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Cultural Differences in the Perception of Stress

By

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Table of Contents

Abstract

International students in the United States must deal with a great amount of stress. Past studies indicate that deleterious effects of stress lessen when people receive good support. Collectivism results in an interdependence with ingroups and collective coping methods, whereas individualism results in independence and greater perceived loneliness. This suggests the hypotheses that collectivists will miss good support more than individualists and hence, will have more difficulty adjusting to another culture. 155 international students at the University of Illinois responded to a questionnaire examining the perception of stress; of these respondents, we identified 65 collectivists and 51 individualists. Respondents rated their perception of stress to 27 unpleasant life events presented as a revised version of the Holmes & Rahe Scale for Social Readjustment and a Likert Method of Summated Ratings. Results showed that collectivists perceived to be experiencing more stress than individualists. Other significant factors, such as level of acculturation, were examined. Collectivists find it more difficult to adjust to the United States, an individualist culture, because they do not interact easily with strangers and they are not used to unstructured rules for social behavior. Interventions were suggested to ease the adjustment of students from collectivist cultures studying in the United States.

Introduction

There has been a marked increase in the number of international students entering the United States since World War II. In 1948, for example, the number of students doubled from a count of 10,000 in 1930 (Miller & Harwell, 1983). Rentz (1987) reported that in 1985, more than 343,777 foreign students were studying in the United States. Currently, there are approximately 2,500 international students studying at the University of Illinois, and the number is expected to increase (OISA, personal communication, 4/25/89).

Internationals face considerable stress, some of which is caused by communication barriers, a strange environment, and a loss of their social support system. The World Health Organization Mental Health Division described the "uprooting disorder", a persistent disturbance of international students' normal "psychosocial, physiological, and cognitive functioning" (Zwingmann and Gunn, 1983). Stress affects all aspects of the international student's life; indeed, it has been connected through numerous studies to an individual's physical health and well-being.

Stress and Social Support

Cannon (1932) first studied the effects of environmental stressors, such as cold and lack of oxygen, on humans. Since then, research has shown that people respond differentially to environmental challenges depending on their personality, constitution, perception, and the context in which the stressor occurs (Zuckmann, 1976). In particular, Dohrenwend and Dohrenwend (1984) suggested that when people must behave or experience themselves in a way that is at odds with their basic view of the self or the world, they are likely to experience psychological distress. Hall's (1959) concept of culture states that basic views are unconsciously and consciously learned from people and from the environment. When there is a discrepancy in the way we experience the culturally determined self and our situation, we experience stress.

Social support plays a role in two areas of the stress-producing process, as described by Cohen and Wills (1985). First, support can attenuate or prevent a stress response through a person's perception that others can and will provide the necessary resources to ease upcoming harm. Secondly,

a good source of support may intervene between the experience of stress and the onset of a chronic health problem. "Support reduces or eliminates the stress reaction or directly influences physiological processes" (p. 312).

However, social ties were found to be distressing if an unfortunate event occurred in the lives of significant others (Kesser and McLead, 1984).

Riley and Eckenrode (1986) found similar negative effects on the individual due to social relations. They proposed that an undesirable life event often invokes the expectation that the significant other should be helped, just as he/she would provide help if the situation was reversed. In addition, "a negative life event happening to a network member may reduce the social support available to oneself" (p. 772).

Collectivism vs. Individualism

The impact of stress and the availability of support systems to international students may depend on their cultural orientation. Recent research has drawn attention to the importance of collectivism vs. individualism as a cultural dimension. A collectivist culture is characterized by persons placing the goals of an ingroup ahead of their personal goals. An ingroup is defined as "a set of people with whom one shares some attribute that contributes to one's positive social identity" (Triandis, Bontempo, Villareal, Asai, and Lucca, 1988, p. 324). An ingroup may be a family, band, tribe, or even a nation. Collectivists often subordinate their own goals to the goals of this particular group of people. In contrast, within individualistic cultures, people have many ingroups which they join or leave, in order to maximize their personal well-being, and usually, a person's personal goals come before ingroup goals (Triandis, et al, 1988).

Studies have found differences in values, self-perception, and behaviors related to the dimension of collectivism vs. individualism (See Appendix A).

For example, collectivism results in collective coping (Kashima & Triandis, 1986), or an interdependence, which makes it easier for the individual to cope with unpleasant life events. Collectivist cultures have also been identified as having a high intolerance of ambiguity (Hofstede,

1980). In such countries, people do "what's right" rather than "what is pleasant to them" to a greater extent than in individualistic cultures. Collectivists then, are used to structured behavior based on set rules or social norms developed by the ingroup; whereas within individualist cultures, behavior depends on the likes and dislikes of each individual

Idiocentrism vs. Allocentrism

Triandis, et al. (1988), conducted studies which dealt with the psychological level of this cultural dimension; they used the terms "idiocentrism" vs. "allocentrism" to correspond to individualism vs. collectivism at the cultural level. Within any particular culture, whether it be identified as collectivist or individualist, both allocentric and idiocentric persons exist. To measure a person's degree of idiocentrism, Triandis, et al., (1985) extended the INDCOL scale (Hui, 1984). The scale was used to assess three hundred students studying at the University of Illinois. Factor analysis of sixty attitude items of the scale revealed three factors: Self-Reliance with Competition, Concern for Ingroup, and Distance form Ingroups. A higher order factor analysis revealed that the most important aspect of idiocentrism within the United States was the Subordination of Ingroup Goals to Personal Goals. Item analyses with data from 15 samples world-wide, resulted in 21 items (Triandis, et al., 1986). Appendix B lists the twenty-one items used in the present study.

Another study collected data from Puerto Rico (Triandis, et al., 1985). The results replicated previous findings that allocentrics perceive more and better quality of social support than idiocentrics. The results also indicated that idiocentrics reported more loneliness. Thus, it seems that on the cultural level, as well as on the psychological level, collectivists allocentrics efficiently use support systems, hence may be better-adjusted. Individualists/idiocentics, on the other hand, seem more vulnerable to loneliness.

We hypothesize that collectivists/allocentrics will find it more difficult to adjust to the U.S. than individualists/idiocentrics because (a) the cultural distance between collectivist countries and the U.S. is larger than the cultural distance between individualist countries and the U.S., (b) the former are accustomed to receiving social supports which are difficult to obtain in a new environment where they

do not know many people, (c) the former are used to structured, rule-based behaviors which are not available in the U.S., because the U.S. is a pluralistic culture where different groups are allowed to "do their own thing", and can act in different ways. In addition, some international students are likely to miss their usual source of social support, so we expect that the international students will view unpleasant life events in the Unites States as a much greater source of stress, when compared with the same event in their home country. This difference may be more evident for collectivists than for individualists. In other words, we predict an interaction between collectivism and the perception of stress of a given event in the U.S. vs. own country.

The Holmes and Rahe Scale

An accurate assessment of perceived stress is necessary in order to explore these notions, and a culturally diverse sample of students requires an instrument that can reflect the special concerns of international students.

Recently, Hobfoll (1989) devised a Theory of Conservation of Resources concerning stress. The theory is based on the assumption that "people strive to retain, protect, and build resources and that what is threatening to them is the potential or actual loss of these valued resources" (p. 516). Stress occurs when there is (a) a threat of a net loss of resources (b) an actual net loss of resources, or (c) a lack of resource gain following the investment of resources. His theory regards life changes associated with positive life events as the building blocks of resources, not as sources of stress; this conflicts with Suls and Fletcher's (1985) view that both positive and negative life changes are predictive of illness.

The Holmes and Rahe Scale of Social Readjustment (1967) was based on the assumption that events requiring change in one's daily routine result in stress (Holmes and Rahe, 1967). The Holmes and Rahe method requires judges to determine how much life readjustment is required after each life event. The subjects are given an example, such as "marriage", labeled as having 50 stress units to serve as a common anchor. Subjects are asked to give points to each life event, between zero and 100. The mean of these judgments is taken as the stressfullness of each

event The scale has been described as a "kind of cultural expression of stressfullness" (Johnson and

Sarason, 1978, p. 371) It was, in fact, adapted to measure stress among the Chinese (Yanping and

Derson, 1986). In this latter study, the scale was modified to include relevant items to the Chinese

population "Only 26% (11) of the original life event items are the same as in the SRRQ, which is

based on events in American society" (p. 246) In the present study, the scale was adapted for

international students enrolled at the University of Illinois

Method

The Elicitation Procedure

The first step in our study was to identify stressful life events appropriate for international

students During the summer of 1989, international students studying at the University of Illinois, were

given an "Elicitation" questionnaire which asked them to list 20 unpleasant life events. Half of the

respondents were born in countries Hofstede (1980) identified as being collectivist and the other half

were members of individualistic cultures. The frequency, the amount of perceived personal control, the

duration, as well as the intensity, or seriousness, of each event, were rated using 6-pt Likert scales

Twenty-six surveys were returned, the unpleasant life events were then divided, according to topic area,

into the following 8 categories: spouse, self significant others, vocation/finance, lifestyle interruptions,

political/community affairs, health, and accidents/natural disasters Four items from each area were

chosen, for example, "Anxiety over social acceptance" was picked from the topic area dealing with

"self", whereas, "Grocery shopping in U.S." was chosen from the category of "lifestyle interruptions" In

order to test the influence of context on the perception of unpleasant life events, 7 items specified that

the same event occurred in the home country (i.e "Making friends in home country" was listed

independently from "Making American friends") A total of 33 events were selected, using this

procedure.

In order to identify items that were ambiguous, "double-barreled", factual, and those likely to be

endorsed by all, a new sample of international students rated the same 33 events. The subjects were

asked to judge how stressful each event was in their lives, using a 9-pt categorical scale with the

anchors of: 9=Extremely stressful, 5=Moderately stressful, and 1=Not stressful at all. For each event, the subjects were asked to consider the frequency, sense of personal control, and duration of each event ("Intensity of event" was omitted due to obvious lack of comprehension found in the "Elicitation" questionnaire) Forty-three surveys were returned, and the interquartile ranges (IQR) of each event were calculated. The twenty items with smallest IQR ;, as well as the 7 items specifying the context of the unpleasant life event, were selected for the final questionnaire. Thus the final questionnaire contained a list of 27 unpleasant life events (See Tables 1 and 2).

The Study

Subjects. Approximately 600 international students arrived at the University of Illinois in early August of 1989. During orientation week, approximately 300 surveys were randomly distributed to these students, and 90 of these were completed. Sixty-five additional surveys were collected two months later, through the cooperation of various international organizations on campus.

The mean age of the 96 male and 53 female respondents was 27 years. The mode for "Time spent in U.S." was one week and the median was three months. The respondents came from 38 different countries, 17 of which were identified according to Hofstede's classification of collectivist vs individualist cultures (1980). See Appendix C for the list of classified countries and the number of subjects identified from each culture.

Measures. The questionnaire included two methods of measuring perceived stress. The first method was modeled after the Rahe & Holmes scale for unpleasant life events (1967). The method of direct estimation asked subjects to assign the appropriate number of stress units they felt corresponded to each of the 27 events. They were given a common anchor of "Homesickness" with a corresponding stress value of 50 units.

The second method was Likert's Method of Summated Ratings. Subjects were asked to judge the same events on a nine point categorical scale with the following response anchors: 9=Extremely stressful, 5=Moderately stressful, and 1=Not stressful at all. The methods were presented in a counterbalanced manner, with the method of direct estimation appearing first on one-half of the

questionnaires, and Likert method on the other half. In addition, the events were randomly presented on four separate forms.

The psychological level of individualism vs. collectivism was measured by the 21 items previously mentioned (See Appendix B). American emic items, such a "To be superior, a man must stand alone", and etic items, such as "It is foolish to try to preserve resources for future generations" (Triandis, et al., 1988, p. 330) were included in the 21-item Likert scale. High scores indicated a high level of idiocentrism.

Intolerance of ambiguity was associated in past studies with similar attributes on both the cultural and psychological levels. Budner (1962) defined it as an individual's "predisposition to generate abstract solutions to problems." He developed a scale of 16 items with converging factors, presented in a 6-pt. Likert format. Intolerance can be measured via disagreement with statements such as "A good teacher is one who makes you wonder about your way of looking at things...", and "Often the most interesting and stimulating people are those who don't mind being different and original...". Subjects were asked to mark one of the possible six responses ranging from <u>Strongly agree</u> to <u>Strongly disagree</u> listed after each statement. High scores indicated a high intolerance for ambiguity.

Direct questions were included to asses each respondents' present mood, level of acculturation, time zone adjustment, and sense of physical health.

At least four questions were presented in 6-pt Likert format to assess each variable. High negative mood, high level of acculturation, high difficulty in time adjustment, and a high sense of good physical health corresponded to high scores on their respective scales.

Results

Reliability of Measurements

There was sufficient variation in frequency and high interitem reliabilities for all the items of the two unpleasant life events scales, except for the anchor, "Homesickness" on the Holmes & Rahe scale. Thus, this item was omitted. The range for Rahe's 26 items was 27 to 1574, with a mean=513 and a s.d.=370. All 27 Likert items were used in analyses, and the resulting range was 21 to 156, the mean=78, and s.d.=33. Coefficient alpha was high for both the Rahe (94) and Likert (90) stress scales.

Due to the heterogeneity of the item pool of the collectivism items and the Intolerance of Ambiguity items, alphas were correspondingly low (alpha= 42 an alpha= 57, respectively). Individualists scored in the upper 25% of the range, n=39, while collectivists scored in the lower 25% of range, n=41. The range was 62 to 147, with a mean=110, and s.d.=17.5. For the Intolerance of Ambiguity scale, the range was 28 to 67, the mean=46, and s.d.=7.9. On this scale, persons scoring in the upper 25% of the scale, n=23, were defined as having a high intolerance of ambiguity, whereas persons with low intolerance scored in the lower 25% of the scale, n=23.

The first set of analyses was designed to check the reliability and validity of Hofstede's classification (1=individualists, 2=collectivists). The classification correlated with the individualism 21-item scale, r= -.21 (p<.05). Thus, Hofstede's collectivists corresponded to respondents with lower scores on the individualism scale. There was a significant difference in scale means. Individualists=115 and Collectivists=108 (p<.05), providing further convergent validity. The cultural classification also correlated with Budner's Intolerance scale, r=.30 (p<.01), showing consistency with past findings that collectivists have a higher intolerance for ambiguity and thus, providing support for hypothesis (c).

The second set of analyses was performed to check the reliability of the revised Holmes & Rahe Scale for Social Readjustment. The Holmes & Rahe method correlated, r=.71 (p<.001), with the Likert method of measuring the perception of stress. Individual items were ranked according to means for both scales, and many of the items on both scales appeared in the same or approximately the same

rank (See Tables 1 and 2).

Insert Tables 1 and 2 about here

Factor analyses were performed to examine the dimensionality of the two stress scales. The results for the Holmes & Rahe scale analyses are shown in Table 3; the Table shows the factors, factor loadings, and percent variance accounted by each factor. The factors were Anxiety due to Social Interaction and Anxiety due to Marketing, and the two factors explained 47.6 percent of the variance.

Insert Table 3 about here

The results for the Likert scale factor analyses are shown in Table 4; the Table shows the factors, factor loadings, and percent variance accounted by each factor. The four factors were identified as Purchasing, or traditional customary behaviors. Making friends. School relations, and Family relations. Altogether the factors explained 47.9% of the variance.

Insert Table 4 about here

Testing for Cultural Differences

In order to examine differences in the perception of stress according to the cultural dimension, t-tests were performed. The means obtained from the summed scores for the two stress measures did not significantly differ according to Hofstede's classification of collectivists and individualists. However, t-tests were performed for each unpleasant life event, and six items were perceived as significantly more stressful by the collectivists on both methods of measurement. Two additional items were significant for just the Likert method (See Table 5). Only for one event did individualists perceive more stress than collectivists; the event was labeled "Conflict with spouse." This analyses provided support

for hypotheses (a) and (b).

Insert Table 5 about here

In order to ascertain whether the collectivists were merely using a response set, we checked to see if the nonsignificant events were rated systematically in the same direction. In other words, collectivists seemed to perceive more stress than the individualists in many of the items, but this could be due to their tendency to use the higher end of the Holmes & Rahe Likert scales. Ten of the 20 nonsignificant items from the Homes & Rahe scale were ranked higher for the individualists a 50 50 ratio, so it is safe to assume that a response set was not present. However, only 14 of Likert's 37 nonsignificant life events were rated higher by the individualists. the possibility that a response set is present does exist and so the Likert item results were interpreted more carefully, using $p < .03$.

Cultural Differences and Context

To determine whether there was an interaction between context of event and perceived stress, matched t-tests were performed. Seven items described the event as occuring in both the home country and the United States. Overall, the respondents perceived significantly more stress when the event occured in the United States for six of the seven events (See Table 6). However, when comparing the mean difference of perceived stress according to context of the event, i.e., the difference of mean perceived stress of event in home country from the mean perceived stress of the event in U.S., only two of the events were perceived significantly more stressful by the collectivists than by the individualists. The two events were labeled "Making American friends" ($p < 005$) and "Finding a job in the U.S." ($p < .0001$). We interpret the nonsignificant findings as a positive sign, evidence that both individualists and collectivists understood the task at hand and interpreted the events the same way. For example, "Raising children in U.S." was stressful to everyone, regardless of cultural differences.

Insert Table 6 about here

Other Findings

Analyses were performed with the "present mood", "level of acculturation", and "present health" scales. Briefly, the negative present mood scale had a range of scores from 5 to 34 (low negative to high negative); the mean=15, median=14, s.d.=6.8, and coefficient alpha=.70.

The level of acculturation scale had a range of scores from 10 to 28 (low acculturation to high acculturation); the mean=20, median=17, s.d.=4.3, and coefficient alpha= 84.

The difficulty in time zone adjustment, or jetlag, scale had a range from 8 to 22 (low amount of jetlag to high amount of jetlag), the mean=16.5, median=17, s.d.=2.7, and coefficient alpha= 74.

Finally, the "sense of good physical health" scale had a range from 5 to 24 (low sense of + health to high sense of + health); the mean=18, the median=19, s.d.=4.4, and coefficient alpha=.84.

Pearson correlations were performed to check for significant correlations of the scales with the Holmes & Rahe/Likert stress measures. Negative mood correlated with Holmes & Rahe, r=.19 (p< .01), and with Likert, r=.29 (p< .0001). A high level of acculturation correlated with Holmes & Rahe, r=-.20 (p<.01), and with Likert, r=-.28 (p<.0001). In addition, a negative sense of present health correlated with Likert's scale of perceived stress, r=-.19 (p<.01). Thus, the more negative the respondents felt at the time they answered the questionnaire, the higher they scored on the perception of stress scales; in addition, respondents perceived more stress when they felt less acculturated to U.S. culture.

Additional t-tests showed a difference in the mean scores of the collectivists (x=19.2) and the individualists (x=21.8) on the "level of acculturation" scale, p<.001. Once again, the individualists acculturated more rapidly to an individualist culture. "Sense of positive health" had similar results, with Hofstede's individualists (x=19.7) scoring higher than the collectivists (x=16.7), p<.0001. Thus, individualists had a better sense of good physical health than collectivists.

Discussion

The increasing number of international students in the United States has generated concern regarding the deleterious effects of stress on an individual's psychological and physical well-being. The concern centers around how these students adjust to stressors found within their new environment. Foreign students must face communication barriers, a strange environment, and a loss of social network. Previous research has shown that a person's response to environmental stressors is influenced by personality, constitution, perception, and context of the stressor (Zuckmann, 1976). In addition, the availability of support systems seems to reduce a person's experience of psychological stress.

The impact of stress and the availability of support systems to international students may depend on their cultural orientation. Recent research has identified the importance of collectivism vs. individualism as a cultural dimension. Behaviors, values, and attitudes have been systematically linked with this cultural dimension (Triandis. et al., 1988).

Collectivists subordinate personal goals for the goals of an ingroup, a group "best defined by common-fate" (Triandis, McCusker, and Hui, in press). In individualist cultures, personal goals have primacy over ingroup goals. Within a collectivist culture, the ingroup regulates rule-based behavior, whereas behavior within individualist cultures is mainly influenced by the individual's subjective likes and dislikes.

Recent studies have shown that collectivists perceive more and a higher quality of social support than individualists. Collectivists are relatively more interdependent, thus it is easier for them to cope with unpleasant life changes. Individualists, on the other hand, report more loneliness (Triandis, et al., 1985). However, this research was done with participants within their native cultures, rather than participants who have left their culture and are in a new context.

The current research was concerned with the relation between international students' perceived stress and the individualism/collectivism dimension. We hypothesized that international students identified as collectivists studying in the United States (an individualist culture) would perceive more

stress than students identified as individualists. We also predicted that unpleasant life events would have a greater effect on the collectivists because (a) the cultural differences between the U.S. and their countries of origin would be greater for collectivists than individualists, (b) the former group lacks the social support which they previously depended on and finds it more difficult to meet new people than the individualists, and (c) collectivists are used to structured, rule-based behaviors, which are inconsistent with the United States' culture, where people vary behaviors according to attitudes and likes/dislikes. We also predicted that for all participants there are some events that are more stressful in the U.S. than in their home country. Based on the above factors, we predicted an interaction for the increased stress level and individualism/collectivism. The increased perceived stress should be greater for collectivists than it is for individualists.

General Perception of Stress

Collectivists scored significantly higher on six of the unpleasant life events than the individualists on both scales of stress. This gave us additional confidence in the reliability of the findings. Two additional events were significantly higher for one scale. For the most part, these events dealt with different types of social interaction. For example, collectivists appeared to perceive greater stress in the following three events: "Making American friends" "Anxiety over social acceptance", and "Participating at parties". Consistent with our hypothesis, social events generate more stress because (1) collectivists are interacting in a vastly different culture, where attitudes and values are dissimilar, and (2) friends are not easily made in collectivist cultures; deeper, long-lasting friendships are the norm which contrasts with the ephemeral and superficial friendships found within individualist cultures.

Although past research (Triandis, et al., 1985) indicates that individualists perceive more loneliness, the reverse was true in the current study. In the previous study people lived in their normal environment, whereas in this study, they had moved to a new environment. When individualists and collectivists are uprooted from their native countries and placed within an individualist culture, such as the United States, collectivists perceive more loneliness. Once again, this may be due to the loss of the stable ingroup and the inability or aversion to acquiring new friends.

"Working with other people in lab" as well as "Conversing with neighbors in the U.S." were two additional sources of greater perceived stress for the collectivists. This is not surprising when we recall that collectivists treat members of the ingroup very differently from non-ingroup members. They are less friendly to outsiders, at times may even regard them with suspicion and hostility. In contrast, individualists treat ingroup members and non-members fairly similarly. Their ingroups are constantly changing; there is often the possibility that each person they interact with may shortly become a member of the ingroup. Neighbors and new co-workers are regarded as threatening by collectivists, while regarded as potential sources of support by individualists.

The collectivists perceived more stress than the individualists in two events: "Communicating/listening in class" and "Safety at night in U.S." We do not interpret these findings as important, as there may be a confound of English-speaking ability, or the result of a response set.

Finally, only one event was a greater source of perceived stress for the individualists. The item was "Conflict with spouse". Spouses in collectivist cultures strive for cohesive, peaceful family existence, moreso than individualists. In addition, the spouse-spouse relationship is more important to people in individualist than in collectivist cultures. When people are under stress because they live in another culture, they are likely to feel the most stress in their most important relationships.

Effect of Context on Stress

For seven items, the event was repeated for the home country, in addition to the United States. Overall, both the collectivists and individualists perceived a significantly greater amount of stress when the event occured in the United States for six of the seven events; this finding is consistent with our hypothesis, as the events taking place in the new environment were more stressful to international students than if the same event occurred in their respective home countries. However, when comparing the mean difference of perceived stress according to context of the event, i.e., the difference of mean perceived stress of event in home country from the mean perceived stress of the event in U.S., only two of the events were perceived significantly more stressful by the collectivists than by the individualists. The two events were labeled "Making American friends" and "Finding a job in the U.S."

The large number of nonsignificant findings is evidence that both individualists and collectivists understood the task at hand and interpreted the events the same way. This is methodologically most desirable in cross-cultural studies, where similarities are needed in order to interpret differences (Campbell, 1964). For example. "Raising children in U.S." was stressful to everyone, regardless of cultural differences.

Other Findings

Further results supported our proposal (c) which stated that collectivists would perceive more stress because they are not used to the relaxed rules for social behavior. In particular, scores on Budner's "Intolerance of ambiguity" scale correlated with collectivism. This is consistent with Hofstede's findings that collectivists have a higher intolerance for ambiguity (1980).

The modal "time spent in U.S" for the international students was one week. Therefore, other variables might also influence the students' perception of stress. For example. the amount of time zone adjustment required during the first week the international students live in the United States varies greatly and could effect initial perceptions of unpleasant life events.

"Negative mood" correlated inversely with "positive sense of health". as well as with "level of acculturation". Logically, if a subject does not feel physically healthy. we can expect that person to feel negative sentiment. Likewise, if the respondent feels estranged from an exotic environment, i.e. having a low level of acculturation, he/she will not feel comfortable and content. These factors must be viewed in light of the fact that "negative mood" correlated positively with both stress measurements. As a result, we should also consider the respondent's sense of present mood as an important factor interacting with the perception of stress.

Other findings related to the respondent's level of acculturation. Level of acculturation correlated with "positive sense of health". providing evidence that respondent's who feel more adjusted to U.S. culture feel physically better. Level of acculturation was inversely correlated with both stress measures; thus. as the level of acculturation increased. the perception of stress noticeably decreased.

Finally, individualists appeared to be more acculturated than collectivists; individualists scored significantly higher than collectivists on the scale when identified according to Hofstede's continuum of collectivist-individualist cultures and according to the 21-item collectivist scale. This finding further supported hypothesis (c): those persons with a greater degree of acculturation have a greater comprehension of the ambiguous rules of behavior typically found in the United States.

Finally, there was an observed inverse correlation between "positive sense of health" and the Likert stress scale. Consistent with past findings, there seems to be a relation between stress and physical health. In addition, individualists perceived themselves as physically healthier than collectivists.

In summary, the cultural dimension of collectivism vs individualism seems to be a relevant factor predicting how international students will adjust to United States culture. However, the present mood, level of acculturation, and sense of good physical health must be considered as well.

Methodological Findings

One goal of this research was to provide construct validity for the individualism/collectivism measure developed by Triandis, et al., (1985). This was done by comparing scores on the Triandis, et al. (1985) measure with previous results obtained by Hofstede (1980). As expected, respondents classified as Individualists using Hofstede's continuum of individualist-collectivist cultures, scored significantly higher on the 21-item measure. The convergent validity allowed us to use Hofstede's classification for further analyses.

Also, this study attempted to measure perceived levels of stress using two revised methods. The significant correlation between the Holmes & Rahe and Likert stress measurements, as well as high coefficient alphas, provided convergent validity for the revised scales.

Implications of Results

We all suffer from stress. It is hard to imagine the magnitude of stress international students feel when living in an exotic culture. It is becoming more important to understand cultural effects on people as we increasingly interact with individuals from all over the world. We want to understand

foreigners living within the United States, just as we want to be culturally understood when living abroad.

The present study attempted to understand cultural effects on a person's perception of stress and subsequent adaptation to the U.S., an individualist culture. The results suggest that information related to the cultural dimension of collectivism-individualism may be applied to impede the deleterious effects of stress on international students. First, we must identify each student's native country according to Hofstede's collectivist-individualist continuum. Second, we must understand the implications of this dimension: collectivists will perceive more stress than individualists; most stressful events will relate to social interactions with non-significant others, collectivists lack the necessary social skills which will enable them to easily create a new social support system. Individualists, on the other hand, will perceive more stress with their spouses; initially, they will adapt faster to the United States, but may later be identified as having a greater perceived sense of loneliness. Finally, we must see the clinical applications for such knowledge. Universities hosting international students can set up intervention programs for collectivists and individualists. Concurrent with orientation week, collectivists should be singled out and given additional cultural information and material concerning available support groups and existing ethnic organizations. Counseling centers should work with the leaders of such organizations to provide workshops on topics such as "Understanding Americans", "Acquiring new friends", "Finding support groups", and "Coping with stress and anger". This list is not exhaustive, but it is a start in the right direction, to help the ever-growing population of international students adapt to campus life.

Future Research

It would be interesting to see how the amount of time spent in the United States effects the perception of stress taking the collectivist-individualist dimension into account. Over time, collectivists may successfully form new ingroups, regaining their lost support. Individualists should then perceive more stress, related to unpleasant life events.

Although the current study indicates a relationship between the collectivist-individualist cultural

dimension and students' perceptions of stress, we mentioned that there are other factors as well. Future research should study the interaction of present mood, level of acculturation, and sense of good physical health with the perception of stress, in order to develop a fuller comprehension of all the dynamics involved.

In addition, it would be interesting to evaluate international students within a collectivist culture, e.g., students living in Japan. The current study indicates that the reverse should be true for individualists and collectivists studying within such a culture. As was found among collectivists studying in the United States, we would predict that individualists studying in a collectivist culture should perceive more stress than their collectivist counterparts

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Table 1: Rank Order of 27 Unpleasant Life Events According to Means

Holmes & Rahe:

		Means
01.*	Raising children in America.	50.06
02.*	Looking for a job in the U.S.	45.50
03.	Conflict with spouse.	41.10
04.*	Raising children in home country.	37.18
05.*	Looking for a job in home country.	35.08
06.	Fire	33.63
07.	Loneliness	33.47
08.*	Safety at night, U.S.	32.50
09.	No time to exercise.	29.42
10.*	Making American friends.	28.00
11.	Communicating/listening in class.	27.15
12.	Anxiety over social acceptance.	27.03
13.	Lack of cultural activities.	26.45
14.	Participation at parties.	25.90
15.	Forms to fill out.	24.46
16.	Working with other people in lab.	23.12
17.	Answering phone calls in English.	22.47
18.*	Buying clothes, U.S.	22.39
19.*	Safety at night in home country.	22.10
20.*	Conversing with neighbors, U.S.	22.03
21.*	Making friends in home country.	18.62
22.*	Buying clothes in home country.	18.29

Table 1 Cont'd.

23.*	Grocery shopping in the U.S.	18.10
24.	Maintaining religious beliefs.	17.63
25.*	Grocery shopping in home country.	16.39
26.*	Conversing w/neighbors,home country	16 35

*Items which tested context of event.

Table 2: Rank order of 27 Unpleasant Life Events According to Means

Likert Method:

		Means
01.	Raising children, America.	5.00
02.	Looking for a job, U.C	4.72
03.	Safety at night, U.S.	4.44
04.	Loneliness	4.37
05.	Homesickness	4.36
06.	Looking for a job, home country.	4.35
07.	Conflict with spouse.	4.31
08.	Fire	3.95
09.	No time to exercise.	3.88
10.	Anxiety over social acceptance.	3.79
11.	Communicating/listening in class.	3.72
12.	Lack of cultural activities.	3.69
13	Making American friends.	3.57
14.	Participation at parties.	3.41
15.	Forms to fill out.	3.39
16.	Safety at night, home country.	3.02
17.	Working with other people in lab.	3.02
18.	Answering phone in English.	3.00
19.	Conversing with neighbors, U.S.	2.94
20.	Buying clothes, U.S.	2.90
21.	Raising children, home country.	2.85
22.	Maintaining religious beliefs.	2.70

Table 2 Cont'd.

23.	Grocery shopping, U.S.	2.69
24.	Making friends, home country	2.55
25	Buying clothes, home country.	2.49
26.	Grocery shopping, home country.	2.27
27.	Conversing with neighbors, home country	2.24

Table 3: Factors, Factor Loadings, and Percent Variance for Rahe Scale

Anxiety due to social interaction

Item:	Loadings:
"Conversing with neighbors, H.C."	.84
"Participating at parties"	.77
"Answering phone calls in English"	.71
"Communicating/listening in class"	.62
"Making American friends"	.60
"Working with other people in lab"	.48
"Anxiety over social acceptance"	.46

Anxiety due to marketing

Item:	Loadings
"Grocery shopping, H.C."	.70
"Buying clothes, H.C."	.68
"Making friends in H.C."	.57
"Grocery shopping, U.S."	.48

Percent variance accounted for by Factor 1 = 37.8

Percent variance accounted for by Factor 2 = 6.6

Total % Variance = 44.4

28

Table 4: Factors. Factor Loadings, and % Variance for Likert Scale

_____

Purchasing, or traditional customary behaviors

Items:	Loadings:
"Grocery shopping in U.S."	.77
"Grocery shopping in home country"	.70
"Buying clothes in home country"	.69
"Buying clothes in U S "	.62
"Forms to fill out"	.55
"Maintaining religious beliefs"	.53

Making friends

Items:	Loadings:
"Making American friends"	.73
"Conversing with neighbors in U.S."	.72
"Participating at parties"	.59

School Relations

Items:	Loadings:
"Communicating/listening in class"	.60
"Answering phone calls in English"	.59
"Working with other people in lab"	.52

Table 4 Cont'd.

Family Relations

Items.	Loadings
"Conflict with spouse"	.60
"Raising children in America"	.58
"Raising children in home country"	.48

Percent variance accounted for by Factor 1. 23.7

Percent variance accounted for by Factor 2. 7.7

Percent variance accounted for by Factor 3. 5.5

Percent variance accounted for by Factor 4. 3.6

Total Percent Variance = 40.6

Table 5: Significant Unpleasant Life Events

(n=116)

Scale Format:		Event
Likert:	**Holmes & Rahe:**	
p< 003	p< 031	Making American friends
p<.000	p<.003	Communicating/Listening in class
p<.027	p<.014	Anxiety over social acceptance
p<.028	ns	Loneliness
p< 011	p<.005	Working with other people in lab
p<.017	ns	*Conflict with spouse
p<.043	p< 004	Conversing with neighbors in U S
p<.000	p<.015	Participating at parties
p<.022	ns	Safety in home country

*The only unpleasant life event in which Individualists perceived a significantly greater amount of stress than the Collectivists.

ns=not significant

Table 6: Significant Unpleasant Life Events with Context

Scale Format:		Event:
Likert:	Holmes & Rahe:	
p<.000	p<.000	Making American friends > Making friends, H.C.
ns	p<.014	Finding job, U.S. > Finding job, H.C.
p<.001	p<.001	Conversing w/neighbors, U.S. > Conversing w/neighbors, H.C.
p<.000	p<.000	Raising children, U.S > Raising children, H.C.
p<.001	p<.039	Buying clothes, U.S. > Buying clothes, H.C.
p<.006	ns	Grocery shopping, U.S. > Grocery shopping, H.C.

H.C.=home country

ns=not significant

Appendix A: The Dimension of Collectivism vs. Individualism

(Triandis, et al. 1988, p. 330)

	Collectivists	Individualists
Social Structure:		
	Few stable ingroups.	Many ingroups.
Values:		
	Family/national security.	Achievement.
	Cooperation/helpfulness	Competition ambition.
	Freedom/equality.	Independence self-direction
	Obedience/conformity	Creativity.
	Self-control.	Pleasure
	Politeness.	Happiness
		Social recognition
	Ingroup goals over individual goals.	Individual goals over ingroup goals
	Vertical relationships (e.g., boss/employee, mom/daughter) are more important.	Horizontal relationships (e.g. husband/wife) are more important.
Self-Perception:		
	Use demographic terms, e.g., "I am a Chinese citizen".	Use descriptive traits, e.g., "I am intelligent".

Appendix A. Cont'd.

Def. of self-reliance	Def of self reliance:
"I am not a burden to the ingroup."	"I can do my own thing."
View self as an appendage. or extension, of ingroup	View self as a separate and distinct entity

Behaviors.

Collective coping	Individual coping.
Individual stays with a demanding ingroup.	Individual decides to stay or drop a demanding ingroup
Frequent exchange of particularistic goods, e.g., love and service (Foa and Foa, 1974).	Frequent exchange of universalistic goods, e.g. money and objects.
Nonmembers treated much differently than members.	Nonmembers and members treated similarly.

Appendix B   Items that measured aspects of individualism & collectivism.

(Triandis et al. 1986)

1.   One should live one's life independently of others as much as possible   (I)

2.   I would help. within my means. if a relative told me that he(she) is in   (C)

     financial difficulty. (In this questionnaire. "relatives" refer to

     those relatives who are not your next-of-kin. Uncles. cousins. grand-

     parents fall into this category.)

3   I would rather struggle through a personal problem by myself than   (I)

     discuss it with my friends

4.   I like to live close to my good friends.   (C)

5.   The most important thing in my life is to make myself happy   (I)

6.   It is important to me that I perform better than others on a task.   (I)

7.   I tend to do my own things. and most people in my family do the same   (I)

8.   Aging parents should live at home with their parents until they get   (C)

     married

9.   What I look for in a job is a friendly group of co-workers   (C)

10. Children should live at home with their parents until they get married   (C)

11. One does better working alone than in a group   (I)

12. Individuals should be judged on their own merits. not on the company   (I)

     they keep.

13. When faced with a difficult personal problem. it is better to decide   (I)

     what to do yourself. rather than follow the advice of others.

14. It doesn't matter to me how my country is viewed in the eyes of other   (I)

     nations.

15.   I enjoy meeting and talking to my neighbors everyday.   (C)

16.   I can count on my relatives for help if I find myself in any kind of   (C)

      trouble.

17.   What happens to me is my own doing.   (I)

18.   If the group is slowing me down, it is better to leave it and work   (I)

      alone.

19.* Even if the child won the Nobel prize, the parents should not feel   (I)

      honored in any way.

20.* Children should not feel honored even if the father were highly praised   (I)

      and given an award by a government official for his contribution and

      service to the community.

21.   In most cases, to cooperate with someone whose ability is lower than   (I)

      oneself is not as desirable as doing the thing on one's own.

*Items are reversed.

Appendix C: Holstede's Classification of Country of Origin.

Number of Respondents from that Country

Collectivists	Individualists
Brazil= 5	Australia = 13
China = 14	Austria = 9
Colombia = 4	Belgium = 4
India = 7	Denmark = 2
Indonesia = 4	England = 3
Japan = 5	France = 5
Korea = 14	Germany = 6
Malaysia = 3	Greece = 9
Taiwan = 9	
Total = 65	Total = 51