A Longitudinal Study of Family Obligation and Depressive Symptoms Among Chinese American Adolescents

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The purpose of this 2-year, 3-wave longitudinal study of Chinese American adolescents was to examine how family obligation behaviors and attitudes change over time; how gender, nativity, and birth order predict these trajectories; and whether family obligation relates to depressive symptoms. Findings suggest that family obligation *behaviors* decreased over the 2-year period but that family obligation *attitudes* were stable. Moreover, foreign-born adolescents reported higher levels of family obligation behavior than U.S.-born adolescents, and firstborn adolescents reported higher family obligation attitudes than laterborn adolescents. There were no gender differences in family obligation behaviors or attitudes. The findings also suggest that initial higher levels of family obligation were associated with subsequently fewer depressive symptoms. Finally, changes in family obligation behaviors related to changes in depressive symptoms over time such that increasing family obligation behaviors related to decreasing depressive symptoms. The results highlight the importance of understanding the role of family obligation to Chinese American adolescents' mental health.

Keywords: family obligation, depressive symptoms, chinese American adolescents

Personal values have been defined as desirable goals that serve as a guiding principle in a person's life (Schwartz, 1994). Thus, values motivate individuals to act and think in particular ways. Cultural values, then, can be thought of as goals specific to a culture that serve as guiding principles for people of that culture. Cultural values can be expressed through behaviors that people engage in and the attitudes that people hold. The multifaceted changes of the adolescent transition present an especially appealing opportunity to study emerging value systems (Feldman, Mont-Reynaud, & Rosenthal, 1992), as adolescents are in the process of exploring what values and beliefs are important to them in defining who they are (Erikson, 1968).

Family obligation, a set of behaviors and attitudes involving the support, assistance, and respect that children provide to their family, is a central cultural value of many Asian cultures, such as the Chinese (Bond & Hwang, 1986; Fuligni, 1998; Fuligni, Tseng, & Lam, 1999; Fuligni & Zhang, 2004; Ho, 1994; Uba, 1994). Family obligation has its roots in the notion of *filial piety*—a collectivistic orientation that emphasizes parental authority, hierarchial rela-tionships, and maintaining connectedness to the family (Bond & Hwang, 1986; Ho, 1994). The importance of family obligation is conveyed to children by parents and other socialization agents on a regular and consistent basis and has been linked to the adoption of these values among Chinese American youth (Shon & Ja, 1982; Uba, 1994). As such, to understand the development of adolescents from Chinese American families, one must take into account the central cultural value of family obligation (Fuligni, 1998).

In the present study, we focus on how family obligation is expressed in adolescent behaviors (*how much* do they support and assist the family over time) as well as attitudes (*how important* is it for adolescents to support and assist the family). Because behaviors and attitudes are not always highly correlated (Bardi & Schwartz, 2003), and the antecedents and outcomes of each may differ, it is important to consider both separately.

Previous studies have established the importance of family obligation to adolescent development (Fuligni et al., 1999; Fuligni, Yip, & Tseng, 2002; Fuligni & Zhang, 2004; Phinney & Ong, 2002; Phinney, Ong, & Madden, 2000). For instance, greater family obligation has been related to closer family relationships and greater academic achievement (Fuligni et al., 1999; Fuligni & Zhang, 2004). However, we know little of how adolescent family obligation behaviors and attitudes change over time. To our knowledge, our study is the first to examine the developmental trajectory of family obligation during the high school years. We might hypothesize that, for adolescents in the United States, family obligation would weaken over time, as during adolescence, greater autonomy and independence is empha-sized (Collins & Steinberg, 2006), less time is spent with the

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family, and greater time is spent with peers (Brown, 1990; Larson, Moneta, Richards, & Wilson, 2002). Thus, adolescents who are striving for more autonomy and spending more time with peers, may also become less focused on the family as they get older. On the other hand, it is also plausible that family obligation would become stronger over time, especially for some immigrant groups, as adolescents become more capable of contributing to the family (Fuligni, 1998; Fuligni & Zhang, 2004), and pressure from parents to contribute may also increase as their adolescents demonstrate greater competence and maturity.

Because family obligation is an especially salient cultural value for Chinese American families in particular, we hypothesized that adolescent family obligation would become stronger over the high school years. We based this prediction also on the specific cultural context from which we sampled. In the community from which we sampled, there is a very strong and visible Chinese population that may promote similar cultural values (e.g., supporting, assisting, and respecting the family) consistent with traditional Chinese family values. These community and familial networks of support help adolescents maintain connection to their traditional culture (Phinney, 2003; Zhou & Bankston, 1998). In this community, then, upholding the tradition of family obligation may be reinforced for adolescents by having access to many other Chinese families who may have similar cultural values. Thus, the first aim of our study is to examine how family obligation changes over time for Chinese American adolescents and the degree to which the vary in their report of obligation.

In addition to describing family obligation trajectories, we examine why some adolescents have a stronger sense of obligation to family than others. The literature points to several important variables that might explain individual differences in family obligation; namely, adolescent gender, nativity, and birth order. In traditional Chinese culture, gender differences in family obligation change according to the developmental period. During childhood and adolescence, there is a greater emphasis on girls to assist and take care of family members (Ho, 1994). During adulthood, however, when a daughter marries, a traditional enactment of the cultural value would describe her as becoming a member of her husband's family. Subsequently, there is a shift toward a greater emphasis on sons to contribute to the well-being of the family of origin during this latter developmental period. Because we focus on adolescents, we hypothesized that girls would report greater family obligation than boys.

In addition to gender, an adolescent's nativity may predict his or her level of family obligation. Foreign-born adolescents have spent more time immersed in Chinese culture; therefore, we might expect foreign-born (first-generation) adolescents to endorse greater family obligation than their U.S.-born (second- or later generation) counterparts. U.S.-born adolescents, on the other hand, have been raised in a culture where family obligation is not as heavily emphasized. Indeed, studies have shown that parents in China place greater emphasis on family obligation than parents from the United States. (Lee & Zhan, 1998). In our study, then, we expected foreign-born adolescents to report higher family obligation than U.S.-born adolescents.

Finally, scholars have noted the importance of birth order in the distribution of responsibility to the family. In many Asian cultures, firstborns are generally encouraged to shoulder the main responsibility of taking care of the family (Uba, 1994). Thus, we hypothesized that firstborn adolescents will report greater family obligation than laterborn adolescents.

In addition to asking what factors predict individual differences in family obligation, we examined whether a stronger sense of family obligation would relate to adolescent well-being. Indeed, studies of adolescents have found that those with a greater sense of family obligation reported closer family relationships, greater academic achievement (Fuligni et al., 1999; Fuligni & Zhang, 2004), and lower levels of misconduct (Juang & Nguyen, in press). A study of European American and Vietnamese American adolescents found that adolescents who were similar to their parents in family obligation beliefs also reported greater life satisfaction (Phinney & Ong, 2002). On the basis of previous literature, then, we hypothesized that a stronger sense of family obligation will be related to greater well-being in terms of fewer depressive symptoms. We chose to focus on depressive symptoms, as depression is one of the most important mental health concerns for Asian American youth (National Center for Health Statistics, 1994; Schoen et al., 1997) and Chinese American youth, in particular (Chiu et al., 1992; Greenberger & Chen, 1996; Lorenzo, Frost, & Reinherz, 2000; Portes & Rumbaut, 2001; Ying, 1995). In summary, there is convincing evidence that family obligation is linked to well-being for adolescents of diverse immigrant backgrounds. However, one important limitation of previous studies is the use of cross-sectional design. To our knowledge, our study is the first to use a longitudinal approach to explore (a) the stability and change of family obligation and (b) whether family obligation leads to subsequent depressive symptoms.

Summary of Hypotheses

Hypothesis 1: Adolescent family obligation will become stronger over time.

Hypothesis 2: Gender, nativity, and birth order will relate to family obligation so that female (vs. male), foreign-born (vs. U.S.-born), and firstborn (vs. laterborn) adolescents will report a stronger sense of family obligation.

Hypothesis 3: Adolescents with a stronger sense of family obligation will report fewer depressive symptoms over time.

Method

Setting

We recruited adolescents from two high schools in San Francisco, California, that were ethnically diverse. In each

school, 53% of adolescents had Chinese backgrounds. The representation of the other ethnic groups were similar between the two schools. One school reported 17.8% White, 5.6% Latino, 4.9% Filipino, 2.3% African American, 1.9% Korean, 1.4% Japanese, 0.3% Asian Indian, and 11.9% other non-White students. The other school reported 14.4% White, 6.1% Latino, 5.1% African American, 4.5% Filipino, 1.7% Japanese, 1.6% Korean, 0.5% Asian Indian, and 13.0% other non-White students. Overall, the school contexts reflected a diversity of ethnic groups, as did the broader community, but they included an overrepresentation of Asians and, in particular, students of Chinese background. We targeted these two schools precisely because they had a higher proportion of students of Chinese background; thus, these two schools do not represent the ethnic distribution of the broader San Francisco community.

Procedure

Adolescents were recruited from two high schools when Linda P. Juang made announcements to school assemblies and after-school clubs geared toward students of Chinese background (e.g., Chinese Club, Chinese Cultural Arts Club) and posted fliers. The data for this study were part of a larger study titled "Chopsticks and Forks: Understanding the Experiences of Chinese American Adolescents and Their Families." Juang told the students that we were interested in finding out about their experiences as Chinese and Chinese American adolescents growing up in the Bay Area. Adolescents who obtained a signed guardian/parent consent form and signed an assent form were invited to participate. The survey was completed during classroom hours or immediately after school. Parents were not present at the time. Adolescents were told that their responses were confidential and that responses would not be shared with either the parent or other adolescents. Adolescents were compensated $15 each for participating in the first two waves of data collection and $20 each for the third wave.

Surveys were offered in English and Chinese. The English version was translated into Chinese by three bilingual adults who were fluent in both English and Chinese. All of the adults were born outside of the United States (two in Taiwan and one in Hong Kong) and had subsequently immigrated to the United States in adolescence and young adulthood. The translators chosen were of differing generations (one translator was over 60 years old, and the other two were between 25 and 30 years old) and were familiar with both Mandarin and Cantonese to account for variations in the Chinese language due to cohort and geographical differences. A majority of adolescents (86%) completed the surveys in English, and the rest completed it in Chinese. All study procedures and measures were approved by Juang's university institutional review board.

Participants

The sample included 316 9th- and 10th-grade Chinese American adolescents who identified their father or mother to be of Chinese descent. At Time 1, the adolescents' mean age was 14.7 years ($SD = 0.71$; range = 13–17 years), and 54% were female. At Time 2 (1 year later), the mean age was 15.8 years ($SD = 0.73$). At Time 3 (2 years after Time 1), the mean age was 16.8 years ($SD = 0.71$). Twenty-nine percent of adolescents were first generation (foreign born), born in China ($n = 54$), Hong Kong ($n = 19$), Taiwan ($n = 3$), Macau ($n = 4$), Vietnam ($n = 2$), Thailand ($n = 1$), Germany ($n = 1$), South America ($n = 1$), or Myanmar (formerly known as Burma; $n = 1$). One adolescent did not report his or her nativity, or where he or she was born. On average, at Time 1 foreign-born adolescents had lived in the United States for 5.67 years ($SD = 4.08$), and U.S.-born adolescents for 14.6 years ($SD = .84$). Most of the adolescents grew up with both parents (91%), and most had at least one sibling (89%).

Concerning maternal education, 4% completed elementary school or less, 11% attended middle school, 15% attended some high school, 31% graduated from high school, 19% attended some college or university, and 20% graduated from college/university or more. Concerning paternal education, 7% completed elementary school or less, 15% attended middle school, 16% attended some high school, 28% graduated from high school, 16% attended some college or university, and 19% graduated from college/university or more. Maternal and paternal education were correlated at $r = .64$ ($p < .001$). A new variable was created (parent education) that represented the highest level of education attained by either parent. This combined parent education variable was used in all analyses.

Of the initial 316 adolescents in the first assessment, 234 participants (74%) were retained in the second wave, and 218 participants (69% of the original 316) completed the survey in the third wave.

Measures

Family obligation (Fuligni et al., 1999). This 24-item scale assessed the adolescent's attitudes and expectations concerning their obligation to assist, respect, and support the family. This scale has been used with Chinese American adolescent populations and has demonstrated good reliability and validity (Fuligni et al., 1999). It consisted of three subscales: (a) 11 items on current assistance to the family, (b) 7 items on respect for the family, and (c) 6 items on planned future support to the family as adults. In our study, we wanted to assess not only attitudes but also behaviors. Thus, we slightly modified the stem for current assistance, which resulted in two subscales, one reflecting family obligation behaviors and one reflecting family obligation attitudes. For the behavioral items (subscale 1), youth were asked to rate on a scale ranging from 1 (*almost never*) to 5 (*almost always*) how often they engaged in various behaviors, such as "run errands that the family needs done." Cronbach's alphas for family obligation behavior were 0.82, 0.86, and 0.87 at Times 1, 2, and 3, respectively. Mean scores were calculated so that higher scores reflected greater engagement in family obligation behaviors. For the attitude items (subscales 2 and 3), youth were asked to rate on a scale ranging from 1 (*not important at all*) to 5 (*very*

important) how important certain values were to them. Such values included, "Treat your parents with great respect" and "Have your parents live with you when they are older." Mean scores were calculated for the two attitude subscales combined so that a higher score indicated greater importance attached to family obligation values. For family obligation attitudes, Cronbach's alphas were 0.85, 0.84, and 0.85 at Times 1, 2, and 3, respectively. The bivariate correlations between family obligation behaviors and attitudes were .55, .52, and .48 (all $ps < .001$) at Times 1, 2, and 3, respectively.

Center for Epidemiological Studies—Depression (CES–D; Radloff, 1977). This 20-item scale measured depressive symptoms. On a scale ranging from 1 (*rarely*) to (4) (*most of the time*), adolescents indicated how often they felt or behaved during the previous week. They responded to items such as "I was bothered by things that usually don't bother me." Positively worded items were reverse-coded and mean scores calculated so that a higher score indicated higher levels of depressive symptoms. This scale demonstrated adequate reliability with Chinese American populations (Ying, 1988). In the present study, Cronbach's alphas were 0.85, 0.86, and 0.87 at Times 1, 2, and 3, respectively.

Results

Preliminary Analyses

We examined whether the main study variables (i.e., family obligation behaviors, family obligation attitudes, and depressive symptoms) varied by demographic variables (i.e., gender, nativity, birth order, and number of siblings). At Time 1, the results showed that gender and nativity did not relate to family obligation behavior, but that birth order, $t(313) = 3.13$, $p = .002$, and number of siblings ($r = .11$, $p = .06$) did, so that firstborn adolescents ($M = 3.56$, $SD = 0.72$) and those with more siblings engaged in more family obligation behaviors than laterborns ($M = 3.30$, $SD = 0.73$) and those with fewer siblings. Results also showed that gender, birth order, and number of siblings did not relate to family obligation attitudes but that nativity did, $t(314) = 2.36$, $p = .014$, so that foreign-born adolescents ($M = 3.66$, $SD = 0.65$) reported higher family obligation attitudes than U.S.-born adolescents ($M = 3.47$, $SD = 0.64$). The relations between the demographic variables and family obligation were similar at Times 1 and 2. Concerning depressive symptoms, there were no gender differences at any of the three time points. Nativity, birth order, and number of siblings did not relate to depressive symptoms at any of the three times. Bivariate correlations showed that, in general, family obligation behaviors and attitudes correlated negatively with depressive symptoms (i.e., greater family obligation behavior and attitudes related to fewer depressive symptoms). See Table 1.

Attrition

For the remaining analyses, we included those cases with data from all three time points. To assess the degree to

Table 1
Bivariate Correlations Between Family Obligation Behaviors and Attitudes and Depressive Symptoms at Three Time Points

Family obligation	Depressive symptoms at:		
	Time 1	Time 2	Time 3
Behavior at Time 1	−.10	−.24***	−.12
Attitudes at Time 1	−.10	−.20**	−.17**
Behavior at Time 2	−.09	−.28***	−.18**
Attitudes at Time 2	−.10	−.23***	−.11
Behavior at Time 3	−.06	−.21**	−.21**
Attitudes at Time 3	−.05	−.20**	−.13*

* $p < .05$. ** $p < .01$. *** $p < .001$.

which attrition resulted in bias in our sample, we compared adolescents with complete data (from three time points, $n = 211$, 67%) to those with incomplete data (from one or two time points, $n = 105$, 33%). The results showed that the two groups differed on age and gender; those with complete data were more likely to be slightly younger (with complete data, $M = 14.7$, $SD = 0.63$; with incomplete data, $M = 14.9$, $SD = 0.89$) and female (with complete data, females = 61%; with incomplete data, females = 52%). Thus, a limitation of our findings is the bias in our sample toward females and younger adolescents. The two groups, however, did not differ on nativity, birth order, number of siblings, and parent education. Furthermore, the two groups did not differ on study variables measured at Time 1: family obligation behaviors, family obligation attitudes, and depressive symptoms (see Table 2).

Plan of Analyses

We chose latent growth modeling (LGM) to test our hypotheses because this method allows for modeling of change over time and the ability to model two trajectories simultaneously, which is also referred to as *dual* or *parallel process models* (Muthén, 2002). In these models, the latent growth curve parameters (i.e., intercept and slope) are estimated for each trajectory. In addition, the relations between latent growth curve parameters for each trajectory are estimated in relation to one another. To determine model fit to the data, we relied on several fit indexes: chi-square, which should not be significant, the comparative fit index (CFI) and Tucker–Lewis fit index (TFI) which should be .90 or greater, and the root mean square error of approximation (RMSEA), which should be .08 or less (Kline, 1998).

Our plan of analyses follows the suggestions of Duncan, Duncan, and Strycker (2006). First, we estimated two unconditional (no covariates) latent growth curve models to describe the trajectory for adolescent family obligation. We did this for family obligation behaviors and attitudes separately. Second, we examined how adolescent gender, nativity, and birth order predicted family obligation behaviors and attitudes separately. We also included three control variables in these conditional models and in the remaining models described: adolescent age, parent education, and number of siblings. Third, we estimated dual process mod-

Table 2
Comparison of Adolescents With Complete Data (Three Time Points) Versus Those With Incomplete Data (One or Two Time Points)

Variable	Adolescents with complete data ($n = 211$, 67%)	Adolescents with incomplete data ($n = 105$, 33%)	t, χ^2, and p
Age	$M = 14.7$, $SD = .063$	$M = 14.9$, $SD = 0.89$	$t(314) = 2.23$, $p = .03$
No. of siblings	$M = 1.43$, $SD = 0.91$	$M = 1.61$, $SD = 1.29$	$t(312) = 1.47$, $p = .14$
Parent education[a]	$M = 4.29$, $SD = 1.38$	$M = 4.49$, $SD = 1.31$	$t(304) = 1.20$, $p = .23$
Gender	Female, 61%	Female, 52%	$\chi^2(1) = 5.22$, $p = .02$
Nativity	U.S. born = 72%	U.S. born = 68%	$\chi^2(1) = 0.66$, $p = .42$
Birth order	$M = 1.70$, $SD = 0.88$	$M = 1.83$, $SD = 0.91$	$t(312) = 1.19$, $p = .24$
Family obligation: Behaviors	$M = 3.45$, $SD = 0.76$	$M = 3.39$, $SD = 0.69$	$t(313) = -0.73$, $p = .47$
Family obligation: Attitudes	$M = 3.53$, $SD = 0.65$	$M = 3.50$, $SD = 0.65$	$t(314) = -0.42$, $p = .68$
Depressive symptoms	$M = 1.70$, $SD = 0.43$	$M = 1.71$, $SD = 0.43$	$t(313) = 0.21$, $p = .83$

[a] Parent education is the highest level of education attained by either the mother or father, dummy coded so that 1 = elementary school or less, 2 = middle school, 3 = some high school, 4 = high school graduate, 5 = some college or university, 6 = college graduate or more.

els to test whether family obligation was associated with depressive symptoms. Again, we did this for family obligation behaviors and attitudes separately.

Testing the Hypotheses

To test our first hypothesis that adolescent family obligation would become stronger over time, we estimated a latent growth curve model in which the repeated measures of family obligation were specified as indicators of two growth parameters: a latent intercept factor representing initial status at Time 1 and a latent slope factor representing change over time. For the slopes that estimated family obligation over three time points, the indicators were fixed at 0, 1, and 2 to represent the distance of 1 year between measurements. This model assumes that the rate of change in the first time interval (between Times 1 and 2) is similar to that in the second interval (between Times 2 and 3). Thus, we estimated linear growth over time. The model showed an acceptable fit to the data for both family obligation behaviors (CFI = 1.00, TLI = 1.00, RMSEA = 0.02), $\chi^2(1) = 1.05$, $p = .31$; and attitudes (CFI = 1.00, TLI = 1.00, RMSEA = 0.00), $\chi^2(1) = 0.17$, $p = .68$. The estimated mean level of family obligation behaviors at Time 1 was 3.43 ($p < .001$) and the estimated average rate of change over each year was $-.09$ ($p < .001$). The estimated mean level of family obligation attitudes at Time 1 was 3.55 ($p < .001$), and the estimated average rate of change each year was $-.03$ (*ns*). The findings indicate that, contrary to the hypothesis, family obligation behaviors decreased over the 2-year period whereas family obligation attitudes remained stable. In addition to providing evidence to describe change over time, latent curve modeling also allows for the estimation of whether individuals tend to differ in their mean levels. The estimated variance of the intercept was significant for both behaviors ($b = 0.51$, $p < .001$) and attitudes ($b = 0.24$, $p < .001$), indicating that there were individual differences in adolescent family obligation in terms of mean levels at Time 1. The estimated variance of the slope was significant for behaviors ($b = 0.06$, $p < .05$) but not

attitudes ($b = 0.02$, *ns*), suggesting individual variation in the rate of change over 2 years, at least for family obligation behaviors. Finally, in addition to the latent curve models, we provide descriptive information for each construct: The mean levels (and standard deviations) of family obligation behaviors were 3.45 (0.76), 3.31 (0.78), and 3.28 (0.77) at Times 1, 2, and 3, respectively. The mean levels (and standard deviations) of family obligation attitudes were 3.53 (0.65), 3.50 (0.64), and 3.48 (0.65) at Times 1, 2, and 3, respectively. Taken together, the LGM models and descriptive mean levels show that family obligation behaviors tended to decrease over the 2-year period while family obligation attitudes remained stable.

To test the second hypothesis that female (vs. male), foreign-born (vs. U.S.-born), and firstborn (vs. laterborn) adolescents would report higher levels of family obligation over time, we estimated a conditional process model in which the latent growth factors were explained by gender, nativity, and birth order. We included adolescent age, parent education, and number of siblings as controls (see Figure 1). We estimated betas for the three paths from gender, nativity, and birth order to family obligation initial status and slope. The model showed an acceptable fit to the data for family obligation behaviors (CFI = 1.00, TLI = 1.00, RMSEA = 0.00), $\chi^2(7) = 6.66$, $p = .47$; and attitudes (CFI = 1.00, TLI = 1.00, RMSEA = 0.00), $\chi^2(7) = 1.90$, $p = .96$. For family obligation behaviors, birth order predicted initial levels ($b = -0.46$, $p < .001$) and change over time ($b = -0.11$, $p < .05$). As hypothesized, firstborn adolescents reported greater family obligation compared with laterborn adolescents. Gender and nativity did not predict family obligation behavior. For family obligation attitudes, nativity predicted initial levels ($b = -0.24$, $p < .05$), but not change over time ($b = 0.08$, *ns*). As hypothesized, foreign-born adolescents reported a stronger sense of family obligation attitudes compared with U.S.-born adolescents. Gender and birth order did not predict family obligation attitudes.

To test the third hypothesis that family obligation was associated over time with depressive symptoms, we again estimated parallel process models (see Figure 2). Because
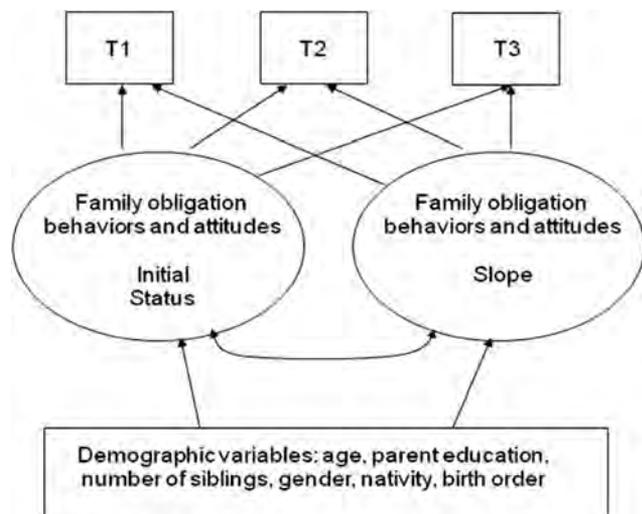
Figure 1. Conceptual model of family obligation initial status and trajectory as predicted by demographic variables. T = Time. Behaviors and attitudes were estimated in two separate models.

we were interested in understanding adolescents' resultant depressive symptoms at the end of the study, the growth model was changed such that the intercept for depressive symptoms was estimated at Time 3. In this case, we modeled growth in the slope weighted appropriately to capture change over time from the first to the third year (Time 1 = −2, Time 2 = −1, Time 3 = 0), with the intercept set to Time 3. This change in the model allowed us to explain how earlier experiences with family obligation and change over time in those experiences explained the end product of change over time in depressive symptoms. In this model, we estimated betas for the paths from initial levels of family obligation (Time 1) to depressive symptoms at Time 3, initial levels of family obligation to changes in depressive symptoms, and changes in family obligation to Time 3 level of depressive symptoms. We also estimated whether family obligation slope related to depressive symptoms slope. We included adolescent age, parent education, number of siblings, gender, birth order, and nativity as controls. The latent growth curve model with family obligation behaviors showed a good fit to the data (CFI = 0.99, TLI = 0.98, RMSEA = 0.03), $\chi^2(19) = 21.58$, $p = .30$. Initial mean levels of family obligation behaviors predicted Time 3 levels of depressive symptoms ($b = -0.24$, $p < .01$). Changes in family obligation behaviors predicted Time 3 level of depressive symptoms ($b = -0.58$, $p < .05$). and changes in depressive symptoms ($b = -0.01$, $p < .05$). The latent growth curve model with family obligation attitudes also showed a good fit to the data (CFI = 1.00, TLI = 1.00, RMSEA = 0.00), $\chi^2(19) = 11.02$, $p = .92$. Initial mean levels of family obligation attitudes predicted Time 3 levels of depressive symptoms ($b = -0.20$, $p < .01$). Changes in family obligation attitudes, however, did not predict Time 3 level of depressive symptoms ($b = 0.05$, *ns*) nor changes in depressive symptoms ($b = 0.00$, *ns*). Thus, the hypothesis that greater family obligation would be related to fewer depressive symptoms was partially supported.

Discussion

This study of Chinese American adolescents sought to examine how family obligation behaviors and attitudes changed over time; how gender, generational status, and birth order predicted these trajectories; and whether family obligation was associated with depressive symptoms. To our knowledge, our study is the first to examine how family obligation may change over time. Findings suggest that family obligation behaviors decreased over the 2-year period but that family obligation attitudes were stable. Moreover, foreign-born adolescents reported higher levels of family obligation behavior than U.S.-born adolescents and firstborn adolescents reported higher family obligation attitudes than laterborn adolescents. There were no gender differences in family obligation behaviors or attitudes. The findings also suggest that initial higher levels of family obligation were associated with subsequently fewer depressive symptoms. Finally, changes in family obligation behaviors related to changes in depressive symptoms over time so that increasing family obligation behaviors related to decreasing depressive symptoms.

We had hypothesized that, because of the high emphasis on family obligation among Chinese American families, and because our sample lived in a cultural context that afforded support for maintaining Chinese cultural values, adolescents would show a stronger sense of family obligation over time. Instead, we found that family obligation decreased over time, at least for behaviors (and not attitudes). This may reflect the "normative" pattern of adolescent development in the United States, where adolescents typically experience increasing autonomy, spend less time with the family, and become more peer oriented (Brown, 1990; Collins & Steinberg, 2006; Larson et al., 2002). As such, time spent in assisting the family may also decrease. The adolescents in our sample were still living with their
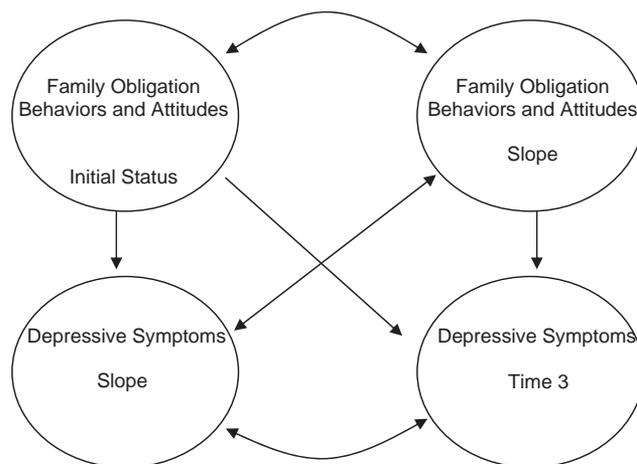

Figure 2. Conceptual model of the parallel process latent growth analyses with family obligation and depressive symptoms. Adolescent age, parent education, number of siblings, gender, nativity, and birth order are used as controls but not shown here. Behaviors and attitudes were estimated in two separate models.

parents. Perhaps we would see an increase in family obligation behaviors in another developmental period, such as emerging adulthood (Arnett, 2000), when pressures to assist and support the family may also increase.

Family obligation attitudes, on the other hand, remained stable over the 2-year period. In this particular cultural context, then, family obligation decreases with regard to behaviors but not attitudes. These findings support previous research suggesting that immigrant adolescents continue to endorse traditional cultural values, even in a new culture (Uba, 1994). Indeed, previous research showed that family obligation attitudes did not erode quickly for adolescents of various immigrant backgrounds (Fuligni et al., 1999). It is also possible that the stability we observed in the mean level family obligation attitudes (and the lack of variability among the participants) occurred because we did not sample the adolescents when their attitudes were in transition at an earlier point in time. Because it is likely that behavioral change is preceded by attitudinal change, we may have sampled our adolescents too late to detect a change in attitudes. As many of our 9th- and 10th-grade adolescents may have already experienced the multifaceted cognitive and biological changes of puberty, we may have missed the developmental window for more dramatic changes in adolescent family obligation attitudes, at least during the high school years. Nonetheless, stability in attitudes also suggests that assistance to the family remains a priority for these high school students.

We had modified the current assistance subscale of Fuligni et al.'s (1999) original family obligation measure so that we could assess behaviors in addition to attitudes. We did this because there is evidence that individuals' behaviors and attitudes do not always correspond (Bardi & Schwartz, 2003). Including behaviors proved to be valuable, as we discovered that there was only a moderate correlation between family obligation behaviors and attitudes, that they showed different developmental trajectories, and that the antecedents and outcomes differed slightly.

We did not find gender differences in either family obligation behaviors or attitudes, findings similar to those of a previous study of Chinese American adolescents (Fuligni et al., 1999). In contrast, research in urban and rural China found consistent gender differences where girls reported a stronger sense of family obligation than boys (Fuligni & Zhang, 2004). It is plausible that gender variations in family obligation are based on the particular cultural context. Perhaps the traditional Chinese cultural value in which family obligation is emphasized more for girls (at least during the adolescent years) was not as emphasized in the context of being an immigrant in the United States. Indeed, studies have found that, if the new culture's gender role expectations offer greater independence and autonomy for women, girls may be likely to identify with and incorporate the values of the new culture (Dion & Dion, 2001; Portes & Rumbaut, 1996). Studies of young adult immigrants found that women endorsed less traditional views of the family and gender role expectations more than men did (Rosenthal, Raineri, & Klimidis, 1996; Tang & Dion, 1999). This suggests that the emphasis on Chinese American girls (rather

than boys) to take care of the family may be weaker in the United States than in China. Nonetheless, it is also plausible that gender differences emerge at a later developmental period, such as during college or when entering the workforce.

We found that nativity predicted family obligation attitudes but not behavior, so that foreign-born adolescents reported a stronger sense of family obligation attitudes compared with U.S.-born adolescents, similar to other studies involving Chinese American and Chinese Australian adolescents (Feldman et al., 1992; Fuligni et al., 1999). A closer look at the mean scores over time shows that by Time 3, however, there was no significant difference between the two nativity groups in family obligation attitudes. The foreign-born adolescents appeared to weaken in their family obligation attitudes so that by Time 3, they were similar to the U.S.-born adolescents. Perhaps as foreign-born adolescents become more assimilated to U.S. culture (i.e., adopt majority culture perspectives), their attitudes toward family obligation change to match those of U.S.-born adolescents. Our findings underscore the need to consider both group-level (across generations) and individual-level (across an individual's lifetime) changes in cultural behaviors and attitudes (Phinney, 2003).

We found that, as hypothesized, birth order predicted family obligation (at least behaviors but not attitudes). More specifically, firstborn adolescents reported engaging in more family obligation behaviors than their laterborn counterparts. Consistent with traditional Chinese cultural values, it appears as if firstborns in our study shouldered greater responsibility in terms of enacting family obligation behaviors. However, family obligation still mattered to laterborns; there was no difference in birth order concerning the importance of familial respect and future assistance.

We also found that initial levels of family obligation predicted adolescent well-being so that higher initial levels of family obligation predicted fewer depressive symptoms[1] 2 years later. Furthermore, our study offers new evidence that a change in family obligation behaviors is linked to changes in depressive symptoms so that an increase in family obligation behaviors relates to a decrease in depressive symptoms. The fact that family obligation predicted subsequent depressive symptoms is important to consider. Because family obligation is also related to closer family relationships (Fuligni et al., 1999; Fuligni & Zhang, 2004), having a weak sense of obligation to the family may signal

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[1] We note here that, although there is a large literature supporting gender differences in depression, we did not find gender differences in depressive symptoms in our sample. Very few studies have tested for gender differences among Asian American adolescents in particular. The few that do exist also found no gender differences. For instance, Kim, Gonzales, Stroh, and Wang (2006) found no gender difference using the CES–D in their sample of Asian American adolescents. Yoo and Lau (2008) also found no gender difference using the Beck Depression Inventory in their sample of Asian American college students. Thus, the lack of gender differences in depressive symptoms may be unique to some Asian American samples.

a disconnection or disruption of important family ties. Because low-quality family relations are linked to greater depressive symptoms (Reinherz, Paradis, Giaconia, Stashwick, & Fitzmaurice, 2003), this disruption may explain why a decrease in orientation to the family (i.e., less active assistance or involvement to the family over time) predicts greater depressive symptoms. These findings highlight the important role of family obligation to Chinese American adolescents' mental health.

Limitations and Future Research

Several limitations to the study should be noted. First, our sample included adolescents who self-identified as Chinese and were born in various counters such as Hong Kong, Taiwan, and Vietnam. Although these countries share important cultural similarities (e.g., an emphasis on filial piety and family obligation), all have very different histories and patterns of immigration to the United States; thus, future research should take these variations into account. Second, this study was conducted in a diverse urban setting in northern California with a long history of Chinese immigrants and a high density of Chinese. Furthermore, our sample was recruited from schools that had a high number of Chinese American adolescents. Consequently, this particular context provides more cultural support and opportunities for adolescents to maintain their Chinese culture than locations with fewer Chinese populations such as in the Midwest, where schools may have a much smaller percentage of adolescents with Chinese backgrounds. Thus, our results may not be generalizable to other contexts lacking a culturally supportive community that could reinforce traditional cultural values. Third, only survey data were used. Other methodologies, such as the use of in-depth interviews (Qin, 2006) and daily diaries (Fuligni et al., 1999) would offer another, richer portrait of the role of family obligation to Chinese American adolescents. Finally, we collected data during the high school years. It would also be worthwhile to focus on how the perception of family obligation may change during times of important transitions (e.g., entering college, establishing one's own household, becoming a parent), as transitions challenge an individual's existing beliefs, attitudes, and behaviors more so than during times of relatively stability (Brooks-Gunn & Graber, 1996).

Implications

The results from this study provide compelling evidence that perceptions of family obligation are related to subsequent adjustment. There are a number of practical implications for these results. First, programs seeking to promote positive youth development should take cultural background into account. Programs geared toward immigrant youth from cultures where family obligation is central could emphasize youth's collective identity to strengthen ties to their family and culture and, in the process, remind youth of their family obligation. Second, these results add to previous literature suggesting that adolescents who support and assist their family benefit in multiple ways; adolescents

learn to be responsible, derive a sense of pride by contributing to the family, and enjoy more positive family relationships (Goodnow, 1988). Our findings extend this literature to suggest that family obligation may be protective against depressive symptoms. Finally, our results suggest that there is a difference between what adolescents value and what adolescents do. The importance of family obligation attitudes did not change over time but family obligation behaviors did (decreased). These behavioral changes signaled a deterioration in well-being. Thus, focusing on both attitudes and behaviors provided important insights to our understanding of Chinese American adolescent mental health.

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