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Attachment, sense of coherence, and mental health among Chinese American college students: Variation by migration status[☆]

Yu-Wen Ying^{a,*}, Peter Allen Lee^b, Jeanne L. Tsai^c

^aSchool of Social Welfare, University of California, Berkeley, 120 Haviland Hall, CA 94720-7400, USA

^bSan Jose State University, USA

^cStanford University, USA

Abstract

Informed by Antonovsky's salutogenic model, the current study examined sense of coherence as a mediator in the relationship of parent and peer attachment and college challenges with depressive symptom level in three groups of Chinese American college students. Due to differential acculturation, we hypothesized that peer relationship would be more salient for the most acculturated American-born Chinese, parent relationship would be more salient for the least acculturated, late arriving immigrants, and both parent and peer attachment would contribute to the well-being of early arriving immigrants who have been significantly exposed to both cultures. A sample of 112 American-born Chinese, 121 early immigrants, and 110 late immigrants completed paper-pencil surveys. Sense of coherence mediated the effect of attachment and college challenges on depressive symptoms in all three groups. Furthermore, our hypotheses regarding American-born Chinese and early immigrants were supported. For late immigrants, both parent and peer attachment predicted sense of coherence, but only parent attachment contributed to depressive symptom level. Implications for mental health interventions are discussed.

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Keywords: Sense of coherence; Social support; Parent attachment; Peer attachment; College challenges; Depression; Chinese American

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*Corresponding author.

E-mail address: ywyng10@berkeley.edu (Y.-W. Ying).

1. Introduction

At the dawn of the twenty-first century, the American population is highly diverse with regard to ethnicity and migration status. Today, one out of three Americans is non-white (US Census Bureau, 2000) and one out of nine Americans is an immigrant (US Bureau of Census, 2003). Although Asians comprise only 4% of the American population, they are the fastest growing group, having increased in size by 72% between 1990 and 2000 (US Census Bureau, 2002). A major contributor to their growth is migration, as more than one-quarter of immigrants coming to the United States originate from Asia (US Bureau of Census, 2003), and two-thirds of Asian Americans are immigrants (US Bureau of Census, 2002). Consequently, an astounding 88% of Asian American youth are growing up in immigrant-headed households today (Zhou & Bankston, 1998). More research is needed to understand predictors of mental health in this diverse group. The current study contributes to the literature by assessing intra-group variation among Chinese Americans who comprise the largest Asian group. In particular, due to variation in migration status, Chinese Americans differ in acculturation level which may impact how they utilize social relationships to bolster their well-being. Specifically, the study assesses whether parent and/or peer attachment differentially contributes to the depressive symptom level in early immigrants (those who arrived by age 12), late immigrants (those who arrived after age 12), and American-born Chinese.

1.1. Significance

The study is significant for several reasons. First, as parent and peer attachment varies in importance in Chinese and American cultures (to be discussed below), it is important to empirically examine whether Chinese American college students with varying degrees of acculturation utilize these relationships differentially to sustain their well-being. Second, assessing variation in the predictors of depressive symptom level across three groups of Chinese Americans allows for the development of subgroup-specific, culturally competent interventions. Finally, this study also makes a contribution to the literature on sense of coherence (to be discussed below) which has been shown to mediate the effect of parent and peer attachment on depressive symptom level in Chinese American college students (Ying, Lee, & Tsai, *in press*). However, no research has examined whether the relative role of parent and peer attachment on sense of coherence and depressive symptoms varies among early immigrant, late immigrant, and American-born Chinese.

1.2. Sense of coherence

The study is informed by Antonovsky's salutogenic model (1979, 1987) which proposes that physical and mental health are primarily determined by sense of coherence, defined as "a global orientation that expresses the extent to which one has a pervasive, enduring though dynamic feeling of confidence that 1. stimuli deriving from one's internal and external environments in the course of living are structured, predictable and explicable (comprehensibility); 2. the resources are available to one to meet the demands posed by these stimuli (manageability); and 3. these demands are challenges worthy of investment and engagement (meaningfulness)" (Antonovsky, 1987, p. 19). As such, sense of coherence is an internal resource that bolsters physical and mental health. Antonovsky (1987) also

suggested that loving parents and supportive friends play a significant role in rendering the world comprehensible, meaningful, and manageable. Thus, sense of coherence may be viewed as a mediator in the relationship of parent and peer attachment with well-being. Indeed, in an earlier study, we found that parent and peer attachment enhanced sense of coherence, which, in turn, mediated their protective effect against depressive symptoms among Chinese American college students (Ying et al., in press). The current study builds upon this research by examining the impact of migration status on the relationship of parent and peer attachment with sense of coherence and depressive symptom level.

Antonovsky (1979, 1987) also postulated that significant life stressors diminish the belief that the world is comprehensible, meaningful, and manageable, and may result in psychological distress. Thus, sense of coherence is also a mediator of the effect of life stressors on mental health. Empirical research has supported this postulation in early adolescents (Tram & Cole, 2000), and Southeast Asian American refugee adults (Ying & Akutsu, 1997; Ying, Akutsu, Zhang, & Huang, 1997). Furthermore, among Chinese American college students, sense of coherence has been found to mediate the effect of college challenges on depressive symptom level (Ying et al., in press). Thus, the variable college challenges is also included in the current study.

1.3. Migration status and the function of parent and peer attachment

Migration status has been associated with acculturation level, such that Chinese American college students who immigrated by age of 12 (early immigrants) embraced American culture significantly more than those who arrived after age of 12 (late immigrants), and both were less acculturated than American-born Chinese (Tsai, Ying, & Lee, 2000). Similarly, the function of parent and peer attachment is likely to approximate American and Chinese cultural norms to different degrees, depending on migration status. Below we further discuss these relationships in American and Chinese cultural contexts.

The United States has been identified as the most individualistic nation in Hofstede's (1980) study of forty countries worldwide. In accordance with this cultural norm, American parents promote autonomy and uniqueness in their children (Markus & Kitayama, 1991). During adolescence, American youth are engaged with the task of forging a separate identity that necessitates psychological individuation from their parents (Blos, 1979; Erikson, 1968). While the intergenerational relationship remains a source of support during this process, the adolescent's need to assert a distinct sense of self leads to a rise in intergenerational conflict (Lempers & Clark-Lempers, 1992). Thus, the previously asymmetrical, hierarchical relationship is transformed into a more mutual and egalitarian one (Grotevant & Coomper, 1986; Lempers & Clark-Lempers, 1992). Concurrently, peers progressively replace parents as the most important source of support as they mirror and nurture the adolescent's evolving identity (Blos, 1979; Laursen & Williams, 1997; Lempers & Clark-Lempers, 1992). Empirical research has shown that problems with peers increase depressed mood while problems with parents do not, and peer support protects against stressors more than parental support among late adolescents and college students (Gore & Aseltine, 1995; Martin & Burks, 1985). Furthermore, recent research has shown that the previously documented link between parent attachment and college adjustment is actually fully mediated by the adolescent's degree of separation and individuation (Mattanah, Hancock, & Brand, 2004).

In contrast, Chinese culture is familial and collectivistic (Hofstede, 1980; Hsu, 1985), as reflected in three essential components of Confucian philosophy: a relationship-based definition of self, the structural and hierarchical nature of relationships, and the fulfillment of social obligations as the basis for societal harmony and order (Bond & Hwang, 1986). Chinese American parents have been found to instill these values in their children, emphasizing parental respect and obedience (Chao, 1994; Gorman, 1998). Consequently, their adolescent children express a need to fulfill their parents' desires (Ying, Coombs, & Lee, 1999), which is viewed as more important than fulfilling their own desires (Yau & Smetana, 1993). Also, Asian American college students emphasize family obligation more than their White peers (Tseng, 2004). Furthermore, Kenny and Stryker (1996) found ethnic minority students (including Chinese Americans) relied on parental support while White students relied on peer support in adjusting to college life. Variation in the intergenerational relationship by migration status has also been supported. Immigrant Asian Americans emphasize family obligation more than their American-born Asian peers (Tseng, 2004). Late arriving Chinese American immigrant college students enjoy a stronger attachment to their parents than their early immigrant peers (Ying, Lee, Tsai, Lee, & Tsang, 2001). Furthermore, more acculturated American-born Asian adolescents are significantly more likely to openly assert autonomy from their parents than their immigrant peers (Fulgini, 1998), while immigrant high school students are more intimate with their parents than American-born Chinese (Chao, 2001).

In contrast, very little research has assessed the role of peers in the lives of Chinese Americans (Okagaki & Bojczyk, 2002). While Gloria and Ho (2003) found both parent and peer support enhanced the self-esteem of Asian American college students, they did not examine the contribution of migration status. However, Hsu (1985) has argued that kinship relationships permanently inhabit the social world and define the human-hood ("jen") of Chinese people. In contrast, non-kinship relations are temporary and less essential. Thus, transgressions against one's parents merit the perpetrator a condemnation of "pu shih jen" (not a human), while misconduct towards friends only warrants "huai jen" (bad person). Congruent with this Chinese value, for the least acculturated Chinese Americans (late immigrants), parent attachment is likely to remain most salient in promoting sense of coherence and reducing depressive symptoms. In contrast, consequent to their acculturation, American-born Chinese are more likely to rely on peer support for their well-being. For the intermediate group of early immigrants, who are significantly immersed in both Chinese and American cultures, both relationships may be salient.

1.4. Gender as a control variable

Research has shown that Chinese American males enjoy a higher sense of coherence than females (Anson, Paran, Newmann, & Chernichovsky, 1993; Antonovsky & Sagy, 1986; Ying, Lee, & Tsai, 2000; Ying et al., in press). Furthermore, research has demonstrated that, compared to men, women ruminate over problems more and feel less able to control their lives, resulting in higher levels of depressive symptoms (Nolen-Hoeksema, Larson, & Grayson, 1999). This gender difference has been found in Asian American adolescents (Ying & Han, in press) and Chinese American college students (Ying et al., in press). Thus, we hypothesized that women would report higher depressive symptom levels than men.

1.5. Research hypotheses

Based on the above review, we hypothesized that sense of coherence would mediate the effect of attachment and college challenges on depressive symptom level in all three groups under study. However, they would vary with regard to which relationship would be most salient in predicting sense of coherence and depressive symptom level. We hypothesized that peer attachment would be more important for American-born Chinese, parent attachment would be more important for late immigrants, and both relationships would serve as predictors among early immigrants.

2. Methods

2.1. Sample

The sample consisted of 353 Chinese American college students at a major public university in the western United States. As Table 1 shows, 122 were born in the United States, 121 were early immigrants who arrived before or at age 12, and 110 were late immigrants who arrived after the age of 12. Variation by migration status was tested using analyses of variance with Scheffe posthoc test and chi-square tests. The three groups did not vary by gender or year in college. However, based on Hollingshead (1957) method of calculating socioeconomic status (SES) using father's education and occupation (where the possible range of scores is from 11 to 77, with 11 being the highest socioeconomic level), American-born students were significantly better off (mean = 23.38, SD = 13.74) than both early and late immigrant students (mean = 31.23, SD = 15.40 and mean = 31.38, SD = 15.31, respectively, $p < .05$). Additionally, late immigrants were older than their American-born and early immigrant peers (mean = 21.14, SD = 2.14 vs. mean = 19.71, SD = 1.48 and mean = 19.93, SD = 1.31, respectively). The overwhelming majority of the

Table 1
Descriptives of demographic variables by migration status

	American-born Chinese (ABC) (N = 122)	Early immigrants (N = 121)	Late immigrants (N = 110)	Significant differences ($p \leq .05$)
% Male	48.4	46.3	53.4	—
Year in college	2.60 (1.20)	2.59 (1.14)	2.87 (1.18)	—
Socioeconomic status	23.38 (13.74)	31.23 (15.40)	31.38 (15.31)	ABC < Others
Age	19.71 (1.48)	19.93 (1.31)	21.14 (2.14)	Late > Others
% Single	98.4	97.5	92.9	—
<i>Academic major (%)</i>				
Social sciences and humanities	29.5%	30.6%	20.0%	—
Engineering and computer science	13.9%	24.8%	40.0%	Late > Others, Early > ABC
Physical sciences	25.4%	15.7%	10.9%	ABC > Late
Business/economics/mathematics	13.9%	10.7%	16.4%	—
Undeclared	17.2%	18.2%	12.7%	—
Grade point average	3.11 (.47)	3.14 (.49)	3.28 (.52)	ABC < Late

sample was single, regardless of migration status. In terms of academic major, late immigrants were more likely to major in engineering and computer science (40%) than American-borns and early immigrants (13.9 and 24.8%, respectively, $p < .05$), and early immigrants were also more likely to be in these majors than American-borns ($p < .05$). In contrast, American-born students were more likely to be studying the physical sciences (25.4%) than late immigrants (10.9%, $p = .05$). Finally, American-born students also reported a lower grade point average than late immigrants (mean = 3.11, SD = .47 vs. mean = 3.28, SD = .52, $p < .05$, where 4 = A, 3 = B, 2 = C, 1 = D, $F = 0$).

2.2. Measures

Inventory of college challenges for ethnic minority students (ICCEMS). The first 27 items on the ICCEMS were adopted from the young adult family inventory of life events and changes (YA-FILES) Part II. College Changes (Grochowsky & McCubbin, 1987) scale. Additional items were generated by a review of the literature and the authors' knowledge of the challenges faced by ethnic minority students (Ying, Lee, & Tsai, 2004a). Participants were asked to indicate the degree to which each ICCEMS item happened to them in the last six months. The responses were coded as 0—not at all, 1—a little, 2—somewhat, 3—often, and 4—all the time. Their responses to the 52 ICCEMS items were subjected to factor analysis and yielded 13 domains of challenges, including five pertaining to academic challenges (sample item: “You felt you could not keep up with the academic demands”); five pertaining to social challenges (sample items: “You felt you were subject to racial discrimination,” and “You felt isolated from the college community”); and three pertaining to general living challenges (sample item: “You felt financial pressures regarding how to pay for tuition, books and, etc.,” Ying et al., 2004a). The overall ICCEMS sum score was created by summing the 13 mean subscale scores and used for the current study. Thus the scores ranged from 0 to 52, with higher scores reflecting greater challenges. The scale's internal alpha reliability was .89, and one-month test-retest reliability with a subsample ($n = 53$) was .84. Its criterion and construct validity have been reported previously (Ying et al., 2004a).

Parent and peer attachment was measured by the inventory of parent and peer attachment (IPPA, Armsden & Greenberg, 1987). The IPPA was a self-report measure that included 28 parent items (sample item: “I trust my parents”) and 25 peer items (sample item: “My friends are easy to talk to”) that measured trust, communication, and alienation in these relationships. The IPPA used a five-point Likert scale response format, with 1 = almost or never true and 5 = almost always or always true. Items 3, 5, 7, 10 and 15 were reverse coded in the parent section and item 5 was reverse coded in the peer section before calculating the sum scores. The range of possible scores was from -20 to +92 on the parent subscale and from -25 to +83 on the peer subscale, with a higher score reflecting better attachment in both cases. In our study, internal reliability was .93 for the Parent Attachment Subscale and .92 for the Peer Attachment Subscale. One-month test-retest reliability was .96 and .93, respectively ($n = 52$).

Sense of coherence was measured using Antonovsky's (1987) Sense of Coherence Questionnaire (SOCS). The instrument consisted of 29 items that examined the comprehensibility, manageability, and meaningfulness of the participants' lives. A sample item was “Do you have the feeling you don't really care about what is going on around you? (reverse coded). The items were coded on a seven point scale, reflecting various levels of agreement. Items 1, 4, 5, 6, 7, 11, 13, 14, 16, 20, 23, 25, and 27 were reverse coded.

The range of possible sum scores was from 29 to 203, with higher scores indicating greater coherence. SOCS's psychometric properties have been well demonstrated in numerous previous research (Antonovsky, 1993). In our study, its internal reliability was .90, and 1-month test-retest reliability was .94 ($n = 60$).

Depressive symptoms were measured by the 20-item Center for Epidemiological Studies—Depression Scale (CES-D, Radloff, 1977). A sample item was “I felt depressed.” Participants were asked how often they had experienced an item in the last week: “0”—rarely or none of the time—less than 1 day; “1”—some or a little of the time—1–2 days; “2” occasionally or a moderate amount of the time—3 or 4 days; and “3”—most or all of the time—5–7 days. Four positively worded items were reverse coded (items 4, 8, 12, and 16) before summing the responses. The range of possible scores was from 0 to 60, with higher scores indicating greater depression. In our sample, internal reliability was .88, and one-month test-retest reliability was .77 ($n = 55$).

Demographics. The Demographic Questionnaire assessed migration status (American-born, early or late immigrant), gender, year in college, socioeconomic status (SES, as calculated using Hollingshead's method, 1957, see *Sample* for discussion), age, marital status, academic major, and grade point average.

2.3. Procedure

Recruitment of participants occurred through the psychology subject pool, announcement made at classes and Asian American student organization meetings, and flyers posted throughout campus, and by word of mouth. Participants signed a consent form and completed the paper-pencil questionnaires, including, the Parent and Peer Attachment Inventory, ICCEMS, the Sense of Coherence Scale, the Center for Epidemiological Studies—Depression Scale, and the Demographics Questionnaire.

3. Results

3.1. Variation by migration type using bivariate tests

Before testing the hypothesized relationships using multivariate analyses, variation of study variables by migration status was examined using analyses of variance with Scheffe posthoc tests (two-tailed tests). As Table 2 shows, early immigrants were less attached to their parents than late immigrants (mean = 43.65, SD = 18.99 and mean = 50.92, SD = 17.69, $p = .01$). In contrast, late immigrants were less attached to their peers (mean = 47.92, SD = 13.14) than both American-born Chinese and early immigrants (mean = 57.38, SD = 12.45, $p < .001$ and mean = 54.07, SD = 17.69, $p = .01$, $p = .001$, respectively). American-born students reported experiencing fewer challenges than late immigrants (mean = 15.59, SD = 5.58 and mean = 18.16, SD = 7.23, $p = .01$). The three groups did not vary on sense of coherence. American-born Chinese reported fewer depressive symptoms than early immigrants (mean = 15.70, SD = 8.78 and mean = 18.74, SD = 10.14, $p = .05$).

3.2. Multivariate analyses testing study questions by migration status

Next, we conducted multiple regressions to test the mediating role of sense of coherence in the relationship of parent and peer attachment and college challenges with depressive

Table 2

Descriptives of study variables by migration status

	American-born Chinese (ABC) (N = 122)	Early immigrants (N = 121)	Late immigrants (N = 110)	Significant differences
Mean (SD) for				
Parent attachment	48.11 (17.59)	43.65 (18.99)	50.92 (17.69)	Early < Late**
Peer attachment	57.38 (12.45)	54.07 (13.95)	47.92 (13.14)	Late < Others***
College challenges	15.59 (5.58)	16.39 (6.49)	18.16 (7.23)	ABC < Late**
Sense of coherence	129.20 (20.15)	125.42 (21.97)	128.06 (22.01)	
Depressive symptoms	15.70 (8.78)	18.74 (10.14)	18.05 (9.55)	ABC < Early*

* $p < .05$, ** $p < .01$, *** $p < .001$, two-tailed tests.

symptoms in each group. Specifically, following Baron and Kenny (1986) stipulation, we conducted four regressions testing 1. the contribution of parent and peer attachment and college challenges to sense of coherence; 2. the contribution of parent and peer attachment and college challenges to depressive symptom level; 3. the association of sense of coherence with depressive symptom level; and 4. the contribution of parent and peer attachment, college challenges, and sense of coherence to depressive symptom level. Gender was controlled for in all models. Tables 3–5 present, respectively, the results of these regressions for American-born Chinese, early immigrants, and late immigrants. One-tailed tests were used.

American-born Chinese. As Table 3 shows, all of the four models were significant. The first model showed that a stronger peer attachment (standardized beta = .27, $p < .001$) and fewer college challenges (standardized beta = -.41, $p < .001$) predicted a better sense of coherence. In the second model, a weaker peer attachment (standardized beta = -.15, $p = .03$) and more college challenges (standardized beta = .57, $p < .001$) predicted a higher level of depressive symptoms. Model 3 showed that sense of coherence was significantly negatively associated with depressive symptoms (standardized beta = -.68, $p < .001$). The full depressive symptom model found that, upon including sense of coherence as a predictor (standardized beta = -.49, $p < .001$), the contribution of peer attachment was no longer significant, while the predictive power of college challenges declined when compared to model 2, but remained significant (standardized beta = .37, $p < .001$). Thus, sense of coherence served as a full mediator of the effect of peer attachment and a partial mediator of the effect of college challenges on depressive symptom level among American-born Chinese.

Early immigrants. As Table 4 shows, all of the four models were significant. In the first model, sense of coherence was significantly predicted by a stronger parent and peer attachment (standardized beta = .39 and .30, respectively, $p < .001$ in both cases) and fewer college challenges (standardized beta = -.33, $p < .001$). The second model found depressive symptom level was predicted by a weaker parent and peer attachment (standardized beta = -.22, $p = .004$ and standardized beta = -.14, $p = .04$, respectively) and more college challenges (standardized beta = .46, $p < .001$). Model 3 showed that sense of coherence was significantly negatively associated with depressive symptom level (standardized beta = -.56, $p < .001$). The full depressive symptom model showed that, with the inclusion of sense of coherence (standardized beta = -.38, $p < .001$), parent and peer attachment were no longer significant predictors, while college challenges remained

Table 3
Study models in American-born Chinese students

	Sense of coherence	Depressive symptoms	Depressive symptoms	Depressive symptoms
Adjusted R-square	.30	.38	.44	.55
F	13.29, $p < .001$	18.98, $p < .001$	48.91, $p < .001$	28.83, $p < .001$
<i>Standardized beta for</i>				
Parent attachment	.09	-.07	—	-.02
Peer attachment.	.27***	-.15*	—	-.02
College challenges	-.41***	.57***	—	.37***
Sense of coherence	—	—	-.68***	-.49***
Male vs. female	-.04	-.01	-.06	-.02

* $p \leq .05$, ** $p \leq .001$, *** $p \leq .001$, one-tailed tests.

Table 4
Study models in early immigrant Chinese American students

	Sense of coherence	Depressive symptoms	Depressive symptoms	Depressive symptoms
Adjusted R-square	.42	.30	.30	.37
F	22.72, $p < .001$	13.32, $p < .001$	26.97, $p < .001$	15.11, $p < .001$
<i>Standardized beta for</i>				
Parent attachment	.39***	-.22**	—	-.07
Peer attachment.	.30***	-.14*	—	-.02
College challenges	-.33***	.46***	—	.33***
Sense of coherence	—	—	-.56***	-.38***
Male vs. female	.10	.04	.01	.07

* $p \leq .05$, ** $p \leq .001$, *** $p \leq .001$, one-tailed tests.

Table 5
Study models in late immigrant Chinese American students

	Sense of coherence	Depressive symptoms	Depressive symptoms	Depressive symptoms
Adjusted R-square	.51	.39	.42	.47
F	29.03, $p < .001$	18.14, $p < .001$	39.62, $p < .001$	19.61, $p < .001$
<i>Standardized beta for</i>				
Parent attachment	.24***	-.17*	—	-.07
Peer attachment.	.23***	-.07	—	.02
College challenges	-.51***	.53***	—	.33***
Sense of coherence	—	—	-.63***	-.41***
Male vs. female	.11	-.12	-.09	-.07

* $p \leq .05$, ** $p \leq .001$, *** $p \leq .001$, one-tailed tests.

significant (standardized beta = .33, $p < .001$), but less so than in model 2. Thus, sense of coherence fully mediated the contribution of parent and peer attachment and a partially mediated the contribution of college challenges to depressive symptom level.

Late immigrants. As Table 5 shows, all of the four models were significant. The first model showed that a stronger parent and peer attachment (standardized beta = .24 and .23, respectively, $p = .001$ in both cases) and fewer college challenges (standardized beta = −.51, $p < .001$) predicted a stronger sense of coherence. In the second model, a higher depressive symptom level was predicted by and a weaker parent attachment (standardized beta = −.17, $p = .02$) and more college challenges (standardized beta = .53, $p < .001$). Model 3 showed that sense of coherence was significantly negatively associated with depressive symptom level (standardized beta = −.63, $p < .001$). The full depressive symptom model found that, upon including sense of coherence as a predictor (standardized beta = −.41, $p < .001$), parent attachment was no longer significant, and the contribution of college challenges declined compared to model 2, but remained significant (standardized beta = .33, $p < .001$). Thus, sense of coherence served as a full mediator of the effect of parent attachment and a partial mediator of the effect of college challenges on depressive symptom level.

4. Discussion

While parent and peer attachment differentially impacted sense of coherence and depressive symptom level by migration status (to be discussed below), sense of coherence fully mediated the effect of attachment on depressive symptom level for all three groups. Furthermore, sense of coherence also partially mediated the contribution of college challenges on depressive symptom level across all migration statuses. The amount of variance accounted for in the full depressive symptom models ranged from 37% (for early immigrants) to 47% (late immigrants), suggesting the significant role of the predictive variables in explaining depressive symptom level. As variation in college challenges experienced by the three groups has been previously addressed (Ying, Lee, & Tsai, 2006), we focus below on the differential function of parent and peer attachment in the well-being of the three groups of Chinese American college students, and offer service implications.

American-born Chinese. As hypothesized, we found that only peer attachment contributed to the sense of coherence and depressive symptom level among American-born Chinese. Furthermore, they reported a stronger peer attachment than late immigrants. These findings suggest that, in spite of their exposure to Chinese culture, American-born Chinese adolescents approximated their White American peers in separating and individuating from their parents (Grotevant & Coomper, 1986; Lempers & Clark-Lempers, 1992), and utilizing their peers to support their ability to comprehend, manage, and find meaning in their lives, and to ward off depressive symptoms (Gore & Aseltine, 1995; Martin & Burks, 1985). This suggests that interventions to assist their well-being should utilize peer support. In a previous study, Yeh and Wang (2000) suggested that Chinese American student groups should collaborate with university counseling centers to offer peer support. Our results suggest that such an intervention is likely to be effective.

Early immigrants. Early immigrants who have been significantly exposed to both Chinese and American cultures utilized both parent and peer attachment to bolster their sense of coherence and reduce their depressive symptoms, supporting Gloria and Ho's (2003) finding that both of these relationships enhance the self-esteem among Asian American college students. Also, Table 2 shows that early immigrants reported the highest depressive symptom level. In addition to the peer support recommended above, interventions that strengthen their parent attachment are likely to enhance their well-being.

While their parent attachment was expected to be poorer than their less acculturated late immigrant peers, they did not enjoy a better intergenerational relationship than the more acculturated American-born Chinese. This may be because the intergenerational gap in acculturation is most prominent between early immigrants and their parents (Ying, Lee, & Tsai, 2004b). While it may be difficult to address this challenge when the adolescent is away at college, it is likely that bolstering this relationship before college may have extended positive effects. A newly developed intervention for immigrant parents has been found to enhance the intergenerational relationship of Chinese parents and their school-age children and the parents' sense of coherence (Ying, 1999, *in press*). Future research should examine whether it also enhances the child's well-being.

Late immigrants. Consistent with our discussion of the differential function of parent and peer attachment in Chinese and American cultures, the least acculturated group of late immigrants enjoyed the strongest parent attachment and the poorest peer attachment. In the multivariate models, we found partial support for our hypothesis; as expected, only parent attachment protected against depressive symptoms, however, unexpectedly, both parent and peer attachment enhanced their sense of coherence. This may partially reflect a conceptual difference between the constructs of "depressive symptoms" and "sense of coherence." As we expected, their emotional well-being (having fewer depressive symptoms) depended partially on their attachment to their parents, consistent with what would be expected of adolescents who retain a significant orientation to Chinese culture (Hsu, 1985; Yau & Smetana, 1993). However, their functioning, or ability to comprehend, manage and find meaning in their world, was assisted both by their parents who may serve as an anchor in their cross-cultural transition, and their peers who facilitate an understanding and mastery of the American environment in which they find themselves. This is supported by a previous study's finding that late immigrants encountered more college challenges than American-born Chinese and early immigrants (Ying et al., 2006). However, due to Chinese cultural values of stigma and privacy, they are unlikely to utilize campus mental health services (Atkinson & Gim, 1989; Yeh & Wang, 2000). Thus, the availability of peer support may be especially helpful to them. In a previous paper, we suggested that American-born Chinese and early immigrant students could be recruited to function in this capacity to reduce late immigrants' social isolation and facilitate their adjustment to campus life (Ying et al., 2006).

4.1. Limitations and directions for future research

Although we found sense of coherence functioned as a mediator for the effect of attachment and college challenges on depressive symptoms, due to limitations of a cross-sectional design, we are unable to form definitive conclusions regarding causal relationships among the study variables. While our models were informed by Antonovsky's (1979, 1987) theoretical postulations and the existing empirical literature, longitudinal research is clearly needed to further specify their associations.

Furthermore, the study was conducted at a highly diverse campus where the size of the Asian student population surpassed that of Whites (39.4% vs. 32.4%, *Office of Student Research, 1999*). This composition may have colored the experiences of Chinese American students. Future research should replicate this study on other campuses. However, the study makes a significant contribution to the literature by being the first to examine the differential contribution of parent and peer attachment to the sense of coherence and

depressive symptom level among Chinese American college students of varying migration statuses. Given the diversity of this population, more research is needed to document their mental health in order to inform group-specific interventions.

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