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Culture, Control, and Coping: New Perspectives on Social Support[1]

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Researchers have offered various explanations for inconsistent findings in the social support literature. Some contend that the detection of either buffering or direct effects depends on the mode of measurement. Others have demonstrated that person variables (e.g., locus of control) moderate support utilization during stressful times. This study attempts to integrate the issues of measure type, locus of control orientation, and cultural influence in a comprehensive study comparing Anglo-Americans and Chinese nationals. Measures appropriate for testing the stress-buffering model of social support were given to 198 students in a Midwestern university and 200 students in mainland China. Both measure type and locus of control orientation mediated the process of support utilization in each culture, but not in the same manner across cultures. For Anglos, stress-buffering effects of both perceived and received support were found only with internals. For Chinese, main effects and a buffering pattern from perceived support were found only with externals. The received support measure yielded negative buffering effects with the latter culture.

KEY WORDS: stress; stress buffering; coping; culture; social support.

Efforts to elucidate and generalize the buffering effects of social support have been hampered by inconsistent findings. While some studies show that support moderates the impact of stressful circumstances (e.g., Caplan, 1974;

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S. Cohen & McKay, 1984; Eaton, 1978), others demonstrate that social resources have an overall beneficial effect, irrespective of stress level (e.g., P. Cohen et al., 1982; Lin, Simeone, Ensel, & Kuo, 1979; Williams, Ware, & Donald, 1981).

Two major explanations for these inconsistent findings have been posited. First, S. Cohen and Wills (1985) contend that the detection of buffering effects depends on the type of support, and ultimately, the mode of measurement. Specifically, studies that employ functional support measures (e.g., ISSB, ISEL) are more likely to detect stress-buffering effects than are structural support measures. A second explanation implicates certain person variables as mediators. For example, studies have shown that social support's buffering effects were found only with internal locus of control individuals, not externals (e.g., Cummins, 1988; Sandler & Lakey, 1982). Although these explanations may account for the presence and absence of buffering effects with Anglo-American populations, it is uncertain whether they generalize across cultures. The present study examines the stress-mediating effects of social support among Chinese nationals.

In their review, S. Cohen and Wills (1985) included only one study of an ethnic population (Chinese-Americans, Lin et al., 1979). The lack of buffering effects detected in this study was attributed to the use of a "global," rather than a "specific and appropriate," functional measure. Without further evidence, one cannot conclude whether the lack of buffering effects is an artifact of the support measure or is related to ethnic factors. For instance, it may be that Chinese populations are less inclined than Anglos to utilize their social support in times of difficulty. This latter interpretation would be corroborated if, in a comparative study, Chinese indicated a lack of (or weak) buffering effects vis-à-vis Anglos, despite comparable levels of functional support resources. In fact, there is some evidence suggesting that precisely such results are likely.

Although research explicitly comparing social networks and support between Chinese and Anglo-American populations is virtually nonexistent, a number of inferences regarding social support and network differences between these focal populations may be deduced from the related literature. In China, the emphasis on collectivism (Hsu, 1953; Hwang, 1982; Kuo & Spees, 1983; Nuttall, Chieh, & Nuttall, 1988; Yang, 1981; Yu & Harburg, 1980) and traditional Asian values have promoted strong extended family ties within a system of mutual obligation (Bengtson & Smith, 1968; Chang, Chang, & Shen, 1984; Hsu, 1953; Nuttall et al., 1988). In addition, lower levels of modernization, technology, and subsequent decreases in mobility among Chinese contribute to the establishment of geographically proximate social networks, which may in turn lead to smaller networks of greater density, a greater proportion of family members, and more multiple-roled re-

lationships. Among Anglo-Americans, family members are important support resources (e.g., Bogat, Caldwell, Rogosch, & Kriegler, 1985); however, the ethos of individualism may alter these connections. Furthermore, the greater mobility of American populations may lead to more geographically dispersed networks as well as to an increase in other nonfamilial social connections.

Research with Chinese and other Asian populations does not indicate that tight-knit ethnic families provide more stress-buffering social support for their members, nor that Asian college students provide higher levels of support to each other. In fact, several researchers (Chan, 1986; Graves & Graves, 1985; Lin et al., 1979) have failed to find a significant buffering effect between stressors and illness for Asian populations. In one study, increased perceived crisis support actually led to elevated psychological symptoms (Chan, 1986). Korean and Caucasian college students showed no difference in level of parental support, and Korean students reported confiding less often in their peers and receiving much less support from them than did Anglo-American students (Aldwin & Greenberger, 1987). In a similar study, Asian Americans reported fewer supportive behaviors from family and friends, and perceived their families as less supportive (Uomoto, 1983; cited by Vaux, 1985).

Social support research with African American populations may further corroborate these findings, because African Americans generally share the Chinese affinity for large, close-knit family networks (Ball, Warheit, Vandiver, & Holzer, 1979, 1980; Cauce, Felner, & Primavera, 1982; McTavish, 1971; Raymond, Rhoads, & Raymond, 1980). Some research has demonstrated that low-income African American women have similar friendship networks and larger family networks than their Anglo counterparts but were less willing to utilize these resources during difficult circumstances (Ball et al., 1979, 1980). In another study, Anglo- and African American college students reported remarkably similar support network resources (in terms of size, composition, and characteristics of relationships); yet, African American women reported their friends as less supportive than did Anglo women (Stewart & Vaux, 1983).

These studies place in question the mediating effect of social support among Chinese and other ethnic groups possessing functionally resourceful networks. However, none of these studies can wholly refute S. Cohen and Wills's hypothesis on the relationship between functional support and stress-buffering, because none uses functional measures of support that Cohen and Wills have deemed "specific and appropriate." Instead, several studies employed structural support measures (Ball et al., 1979, 1980; Graves & Graves, 1985; Lin et al., 1979), and others utilized global func-

tional measures (Chan, 1986; Lin et al., 1979; Uomoto, 1983), neither of which are expected to detect significant buffering effects.

As stated earlier, certain person variables may also influence whether researchers find stress-buffering or main effects for social support. In three studies, internal locus of control individuals evidenced stress-buffering effects, externals did not (Cummins, 1988; Lefcourt, Martin, & Saleh, 1984; Sandler & Lakey, 1982). It may be that internals and externals use support differently. For example, externals report greater stress and anxiety than do internals (Lefcourt, 1976; Nelson & Phares, 1971). Because individuals under stress desire greater social affiliation (Schachter, 1959), one might predict that externals would use more support than would internals. However, Sandler and Lakey (1982) suggested that although externals amass more support connections, internals better utilize their available support. For example, internals are more active information gatherers and more effective consumers of the available information (Lefcourt, Miller, Ware, & Sherk, 1973; Phares, 1968; Seeman, 1963; Strickland, 1978; Wolk & DuCette, 1974) and therefore may be more likely to utilize informational support as an aid to coping with and diffusing stress (Lefcourt et al., 1984; Sandler & Lakey, 1982). Also, Cummins (1988) suggested that internals may derive greater benefit from esteem support because internal attributions of negative events threaten self-esteem, and, in turn, lead to depression (Peterson & Seligman, 1984, cited by Cummins, 1988). Thus, internals' self-esteem support may act as a buffer from the possible depressive effects of negative events (Cummins, 1988).

The current literature assumes that internal locus of control affects how individuals access support; however, these effects may be culturally relative—Anglo and Chinese internals might exhibit different patterns of support utilization. Locus of control may also explain the lack of buffering effects among Chinese who, in comparison to Anglo-Americans, generally have a more external locus of control (Chan, 1989; Hseih, Shybut, & Lotsof, 1969; Lao, 1977; Tseng, 1972).

This study tested whether internal locus of control itself leads to specific patterns of support utilization or whether this variable, in addition to one's cultural background, better explains supportive processes. Because gender is related to locus of control orientation (Lao, Chuang, & Yang, 1977; Levenson, 1974) and influences both support utilization and psychological adjustment (e.g., Cauce et al., 1982; Hirsch, 1979; Stokes & Wilson, 1984), it was partialled out in testing for stress-buffering and main effects. By comparing data across two different cultures, Chinese and Anglo-American, the present study attempted to substantiate the cross-cultural applicability of Sandler and Lakey's Locus of Control hypothesis.

In the present study, a distinction was made between availability and receipt of functional support. It was expected that Chinese, as compared to Anglos, would have higher scores on *perceived availability* of social support. Greater *receipt* of support was predicted for Anglos, relative to Chinese. Furthermore, it was hypothesized that Chinese subjects would be less likely than would Anglos to utilize and receive support during times of stress. However, within each group, it was predicted that locus of control would influence the stress-buffering effects of social support: Significant Stress × Social Support interactions would be detected for Anglo and Chinese internals but not for Anglo and Chinese externals.

METHOD

Participants

Participants consisted of two samples of college students. The first group comprised 198 Anglo-American students (45% male, 55% female) ranging from 18–26 years of age (M = 19) attending a typical Midwestern university. The second group included 200 Chinese students (59% male, 41% female) ranging in age from 18–28 (M = 21) from six universities/colleges in Beijing, China, and five universities/colleges in Nanjing, China.

Measures

All participants completed measures of hassles, social support, psychological adjustment, and locus of control. Each measure was chosen to provide the best test of the stress-buffering hypothesis, based on criticisms of previous research, as well as to be sensitive to cultural differences between China and the United States.

Social Support. The Interpersonal Support Evaluation List (ISEL—college student version; S. Cohen & Hoberman, 1983), a "specific functional support measure," assesses perceived availability of potential support resources. This 48-item index differentiates four types of social support (12-items per subscale): ISEL-Tangible (material aid); ISEL-Appraisal (help in defining, understanding, and coping with problems); ISEL-Esteem (confirmation of one's worth and acceptance by others); and ISEL-Belonging (companionship). The respondent answers *probably TRUE* or *probably FALSE* to items such as "There is really no one I can trust to give me good financial advice" and "Most people I know think highly of me." Both the total scale and subscales have evidenced adequate internal and test–

retest reliabilities in several samples (S. Cohen, Mermelstein, Kamarck, & Hoberman, 1985). In the present study, the internal reliability coefficients (Cronbach's alpha) for the ISEL-Composite was .86 for Anglos and .76 for Chinese. Alpha coefficients for ISEL-Tangible, ISEL-Belonging, ISEL-Appraisal, and ISEL-Esteem were, respectively, .62, .67, .81, and .46 for Anglos, and .46, .63, .60, and .30 for Chinese. Because the ISEL-Esteem subscale did not demonstrate adequate internal reliability for either culture, it was dropped from further analysis. The Inventory of Socially Supportive Behaviors (ISSB; Barrera, Sandler, & Ramsey, 1981), another specific functional support scale, measures receipt of social support. In this 40-item, 5-point Likert scale (ranges from *not at all* to *about every day*), respondents report the frequency of occurrence in the past month of such support as "having had someone provide you with information to help you understand your situation." The instrument has good test–retest reliability and high internal consistency (Barrera, 1981). In the present study, the alpha coefficient of the ISSB was .94 for both Chinese and Anglos.

Stress. The Daily Hassles Scale (Kanner, Coyne, Schaefer, & Lazarus, 1981), in modified form, served as a chronic stress index. Only those items germane to both Chinese and American cultures were included (e.g., "misplacing or losing things"). Respondents rated the severity of all hassles that occurred in the past month (1 = somewhat severe, 2 = moderately severe, 3 = extremely severe). Each respondent received a hassle intensity score (the weighted sum of hassles endorsed/No. of hassles endorsed).

Adjustment. The tendency of Chinese to evince distress through a mixture of affective and somatic complaints necessitates an adjustment measure that assesses both psychological and physical symptomatology. The 60-item version of the General Health Questionnaire (GHQ; Goldberg, 1972) was selected for its proven reliability and validity with Chinese (Chan, 1985; Chan & Chan, 1983) as well as Anglo populations (Vieweg & Hedlung, 1983). The GHQ consists of 60 questions on which respondents compared their recent state (past month) with their usual state; only those symptoms experienced more than usual are scored. Sample items include, "Have you recently lost much sleep over worry" and "tended to lose interest in your ordinary activities?" Studies with both Anglo and Chinese samples have demonstrated good internal consistency and test–retest reliability (Chan, 1985; Vieweg & Hedlund, 1983). The present study samples had alpha coefficients of .95 and .96 for Chinese and Anglos, respectively.

Locus of Control. Levenson's Multidimensional Locus of Control Scale (1973) is a 24-item index (three 8-item subscales) that uses a 6-point Likert format (ranges from *strongly disagree* to *strongly agree*) and differentiates three dimensions of control: Internality (I), Powerful Others (P), and Chance (C). The present study obtained a measure of high and low inter-

nality by analyzing only the (I) subscale. In previous studies, the I subscale demonstrated adequate internal reliability for Anglos (Levenson, 1973, 1974). In the present study, the internal consistency for the I scale was .57 for Anglos, and .50 for Chinese.

Procedure

In cross-cultural research that compares people of vastly different political, social, economic, and cultural climates (i.e., mainland China and the United States), study samples are expected to differ on many dimensions, and there are expected risks of measurement inequivalence. Therefore, we have attempted to balance emic (culture-specific) and etic (Western-type) approaches/issues. Limitations in cross-cultural equivalence are controlled by employing a rigorous method for adapting instruments. There are three relevant "equivalence" issues that we have carefully addressed in preparation for our study (content equivalence, semantic equivalence, and conceptual equivalence).

Content equivalence is established when the content of each item of the instrument is relevant to the phenomena of each culture being studied (Cronbach & Meehl, 1955). In cross-cultural research, each item of the instrument must be scrutinized to determine whether the phenomenon it describes is relevant to each culture. In the present research, two Chinese nationals and one Chinese American rated each item on each scale as relevant, irrelevant, or questionably relevant; those items rated as "irrelevant" by a single evaluator or by two or more evaluators as "questionably relevant" were eliminated.

Semantic equivalence is established by the back-translation technique described by Brislin (1970). In the present study, each of the measures was first transcribed into Chinese by a translator of mainland Chinese descent, except the GHQ which had previously been translated and used by Chan (e.g., 1985, 1986). Second, the instruments were back-translated from Chinese to English by another bilingual person. Finally, a bilingual psychologist rated each item on a 3-point scale ranging from *exactly the same meaning in both versions* (1) to *almost the same meaning in both versions* (2) and to *different meaning in each version* (3). Items that were rated as different were excluded. In some cases, rewording of the items was sufficient to allow inclusion. These reworded items were reexamined by the same back-translation technique.

Conceptually equivalent instruments measure the same theoretical construct in each culture. A direct assessment of conceptual equivalence "usually is not possible in psychiatry [or psychology and] other less direct

techniques must suffice. . . . They include examining the correlations among the items on the questionnaire in the study populations and analyzing the relationship of responses to other variables in each study population" (Vernon & Roberts, 1981, p. 1240). The usual method of examining conceptual equivalence (and that used in the present study) is to assess the relationship between constructs as measured by the instrument and to compare this with their known relationship (Cronbach & Meehl, 1955). For example, because stressful life events and psychosomatic symptoms have a positive correlation in both cultures, and because a cross-culturally valid way of measuring psychosomatic symptoms exists (the GHQ has been used previously with both cultures), the finding of significant correlations between the two variables (life events and symptoms) provides support for the conceptual equivalence of the stress instrument.

It is important to note that inherent cultural differences between the United States and China that create vastly different life-styles and university environments are not conducive to obtaining completely identical samples. For example, socioeconomic status (SES) differences between the American and Chinese samples cannot be avoided because SES reflects multiple aspects of a culture; it is defined by and intertwined with modernization, industrialization, and political climate (viz., poverty in China and the United States are entirely different).

Second there are inherent difficulties in collecting Chinese data from a communist country where citizens are confronted daily with the difficulties of censorship and concerns about personal safety for simple acts, such as participating in research. The current data collection was only possible through extended personal contacts of the first author. It required careful negotiations and implicit trust between all parties involved.

Questionnaires were shipped to a primary contact person in Beijing and another in Nanjing, China. Both contact persons (who were personal acquaintances of the primary investigator) independently elicited the cooperation of several faculty persons at each of six universities and colleges in Beijing and five universities and colleges in Nanjing. These faculty members, who had volunteered their involvement, announced the research project to their classes and then distributed questionnaires to students interested in participating. (Because total confidentiality of the Chinese professors and students was promised in order to secure participation, a more detailed account concerning the specific universities and personal information about the students and faculty cannot be reported.) Another set of questionnaires was given to Anglo-American Introductory Psychology students at a large, Midwestern university in exchange for extra course credit.

After signing a consent form, all respondents completed the questionnaires in their native language. To reduce possible order effects, questionnaire packets were assembled in three random orders.

RESULTS

Demographic differences between the Anglo and Chinese groups were assessed. An analysis of variance for Age and Culture found that Chinese subjects (M = 21.17 years) were significantly older than Anglo-American subjects (M = 19.77 years), $F(1, 334) = 160.81$, $p < .001$. There were also significant Gender and Culture differences ($\chi^2 = 6.77$, $p < .01$). The Anglo sample consisted of more females (n = 108) than males (n = 90) and the Chinese sample comprised more males (n = 112) than females (n = 79).

Univariate Between-Group Comparisons

For Anglos, internality was significantly correlated with adjustment (r = .22, $p < .01$), negative life events (r = .30, $p < .01$), ISEL-Appraisal (r = .32, $p < .01$), ISEL-Tangible (r = .32, $p < .01$), and ISEL-Belonging (r = .35, $p < .01$). For Chinese, internality was also significantly correlated with adjustment (r = .15, $p < .05$) and negative life events (r = .16, $p < .05$), but it was only significantly related to two perceived support subscales, ISEL-Appraisal (r = .16, $p < .05$) and ISEL-Tangible (r = .17, $p < .05$). For both Anglo-Americans and Chinese, internal locus of control individuals reported fewer negative symptoms and life events and more perceived support. Regarding the dependent measure, the GHQ was related not only to internality but also to overall perceived support (r = .40, $p < .01$ for Anglos; r = .24, $p < .01$ for Chinese) and negative life events (r = .58, $p < .01$ for Anglos; r = .35, $p < .01$ for Chinese). Chinese and Anglos who indicated a greater number of symptoms were lower in perceived support and higher in negative life events. For Chinese, the number of family members within an individual's network was related to two types of functional support, the ISSB (r = .26, $p < .01$) and ISEL-Appraisal (r = .25, $p < .01$).[3]

To assess differences in social support between the Chinese and Anglo samples, six separate 2 × 2 analyses of variance with two between-group factors (Culture and Gender) were conducted on five measures of social support as the dependent variables (ISSB, ISEL-Composite, ISEL-Ap-

[3]More complete descriptive data comparing Anglo and Chinese nationals is available from the authors.

praisal, ISEL-Tangible, ISEL-Belonging). Significant culture effects were found for the ISSB, $F(1, 384) = 20.17$, $p < .001$; ISEL-Composite, $F(1, 385) = 100.17$, $p < .001$; ISEL-Appraisal, $F(1, 385) = 43.59$, $p < .001$; ISEL-Tangible, $F(1, 386) = 82.92$, $p < .001$; and ISEL-Belonging, $F(1, 386) = 69.99$, $p < .001$. Anglos, relative to Chinese, reported greater receipt of support ($M = 2.54$, $M = 2.28$, respectively), perceived appraisal support ($M = 1.83$, $M = 1.68$), perceived tangible support ($M = 1.85$, $M = 1.68$), and perceived belonging support ($M = 1.72$, $M = 1.54$). Significant gender differences were found for the ISSB, $F(1, 384) = 8.61$, $p < .005$, and ISEL-Appraisal, $F(1, 384) = 5.59$, $p < .02$. Males for both groups, relative to females, indicated less actual receipt of support ($M = 2.33$ for males, $M = 2.49$ for females), whereas females had more perceived appraisal support ($M = 1.78$ for females; $M = 1.73$ for males). The Culture × Gender interaction was significant for ISEL-Appraisal, $F(1, 386) = 6.45$, $p < .02$. Anglo-American females ($M = 1.88$) and Chinese males ($M = 1.68$) perceived more availability of appraisal support than did Anglo males ($M = 1.77$) and Chinese females ($M = 1.67$).

A similar set of 2 × 2 ANOVAs was conducted replacing Gender with Age as a between factor. (Cells were too small when Gender, Age, and Culture were all included as between factors.) For these ANOVAs, Age was recoded into two groups (≤ 19 and ≥ 20). Significant Age effects were detected on only one of the support measures, ISEL-Appraisal, $F(1, 336) = 5.42$, $p < .05$. Younger subjects for both cultures, relative to older subjects, indicated a greater level of perceived appraisal support ($M = 1.79$, $M = 1.72$, respectively). There were no significant culture by age effects.

A 2 × 2 (Culture × Gender) analysis of variance for internal locus of control revealed significant differences between cultures, $F(1, 371) = 172.55$, $p < .001$—Anglos were more internal than Chinese ($M = 36.74$, $M = 29.22$, respectively). Significant Gender differences were also found $F(1, 371) = 5.51$, $p < .02$. Males indicated more internality that females ($M = 33.65$, $M = 64.61$, respectively). Results also indicated a significant Culture × Gender interaction effect, $F(1, 371) = 5.80$, $p < .02$. Chinese males ($M = 30.58$) were more internal than Chinese females ($M = 27.86$), whereas Anglo males and females were not significantly different in their level of internality ($M = 36.72$, $M = 36.75$, respectively).

Although there were no significant culture or age differences for the GHQ, a significant gender difference was found, $F(1, 369) = 18.63$, $p < .001$. Findings revealed a greater number of symptoms for females than for males in both cultures ($M = 1.95$, $M = 1.78$, respectively). Finally, no significant main effects or interactions were detected for the stress variable (Hassles-Intensity).

Multivariate Within-Group Analyses

The direct and stress-buffering effects of received and perceived support for internal and external individuals were tested through separate hierarchical multiple regressions for each of the four locus of control groups (Anglo-internal, Anglo-external, Chinese-internal, Chinese-external). Subjects were divided into these groups using the average of the I scale means from both populations as the mean split. In each of the regressions, Gender was entered as the first variable, the Stress term (Hassle-Intensity) was entered next, Social Support (ISSB or ISEL-*subscale*) was entered third, and the product of the last two terms (Hassle-Intensity × ISSB or ISEL-*subscale*) was entered as the fourth variable. For the four ISEL-Appraisal regressions only, Age was entered as the second variable because previous analyses had shown that it was significantly related to ISEL-Appraisal. A main effect for social support was indicated by significant effects for the ISSB and ISEL terms, whereas a buffering effect was evidenced by significant effects for the interaction terms (Hassle-Intensity × ISSB and Hassle-Intensity × ISEL-*subscale*). (This procedure was used in lieu of an omnibus multiple regression that entered culture, internality, gender, stress, and social support into the same equation due to the difficulty in interpreting the resulting interaction effects.) See Tables I, II, III, IV, V.

For the Anglo-Americans, the ISSB × Hassle-Intensity interaction significantly predicted Adjustment (GHQ) only for internal subjects (ΔR^2 = .04, ΔF = 9.96, $p < .01$), not externals (see Figures 1 and 2). Received social support (ISSB) buffered the effect of stress on adjustment for Anglo internals as expected. Further, main effects for received support were detected for only Anglo externals (ΔR^2 = .07, ΔF = 5.08, $p < .01$). Those individuals who reported greater receipt of social support indicated fewer symptoms of negative adjustment, irrespective of stress level. Similarly, buffering effects of perceived social support were found only for Anglo internals (ISEL-Tangible, ΔR^2 = .028, ΔF = 6.46, $p < .05$; and ISEL-Belonging, ΔR^2 = .039, ΔF = 10.02, $p < .002$). Anglo internals also demonstrated main effects for the three types of perceived support (ISEL-Appraisal, ΔR^2 = .03, ΔF = 5.96, $p < .02$; ISEL-Tangible, ΔR^2 = .02, ΔF = 4.08, $p < .05$; and ISEL-Belonging, ΔR^2 = .07, ΔF = 16.45, $p < .001$. Externals showed main effects only for ISEL-Appraisal (ΔR^2 = .08, ΔF = 6.03, $p < .02$).

In comparison with the U.S. sample, Chinese data yielded strikingly dissimilar results. The ISSB × Hassle-Intensity interaction was significant for externals rather than internals (ΔR^2 = .05, ΔF = 8.65, $p < .01$). Social support in this interaction acted as a negative buffer (see Figure 3). That is, the relationship between stress and negative adjustment was higher for

Table I. Hierarchical Regression with ISSB Predicting to Adjustment: Anglos and Chinese

Variable	F		ΔF		ΔR^2		β	
	Anglos	Chinese	Anglos	Chinese	Anglos	Chinese	Anglos	Chinese
				Externals[a]				
Gender	4.20[c]	6.26[c]	4.20[c]	6.26[c]	0.08	0.05	0.28	0.21
Hassles	11.63[d]	14.48[d]	17.63[d]	21.72[d]	0.25	0.14	0.50	0.37
ISSB	10.10[d]	9.72[d]	5.08[c]	0.34	0.07	0.00	–0.29	–0.05
Hassles × ISSB	7.42[d]	9.89[d]	0.00	8.65[d]	0.00	0.05	–0.02	1.20
				Internals[b]				
Gender	5.15[c]	0.54	5.15[d]	0.54	0.04	0.01	0.19	0.11
Hassles	40.24[d]	0.97	72.63[d]	1.40	0.34	0.03	0.58	0.17
ISSB	27.45[d]	0.77	1.55	0.40	0.01	0.01	–0.09	0.10
Hassles × ISSB	24.44[d]	0.84	9.96[d]	1.03	0.04	0.02	–1.08	0.69

[a]Anglos: $n = 51$, $R^2 = .39$, $SE = .37$; Chinese: $n = 142$, $R^2 = .23$, $SE = .35$.
[b]Anglos: $n = 140$, $R^2 = .42$, $SE = .28$; Chinese: $n = 53$, $R^2 = .05$, $SE = .28$.
[c]$p < .05$.
[d]$p < .01$.

Table II. Hierarchical Regression with ISEL-Composite Predicting to Adjustment: Anglos and Chinese

	F		ΔF		ΔR^2		β	
Variable	Anglos	Chinese	Anglos	Chinese	Anglos	Chinese	Anglos	Chinese
				Externals[a]				
Gender	4.20[c]	6.26[c]	4.20[c]	6.26[c]	0.08	0.05	0.28	0.21
Hassles	11.63[d]	14.98[d]	17.63[d]	22.67[d]	0.25	0.14	0.50	0.38
ISEL	10.50[d]	12.58[d]	5.88[c]	6.52[c]	0.07	0.04	–0.29	–0.21
Hassles × ISEL	8.63[d]	9.38[d]	2.21	0.60	0.03	0.00	1.30	–0.24
				Internals[b]				
Gender	5.15[c]	0.54	5.15[c]	0.54	0.04	0.01	0.19	0.11
Hassles	40.24[d]	1.43	72.62[d]	2.31	0.34	0.05	0.58	0.21
ISSB	36.19[d]	1.03	18.03[d]	0.28	0.07	0.06	–0.28	0.08
Hassles × ISEL	32.10[d]	0.87	11.43[d]	0.43	0.04	0.01	–2.46	1.32

[a]Anglos: $n = 51$, $R^2 = .43$, $SE = .36$; Chinese: $n = 142$, $R^2 = .23$, $SE = .36$.

[b]Anglos: $n = 140$, $R^2 = .49$, $SE = 26$; Chinese: $n = 53$, , $R^2 = 10$, $SE = .26$.

[c]$p < .05$.

[d]$p < .01$.

Table III. Hierarchical Regression with ISEL-Appraisal Predicting to Adjustment: Anglos and Chinese

	F		ΔF		ΔR^2		β	
	Anglos	Chinese	Anglos	Chinese	Anglos	Chinese	Anglos	Chinese
				Externals[a]				
Gender	4.20[c]	6.26[c]	4.20[c]	6.26[c]	0.08	0.05	0.28	0.21
Hassles	11.63[d]	14.98[d]	17.63[d]	22.67[d]	0.25	0.14	0.50	0.38
ISEL-Appraisal	10.57[d]	12.49[d]	6.03[c]	6.29[c]	0.08	0.04	−0.30	−0.20
Hassles × ISEL-Appraisal	8.76[d]	9.46[d]	2.39	0.51	0.03	0.00	0.39	0.45
				Internals[b]				
Gender	5.15[c]	0.54	5.15[c]	0.53	0.04	0.01	0.19	0.10
Hassles	40.24[d]	1.43	72.63[d]	2.04	0.34	0.05	0.58	0.22
ISEL-Appraisal	30.29[d]	1.40	6.90[d]	1.33	0.03	0.03	−0.19	0.17
Hassles × ISEL-Appraisal	26.80[d]	1.10	10.17[d]	0.24	0.04	0.01	−1.49	−0.76

[a]Anglos: $n = 51$, $R^2 = .43$, $SE = .36$; Chinese: $n = 142$, $R^2 = .23$, $SE = .36$.
[b]Anglos: $n = 140$, $R^2 = .44$, $SE = .28$; Chinese: $n = 53$, $R^2 = .09$, $SE = .28$.
[c]$p < .05$.
[d]$p < .01$.

Table IV. Hierarchical Regression with ISEL-Tangible Predicting to Adjustment: Anglos and Chinese

Variable	F		ΔF		ΔR^2		β	
	Anglos	Chinese	Anglos	Chinese	Anglos	Chinese	Anglos	Chinese
				Externals[a]				
Gender	4.20[c]	6.26[c]	4.20[c]	6.26[c]	0.08	0.05	0.28	0.21
Hassles	11.63[d]	14.98[d]	17.63[d]	22.67[d]	0.25	0.14	0.50	0.37
ISEL-Tangible	8.37[d]	11.53[d]	1.59	3.96[c]	0.02	0.02	–0.16	–0.16
Hassles × ISEL-Tangible	6.61[d]	8.84[d]	1.21	0.82	0.02	0.01	1.00	–0.63
				Internals[b]				
Gender	5.15[c]	0.54	5.15[c]	0.54	0.04	0.01	0.19	0.11
Hassles	40.24[d]	1.43	72.63[d]	2.31	0.34	0.05	0.58	0.22
ISSB	28.79[d]	0.40	4.08[c]	0.18	0.02	0.00	–0.14	0.06
Hassles × ISEL-Tangible	24.08[d]	0.50	6.46[c]	0.46	0.03	0.01	–1.58	1.02

[a]Anglos: $n = 51$, $R^2 = .37$, $SE = .38$; Chinese: $n = 142$, $R^2 = .22$, $SE = .36$
[b]Anglos: $n = 140$, $R^2 = .42$, $SE = .28$; Chinese: $n = 53$, $R^2 = .07$, $SE = .28$.
[c]$p < .05$.
[d]$p < .01$.

Table V. Hierarchical Regression with ISEL-Belonging Predicting to Adjustment: Anglos and Chinese

	F		*ΔF*		ΔR^2		β	
	Anglos	Chinese	Anglos	Chinese	Anglos	Chinese	Anglos	Chinese
				Externals[a]				
Gender	4.20[c]	6.26[c]	4.20[c]	6.26[c]	0.08	0.05	0.28	0.21
Hassles	11.63[d]	14.98[d]	17.63[d]	22.67[d]	0.25	0.14	0.50	0.38
ISEL-Belonging	8.46[d]	10.32[d]	1.76	1.00	0.02	0.01	–0.16	–0.08
Hassles × ISEL-Belonging	6.48[d]	8.01[d]	0.71	1.07	0.01	0.01	0.70	0.59
				Internalsb				
Gender	5.15[c]	0.54	5.15[c]	0.54	0.04	0.01	0.19	0.11
Hassles	40.24[d]	1.43	72.63[d]	2.31	0.34	0.05	0.58	0.22
ISEL-Belonging	35.35[d]	0.96	16.45[d]	0.06	0.07	0.00	–0.26	0.04
Hassles × ISEL-Belonging	30.79[d]	0.82	10.02[d]	0.44	0.04	0.01	–1.67	0.82

[a]Anglos: $n = 51$, $R^2 = .36$, $SE = .38$; Chinese: $n = 142$, $R^2 = .20$, $SE = .36$
[b]Anglos: $n = 140$, $R^2 = .48$, $SE = .27$; Chinese: $n = 53$, $R^2 = .07$, $SE = .28$
[c]$p < .05$.
[d]$p < .01$.

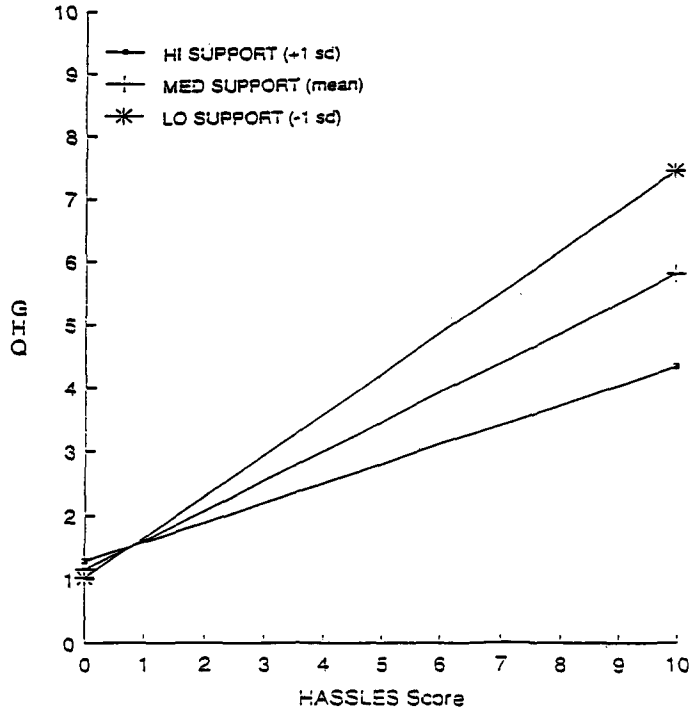

Fig. 1. Regression of GHQ on HASSLES for three values of ISSB: Anglo internals.

Chinese externals who received more social support than for those who lacked such support. Although Chinese revealed no significant buffering effects for the ISEL-Composite or ISEL-*subscales*, significant main effects for ISEL-Appraisal ($\Delta R^2 = .03$, $\Delta F = 3.71$, $p < .05$) and ISEL-Tangible ($\Delta R^2 = .024$, $\Delta F = 3.96$, $p < .05$) were found for Chinese externals.

DISCUSSION

The purpose of this study was to test whether the stress-buffering model of social support was applicable to both Chinese and Anglo cultures. An adequate test required the administration of appropriate functional measures of social support and the examination of a one-person variable previously related to stress-buffering (i.e., locus of control).

In the present study, the Chinese sample had less functional support than the Anglos; however, both groups had fairly comparable levels of support. Thus, if buffering effects existed, the levels of functional support were

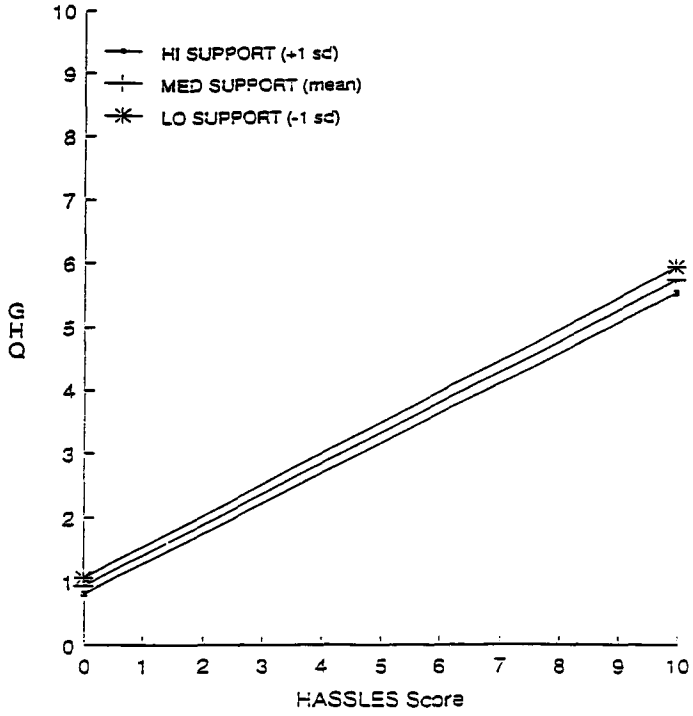

Fig. 2. Regression of GHQ on HASSLES for three values of ISSB: Anglo externals.

adequate to detect them. Our results indicate that the two cultural groups demonstrated well-defined differences in the ways they utilized support. Anglos generally had greater stress-buffering effects from social support than did Chinese. Although locus of control appears to mediate the predictive power of the stress by social support interaction for adjustment in both cultures, the specific relationship between locus of control and these three variables varies across cultures. Anglo results were in accordance with extant research that evidences stress-buffering effects for only internal locus of control individuals (e.g., Cummins, 1988; Lefcourt et al., 1984; Sandler & Lakey, 1982). Interestingly though, neither received nor perceived social support were directly or indirectly beneficial for *Chinese* internals.

These findings suggest not only that the influence of social support is differential across cultures but also that the influence of locus of control is not absolute. Instead, locus of control may interact with cultural norms and values to affect behavior and experience differentially across ethnic groups. An internal locus of control may have the universal effect of

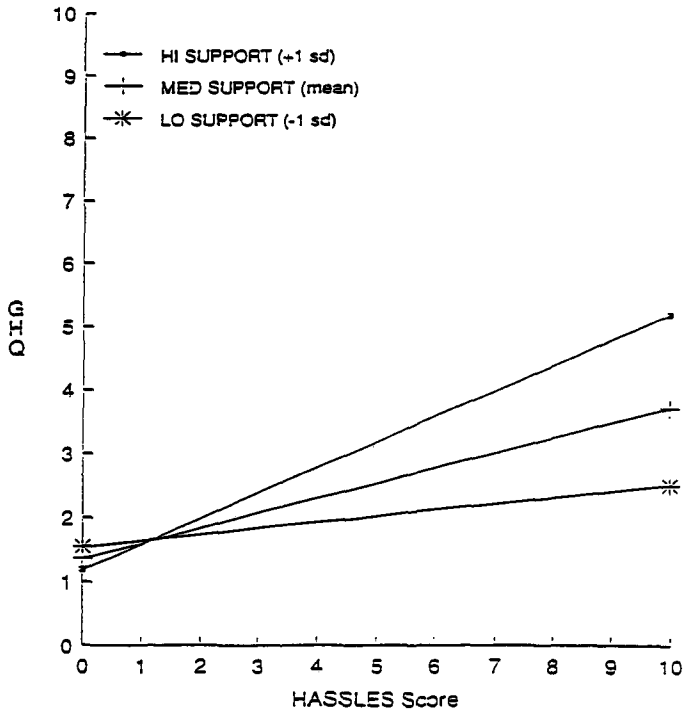

Fig. 3. Regression of GHQ on HASSLES for three values of ISSB: Chinese externals.

amplifying one's ability or tendency to respond actively and adaptively; but what is considered active or adaptive may be relative to one's own culture.

Among Anglo-Americans, the more adaptive response to stress may involve actively and effectually accruing and employing support resources. The Chinese cultural ideal, which expects self-discipline from those with high education and high social status, may prescribe more self-directed coping strategies (e.g., controlling oneself, modifying personal expectations), rather than help-seeking. For instance, Wu (1982) suggested that the dilution of stress for Chinese is associated with the ability to "correct the mind and train the temperament" (p. 297). A study employing Hong Kong university students demonstrated that in situations of mild distress, the most prevalent strategies of active coping involved analyzing the problem, resetting goals, and working harder (Cheung, Lee, & Chan, 1983). Psychological endurance (i.e., telling oneself to be calm, to accept or forget the problem, and to control one's thoughts) was also a frequent coping strategy. This behavior may be related to the documented tendency for Asians to somati-

cize emotional distress or to "save face" and protect the reputation of one's family by concealing severe problems from network members.

For Chinese externals, received support was not only unrelated to better adjustment, but also had a *negative* stress-buffering effect. That is, the stress–illness relationship was strongest for Chinese externals who received the most social support. The Chinese tendency to evince emotional restraint (Argyle, Henderson, Bond, Iizuka, & Contarello, 1984; cited by Bond, 1986) may make stressful/difficult times less readily detectable to others. Therefore, to receive help, Chinese may be forced to request it explicitly; this may be a stressful undertaking in itself. Requesting assistance from others may signify exposing one's vulnerability and/or incompetence, and risking rejection. These potential consequences are antithetical to seeking "face," the endeavor to enhance one's social status by presenting oneself as better adjusted, more competent, and possessing better social ties than may actually be the case (Bond, 1986). The tendency for Chinese to act in accordance with external expectations or social norms, rather than with internal wishes, may further explain their reluctance to request help in times of need (e.g., Yang, 1981).

Perceived appraisal and perceived tangible support, however, had a beneficial effect for Chinese externals, irrespective of stress level. This group also exhibited a buffering pattern for perceived support. Hence, perceiving that these types of support are available if needed may be more instrumental in alleviating the effects of stress on adjustment than actually receiving support for Chinese.

The findings discussed thus far corroborate S. Cohen and Wills's contention that the detection of stress-buffering effects depends on the type of social support measure employed. Specifically, the ISEL and ISSB were differentially successful in predicting adjustment and yielding stress-buffering effects. Measure type alone, however, does not account for the results of this study. A nonstatistical comparison of Anglo-American beta weights for received versus perceived support suggests that received support (ISSB) is more stress-buffering, whereas perceived support (ISEL-Composite) is more directly beneficial (main effect). In contrast, the differential effects of received versus perceived support were even greater for Chinese; received support is not only unhelpful during times of high stress, but is related to greater negative adjustment under these circumstances. Further, perceived availability of support, relative to actual receipt of support, is of greater direct benefit (main effect) for the Chinese. Hence, despite the use of what S. Cohen and Wills (1985) deem "appropriate" measures to detect buffering effects, results of this study

corroborate previous research that suggests a lack of buffering effects among Chinese (e.g., Lin et al., 1979).

Limitations of the Study

Future researchers should be advised of limitations specific to this study, as well as those more generally inherent in cross-cultural research, including sample biases and measurement biases. The Chinese sample in this study may lack generalizability for two reasons. First, entry into Chinese universities is uncommon and limited to only the most competent, most motivated, and (perhaps) the most independent individuals who defy the standards of the status quo (as exemplified by historical uprisings led by students in Beijing). Second, because there are relatively few universities in China, students are often forced to relocate to cities that are geographically removed from their hometowns. Family and other established support resources may be less accessible to these individuals.

In this study, findings may be a result of not only cultural influences but also measurement biases. Measures initially developed for Western populations are potentially biased and insensitive to Chinese support patterns because they may include items less germane to Chinese culture and/or exclude items that measure support qualities specific to Chinese. For example, lower reliability coefficients on the ISEL subscales for Chinese may be due in part to the presence of items that measure American cultural mores that are not present in China. Social norms in China limit "casual dating"; therefore, it is less conventional for Chinese than for Americans to "fix a friend up for a weekend date," an item on the ISEL. On the other hand, important sources of support available to Chinese students (e.g., government subsidies for medical care, tuition, room and board, and job placement/security) are not included in support measures developed for Western populations. Finally, it must be noted that the amount of variance accountable for by any of the models we tested was small. There are clearly other variables, which were not measured in this study, that better predict adjustment.

Conclusions

Our findings, taking into account the caveats mentioned above, suggest a new, more comprehensive model for social support utilization than those proposed by past studies (Figure 4). While former studies have acknowledged the separate influences of locus of control, culture, and meas-

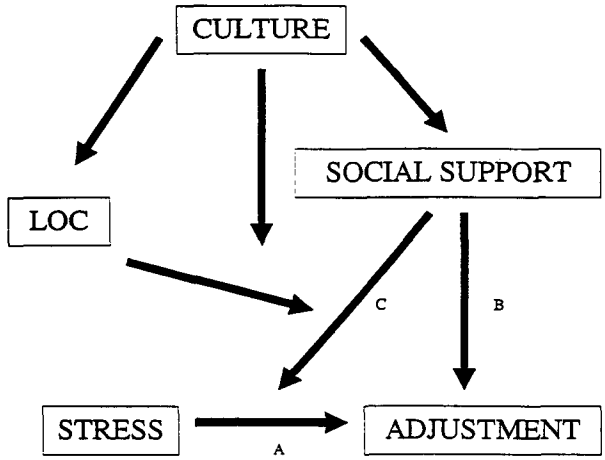

Fig. 4. New model of social support including culture and locus of control influences: A = stress direct effect; B = social support main effect, C = stress-buffering effect.

ure type, the present study demonstrates the combined influences of these variables to determine the presence of stress-buffering effects. Specifically, culture moderates the influence of locus of control on social support processes differentially across measure types.

Thus, the generalizability of current theoretical research on social support may be compromised by its overreliance on Anglo-American data. Future research can generate a more accurate and complete theory of social support by examining cultural factors as they relate to its provision, perception, receipt, and utilization. Understanding the mechanisms of social support in various national cultures might usefully inform conceptualizations of social support in American subcultures.

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