-report bias. However, there were no sex differences in children's tendency to donate a prize. This is consistent with findings reported in reviews and meta-analyses of studies on sex differences in children's empathy and prosocial behavior: large sex differences tend to be found with questionnaire measures but weak or no sex differences tend to be found with observed or physiological measures (Eisenberg & Lennon, 1983; Eisenberg et al., 1998). Because prosocial behavior toward strangers is influenced by multiple psychological processes, including sympathy-related responses, perspective taking, and motivation or goals, its link to sex is likely rather complex.

Finally, older children were more likely to donate prizes than younger children, which is consistent with research demonstrating that children's empathic tendencies increase with age (Schwenck et al., 2014). However, there were no associations between child age and reported sympathy. It is possible that the age range in the present study was not large enough to capture such changes.

Limitations and Future Directions

The study has several limitations. First, as discussed above, our measures of prosocial tendencies may not fully capture Chinese-American children's prosocial tendencies toward different targets and across different contexts. Given the Chinese cultural emphasis on prosocial behaviors toward family members or close others (Fulgini et al., 1999), it is important to study Chinese-American children's prosocial tendencies towards family members, familiar peers, and others across home, school, and community settings in future research. Moreover, although we used an observational measure of prosocial behavior, it was collected in the laboratory and was measured as a dichotomous variable (the child did or did not choose to donate). Future research could collect observational measures of children's prosocial tendencies in contexts with higher ecological validity (e.g., home, classroom, or playground) and that afford more variability in children's prosocial responding. Second, although the present study is part of a larger longitudinal investigation of children's adjustment in Chinese-American immigrant families, empathy-related responding was only assessed at one time point. Therefore, the cross-sectional design precludes the possibility of examining how associations between demographic and sociocultural characteristics, prosocial tendencies, and adjustment change over time. Third, although we controlled for alpha error in correlation analyses, the magnitudes of correlation coefficients in the sample are small to modest, and thus, should be interpreted with caution. Fourth, the fact that the children's reactions to the slideshow were obtained prior to the prize donation task could have primed some children to donate, possibly inflating the amount of prosocial behavior of the children in the sample.

Conclusion

Despite these limitations, this study showed that even though there is some cross-cultural universality in the overall adjustment implication of prosocial tendencies, there is much complexity in the manifestation of prosocial tendencies across

contexts and targets among children of immigrant families. Although the model minority myth often applied to Asian-Americans, the present study adds to a growing body of literature that supports considerable heterogeneity in social and psychological adjustment in this population. Our focus on prosocial tendencies highlights the importance of examining positive aspects of adjustment in children from Chinese immigrant families, a cultural group that places a great deal of value on relating positively to others. This study represents a first step at understanding the complex relations between prosocial development and child outcomes across multiple contexts in an understudied population. Interventions aimed at promoting Chinese immigrant children's prosocial development across contexts may aid with promoting children's social competence and lessening externalizing problems in this population. Future research on prosocial development in Asian or Asian immigrant children needs to move beyond existing measures from studies used in primarily European-American samples and develop new tools to characterize culturally-salient prosocial tendencies in this population.

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