

## Stress Coping of Chinese International Students in Face of COVID 19 Pandemic: Cultural Characteristics

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**Abstract:** The purpose of this study was to investigate the stress and coping strategy of Chinese International Students (CISs) during the epidemic, and to explore the relationship between identification with Chinese cultural beliefs and coping strategies, positive experience, negative emotion and need for psychological support. Two hundred and thirty CISs participated in the study by filling out a series of questionnaires that we designed. The series of questionnaires contained six scales: Pandemic Related Stress (PRS), Identification with Chinese Cultural Beliefs (ICCB), Stress Coping Strategy (SCS), Positive Experience (PE) and Negative Emotion (NE) and Need for Psychological Support (NPS). The results showed that CISs experienced an above moderate level of direct and indirect pandemic related stress. To cope with the stress, participants valued active coping and making self-adjustment. The regression analysis shows ICCB could positively predict coping strategy and positive experience, and negatively predict negative emotions. ICCB is also positively related to the need for psychological support. That is to say, the identification with Chinese culture beliefs could help CISs use positive strategies to cope with the epidemic and more likely to have positive experience and reduce negative emotions. We believe that the cultural identity and cultural values of Chinese students studying abroad may have helped them to effectively choose their responses and strategies in the face of the serious challenges of the COVID-19 pandemic.

**Keywords:** Pandemic related stress; Chinese cultural beliefs; coping strategy; positive experience; negative emotion; need for psychological support

### 1 Introduction

The pandemic of COVID 19 has confronted humankind with unprecedented threats and tested humans' mental strength in an extraordinary way. Learning how to help individuals and communities manage stress and maintain health, including psychological wellbeing, during this pandemic has drawn significant attention from psychological science and helping professions [1]. It should be noted that although COVID 19 virus does not differentiate people, the pandemic, like any human or natural disasters, exerts differential



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challenges onto people depending on their demographics, geographical locations, social and cultural status [2] and individual psychological strengths and vulnerabilities [3,4]. There are social, cultural, systemic as well as individual factors that contribute to the uneven distribution of challenges as well as stress coping in meeting the challenges.

In this study, we were interested in the experience of one special population, Chinese International Students (CISs) who were studying abroad during the pandemic. We explored how CISs experienced this crisis situation and managed the pandemic related stress, with an emphasis on if and how their Chinese cultural beliefs had played any role in their stress coping, emotion wellbeing indicators such as positive experience and negative emotion, and the need for psychological support. We hope the study will yield information helpful for professional psychological services to provide effective support to this population during and after COVID 19.

### ***1.1 Stress and Stress Coping***

Stress is a natural response to negative events or crisis and can be viewed as a defensive mechanism [5], but if the stress is prolonged or severe effective stress coping is needed to prevent unwanted negative aftereffects and promote post-traumatic growth [6,7]. The psychological literature has offered various stress coping models to guide individuals and professionals to pursue successful coping for themselves and helping others [8]. These models range from those based on a cybernetic framework [9] to those promoting a positive psychological perspective [10]. In recent years, positive models seem to have become more and more valued and accepted.

Positive psychology offers a powerful proposition that positive emotions broaden “an individual’s momentary thought-action repertoire” and “discovery of novel and creative actions, ideas and social bonds, which in turn build that individual’s personal resources” [11]. Empirical evidence has supported this claim by showing that positive emotions trigger upward spirals toward emotional well-being [12], speed recovery from medical conditions [13], increase life satisfaction and build resilience [14]. In the current study, this theoretical principle guided our effort to explore and encourage Chinese International Students’ positive experiences in addition to learning about their stress and coping during the pandemic. Besides gathering data for our study, we also paid particular attention to making study participation a positive emotion generating experience for our CISs participants by assessing their positive experiences during the crisis.

### ***1.2 Chinese Cultural Characteristics of Stress Coping***

Culture shapes perceptions, beliefs and experiences, and individuals’ experience of stress and stress coping behavior in crisis are undoubtedly indicative of their cultural values and beliefs [15,16]. After growing up and spending the most formative years in China, it is expected that Chinese international students’ inherited Chinese cultural values would play a role in their response to COVID 19 crisis. This expectation is built on the recognition that there are “Chinese ways” of facing and managing crisis.

Confucianism profoundly influenced Chinese cultural values concerning stress and stress coping. It believes that setbacks and hardships are part of human experience and can make people and promote human growth. The purpose of Confucian coping is not to directly eliminate the stressor or the stress but to take the opportunity to develop one’s character, exercise one’s will, improve one’s ability and become prepared for future opportunities [17]. One Chinese characteristic is always viewing crisis as containing both danger/threat and opportunity. In fact, the term “crisis” in Chinese is 危机 (*wei ji*), composed of two characters. The first character 危 (*wei*) means danger and the second 机 (*ji*) means opportunity. It is believed that every crisis lies an opportunity, the bigger the danger the bigger the opportunity, and one should not waste any crisis. The thought about having opportunities while facing severe adversity can be comforting psychologically, at least making people see the possibility of good things coming out of the

bad or out of suffering. This perspective is gradually shared by other cultures and has led to research showing post traumatic growth is possible [18].

Dialectic thinking is highly valued in Chinese culture. Rooted in Daoist philosophy, dialecticism refers to a general tolerance for and expectation of contradiction, change, and balance [19]. There are three interrelated principles involved in dialecticism. The principle of change holds that the world is constantly changing and that people, events, and experiences are dynamic and changeable. The principle of contradiction asserts that everything in reality contains opposite elements that coexist simultaneously. A corollary of the principles of change and contradiction is the principle of holism, which claims that nothing in the cosmos is isolated and every element is interconnected with others. Research has shown that Chinese exhibited greater dialectical thinking when facing adversity than did Euro-Americans, and mediated the differences in emotional complexity between the two groups [20]. Chinese also showed desire to discover the good side in harsh conditions [19–21]. It appears that believing in the three principles of change, contradiction and holism may lead one to hope when in crisis or coping with life challenges.

Chinese culture also promotes forbearance coping, referring to minimization or concealment of problems/concerns in order to maintain social harmony and avoid imposing trouble or burden onto others [22]. Individuals are encouraged to sacrifice themselves, endure distress, and put others' needs first [23]. The willingness to forbear, even when suffering or being wronged, helps maintaining relationships and relationship harmony, which in a long run would worth the forbearance at the moment [24]. Thus, forbearance coping can be a quality that benefits healthy relationships during crisis.

### ***1.3 The Current Study***

To understand how Chinese International Students are coping with COVID 19 crisis, we conducted this study to assess their level of stress, stress coping strategies, positive experiences, negative emotions and need for psychological support. We particularly explored their level of identification with Chinese cultural beliefs related to stress and stress coping as a predictor of emotional and behavioral experience during the pandemic. We hope the study will contribute to the understanding of cultural characteristics of Chinese International Students' experience of the pandemic, and inform helping professions regarding how to offer them support when needed.

## **2 Method**

### ***2.1 Participants***

A total of 230 Chinese International Students (76 male and 154 female) from the United States, United Kingdom, Russia, Australia, Sweden, France, Germany, Canada, Denmark, Japan, and Holland voluntarily filled out our online survey. One hundred and twelve (48.7%) of participants currently reside in the United States. Regarding time living in host country, one hundred and thirteen (49.1%) participants reported less than one year, fifty-four (23.4%) one to three years, sixty-one (27.4%) more than three years. Sixty-eight (29.6%) participants were undergraduate students or lower degree and one hundred and sixty-two (70.4%) held a master's or higher degree.

### ***2.2 Instrument***

We took several steps to develop the survey instrument. First, we gathered information from several Chinese graduate students who shared their own experience and that of others they knew. Then we reviewed widely any relevant literature, including some about Chinese culture and values, stress and coping, positive psychology and so on. We also gather information from the social media regarding CISs' experience. We then drafted a large number of items that covered all the variables. In this process we paid particular attention to using the principles of positive psychology and Chinese cultural characteristics

in stress coping in writing items. Next, we conducted four rounds of review, critique, and revision of the items with the help of a group of six Chinese visiting scholars and four Chinese graduate students in a large state university in Midwest of the United States. As the result, six scales were developed to assess participants' stress level identification with Chinese cultural beliefs related to stress coping, stress copying strategies, positive experiences and negative emotions, and types of psychological health support needed. We used exploratory factor analysis to discover the dimensions of each questionnaire and determined the items of the scales. There were one to three subscales/dimensions nested in each of the scale, the validity structure of which was examined by confirmatory factor analysis (CFA).

### 2.2.1 *Pandemic Related Stress (PRS)*

PRS contains 8 items, covering three dimensions, namely, direct outbreak related stress (Direct Stress), indirect outbreak related stress (Indirect Stress), and general stress (General Stress). The three Direct Stress items are: concerns about medical insurance, cost, and treatment; fear of infection for self or family, and concerns about not having sufficient life necessities. The three Indirect Stress items are: disrupted life, education and travel plan; worries about friends and family overconcerned about them; worsened social-political environment due to xenophobia. The two General Stress items are: financial stress, and sleep disturbances, insomnia or other physical ailments. Participants' answers were recorded using a 5-point Likert scale, ranging from low (1) to high (5) levels of stress, with higher scores referring to higher levels of stress.

The CFA result supported the three-dimensional structure. ( $\chi^2(34) = 73.92, p < 0.001$ ; TLI = 0.92; CFI = 0.94; RMSEA = 0.07; SRMR = 0.04), and standardized factor loadings ranged from 0.63 to 0.91. The internal consistency of the scale was  $\alpha = 0.80$ .

### 2.2.2 *Identification with Chinese Cultural Beliefs (ICCB)*

ICCB is composed of 10 items reflecting Chinese beliefs related to stress copying, including "Things are constantly changing, just wait for opportunities" (事情是变化的, 在变化中等待转机); "For the unchangeable, accept it and let it go" (对于无法改变的事, 就接纳它, 顺其自然); "Act rather than complaining when being challenged" (与其抱怨, 不如行动); "Agreeing to disagreement with respect when having moral conflict" (对于价值观的冲突, 求同存异, 互相尊重); "Keeping the spirit of optimism during a difficult time" (要有苦中作乐的精神); "Helping the world after preserving one's own dignity" (穷则独善其身, 达则兼善天下); "Things will turn for the better regardless how bad they are" (否极泰来); "When crisis comes, accept it" (对待危机, 既来之则安之); "Despise enemies strategically but deal with them seriously" (战略上藐视敌人, 战术上重视敌人); "Fortune and misfortune always co-exist and the current pandemic is not absolutely a bad event." (福祸相依, 目前的疫情未必绝对是坏事). Participants' answers were recorded using a 5-point Likert scale, ranging from low (1) to high (5), with higher scores referring to higher endorsement of the cultural beliefs.

The CFA result supported ICCB as being single-dimensional ( $\chi^2(14) = 37.35, p < 0.001$ ; TLI = 0.89; CFI = 0.93; RMSEA = 0.09; SRMR = 0.04), and standardized factor loadings ranged from 0.62 to 0.80. The internal consistency of the scale was  $\alpha = 0.92$ .

### 2.2.3 *Stress Coping Strategy (SCS)*

SCS is composed of 8 items, covering two dimensions, namely, Actively Coping and Self Adjustment for thinking and behavior. The four Active Coping items are seeing self-protection as contribution to society; focusing on what one can control to avoid feeling powerless or helpless; viewing between-country cultural difference in anti-epidemic policies objectively; and deliberating attention to positive/encouraging information regarding the epidemic. The four Self Adjustment items are starting/increasing online learning, focusing more on exercise and health, noticing positive changes brought out by the epidemic (at individual or social level), and rethinking the true meaning of life. Participants' answers were recorded using a 5-point Likert scale, ranging from low (1) to high (5), with higher scores referring to higher utilization of the strategies.

The CFA result supported SCS having a single-dimensional structure ( $\chi^2(32) = 45.59, p < 0.01$ ; TLI = 0.93; CFI = 0.95; RMSEA = 0.04; SRMR = 0.04), and standardized factor loadings ranged from 0.65 to 0.90. The internal consistency of the scale was  $\alpha = 0.84$ .

#### 2.2.4 Positive Experience (PE)

For PE items, we did not use common positive emotion indicators such as happy, joy, or passion that reflect mostly individual feelings. Instead we used positive experiences that are more relational and context driven. The Positive Experience contains 12 items, covering 2 dimensions, Conscience and Virtues (CV) and Positive Feelings (PF). The 7 CV items are: more able to understand others, able to feel hopeful in crisis, caring about others more, being in touch with own conscience more, willing to sacrifice for the country or the public, persisting when feeling helpless, and having a chance to help others. The 5 PF items are: loving life more, feeling lucky, having more respect for life, feeling safe due to support from home country, and lowering satisfaction threshold for life. Participants' answers were recorded using a 7-point Likert scale, ranging from Not at All (1) to Very Much (7), with higher scores referring to higher levels of the positive experience.

The CFA result supported the two-dimensional structure of PE ( $\chi^2(53) = 141.69, p < 0.001$ ; TLI = 0.90; CFI = 0.91; RMSEA = 0.08; SRMR = 0.06), and standardized factor loadings ranged from 0.59 to 0.91. The internal consistency of the scale was  $\alpha = 0.93$ .

#### 2.2.5 Negative Emotion (NE)

The NE scale contains 12 items covering two emotions in two categories, Anxiety and Depression. The Anxiety items include feeling anxious, unsafe, scared, panic, angry, and discrimination. The Depression items include feeling lack of motivation, pessimistic, helpless, depressed, abandoned, and shameful. Participants' answers were recorded using a 7-point Likert scale, ranging from Not at All (1) to Very Much (7), with higher scores referring to higher levels of the negative emotion.

The CFA result supported the two-dimensional of NE ( $\chi^2(53) = 106.81, p < 0.001$ ; TLI = 0.94; CFI = 0.95; RMSEA = 0.06; SRMR = 0.05), and standardized factor loadings ranged from 0.50 to 0.94. The internal consistency of the scale was  $\alpha = 0.94$ .

#### 2.2.6 Need for Psychological Support (NPS)

NPS contains 9 items, covering two dimensions, Self-support and Social Support. Self-Support items include: trying to normalize life, taking care of others more; communicating with friends and family more; learning not to be distracted by the uncontrollable. Social Support items include: anonymous hotline counseling; support from justice and public opinions; care for other overseas Chinese from China; more positive information in social media; be reminded of one's cultural treasures. Participants were asked how they would rate these different types of support as needed and answers were recorded using a 5-point Likert scale, ranging from Not at All (1) to Very Much (5), with higher scores referring to higher agreement to the need for that type of psychological support.

The CFA result supported the two-dimensional of NPS ( $\chi^2(19) = 46.16, p < 0.001$ ; TLI = 0.90; CFI = 0.92; RMSEA = 0.08; SRMR = 0.05), and standardized factor loadings ranged from 0.63 to 0.82. The internal consistency of the scale was  $\alpha = 0.87$ . The internal consistency of the subscale of social support was  $\alpha = 0.78$  and the subscale of self-support was  $\alpha = 0.85$ .

### 2.3 Procedure

Participants were recruited to fill out the survey containing all scales through online means, including emailing international student organizations at college campuses, using social media such as *wechat* to reach groups of CISs, or getting help from college campus international student office to announce it on

relevant platforms. We also asked participants to forward the survey link to others they know (snowballing). The data were collected in a period of two weeks during early April of 2020.

### 3 Results

Descriptive analyses were performed for each of the six scales. Differences between and among participants per demographics (sex, education level and time living in host country) were tested by between group *t* test or *F* test. Results were presented below and in separate tables. A correlational analysis was performed among all major variables. Further, we explored the predictive role of the Pandemic Related Stress (PRS) and Identification with Chinese Cultural Beliefs (ICCB) in Stress Coping Strategy (SCS), and that role of PRS, ICCB and CSC in Positive Experience and Negative Emotion. We also explored whether PRS, ICCB, SCS, PE and NE would have any predictive role in Need for Psychological Support (NPS).

#### 3.1 Pandemic Related Stress

The degree to which Chinese International Students had experienced direct outbreak related stress (Direct Stress), indirect outbreak related stress (Indirect Stress), and daily life related stress (General Stress) is shown in Tab. 1. Based on a 5-point scale (3 means moderate level). the mean of the Indirect Stress is 3.93, Direct Stress 3.69, and General Stress 2.84. This shows that ICSs experienced more than moderate level of stress related to both indirect and direct stressors. The top indirect stressors include: having study and life plan disrupted, and experience stress knowing their parents and friends are worrying about them. They were also aware of the changes in the sociopolitical environment for Chinese people with increased discrimination. One direct stressor that caused above-average stress among ICSs was worrying about getting sick and about subsequent treatment and cost.

**Table 1:** Mean and SD of major variables

	Dimensions	<i>M</i>	<i>SD</i>
Pandemic Related Stress (PRS)	Direct Stress	3.69	0.95
	Indirect Stress	3.93	0.75
	General Stress	2.84	1.09
Identification with Chinese Cultural Beliefs (ICCB)	ICCB	3.84	0.80
Stress Coping Strategy (SCS)	Actively coping epidemic	3.95	0.76
	Self-adjustment	3.33	0.94
Positive Experience (PE)	Conscience and Virtue	6.21	1.24
	Positive Feeling	6.35	1.39
Negative Emotion (NE)	Anxiety	3.89	1.71
	Depression	3.02	1.68
Need for Psychological Support (NPS)	Self-support	4.22	0.76
	Social support	3.73	0.86

There was no significant difference revealed by *t*-tests in stress by gender or education level. But it was significant difference revealed by *F*-tests in stress by time living in host country ( $F(2, 230) = 6.28, p = 0.002 < 0.05$ ). The results of multiple comparisons found that those who lived overseas for one to 3 years ( $M = 3.85, SD = 0.09, n = 101$ ) felt more stress than those over three years ( $M = 3.46, SD = 0.08, n = 49$ ) and less than one year ( $M = 3.49, SD = 0.06, n = 54$ ).

### **3.2 Identification with Chinese Cultural Beliefs (ICCB) in Response to Crisis**

The degree to which participants identified with the facilitative roles of some Chinese cultural beliefs in response to crisis is presented in [Tab. 1](#). Based on a 5-point scale, the average score of ICSs' identification with the beliefs was 3.84, which indicated that they identified with the cultural beliefs as helpful in such a crisis. Among the 10 beliefs or values presented to them, they scored higher than 4 on the following: Things are constantly changing and just wait for opportunities; When facing the unchangeable, one should accept it and then let it go; It is better to act instead of complaining; and when facing value conflicts, one should agree to disagreement with respect. There was no found difference among groups by sex, education level, or time living in host country.

### **3.3 Stress Coping Strategy (SCS)**

As shown in [Tab. 1](#), ICSs score higher than the middle point of 3 on both Active Coping (Mean = 3.95) and Self-Adjustment (Mean = 3.33), both are positive coping strategies. The coping strategies endorsed the highest are: Seeing self-protection as contribution to society and focusing on what one can control to avoid feeling powerless or helpless about the epidemic.

There was no significant difference by gender or time in host country in SCS. The *t*-test result shows that graduate level participants with bachelor degree or higher ( $M = 4.76$ ,  $SD = 0.92$ ,  $n = 147$ ) reported more likely to use self-adjustment than those without a bachelor degree ( $M = 4.52$ ,  $SD = 1.06$ ,  $n = 52$ ),  $t(1, 197) = -2.06$ ,  $p = 0.045 < 0.05$ .

### **3.4 Positive Experience and Negative Emotion**

As shown in [Tab. 1](#), The means of two dimensions of Positive Experience, Conscience and Virtues (CV) and Positive Feelings (PF) are 6.35 and 6.21 respectively and those of the two dimensions of Negative Emotion are 3.89 for anxiety and 3.02 for depression respectively. These are scored on a 7-point scale. There was no difference between groups by sex, education level, or time living in host country found in either Positive Experience or Negative Emotion.

### **3.5 Need for Psychological Support**

As shown by [Tab. 1](#), the mean of the need for self-support is 4.22 (on the 5-point scale), indicating that the ICSs inclined to rely on self-support and learn to take good care of themselves and the people around them. The mean for social support is 3.73, with highest scores for support from China and public opinion support. As noted the demand for psychological hotline service is moderate (Mean = 3).

There was no difference between groups by sex, education level, or time living in host country.

## **3.6 Results of Correlational and Regression Analyses**

### **3.6.1 Correlations Among Major Variables**

The means, standard deviations, and correlations of all variables are provided in [Tab. 2](#). PRS is shown to be positively correlated with NE ( $r = 0.57$ ,  $P < 0.01$ ), and NPS ( $r = 0.39$ ,  $P < 0.01$ ), SCS ( $r = 0.51$ ,  $P < 0.01$ ), and ICCB ( $r = 0.55$ ,  $P < 0.01$ ) are positively correlated with PE and PRS ( $r = 0.39$ ,  $P < 0.01$ ). Also, ICCB ( $r = 0.38$ ,  $P < 0.01$ ), SCS ( $r = 0.45$ ,  $P < 0.01$ ), PE ( $r = 0.38$ ,  $P < 0.01$ ) and NE ( $r = 0.30$ ,  $P < 0.01$ ) are all positively correlated with NPS.

### **3.6.2 Predictors of Stress Coping**

Predictive roles of PRS and ICCB in SCS was explored by a multiple regression analysis. [Tab. 3](#) shows the results. ICCB ( $\beta = 0.39$ ,  $p < 0.01$ ) seemed to predict SCS. It seemed that the higher the identification with Chinese cultural beliefs, the more likely participants would use Active Coping and Self Adjustment to cope with stress during the pandemic.



**Table 2:** Means, standard deviations, and correlations ( $n = 230$ )

Variable	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7	8
1 Gender	0.33	0.47	—							
2 Education	0.73	0.44	-0.05	—						
3 THC	0.28	0.45	-0.05	-0.21**	—					
4 PRS	3.57	0.69	0.01	0.09	-0.11	—				
5 ICCB	3.84	0.84	0.05	0.08	-0.06	0.15*	—			
6 SCS	3.16	0.61	0.04	0.11	-0.08	0.12	0.43**	—		
7 PE	6.28	1.16	0.03	0.03	-0.01	0.05	0.51**	0.55**	—	
8 NE	3.43	1.58	-0.12	0.06	-0.07	0.57**	0.05	-0.09	-0.04	—
9 NPS	3.95	0.74	-0.08	0.16**	-0.04	0.39**	0.38**	0.45**	0.38**	0.30**

Note: \*  $P < 0.05$ , \*\*  $P < 0.01$ ; THC: Time in host Country; PRS: Pandemic Related Stress; ICCB: Identification with Chinese Cultural Beliefs; SCS: Stress Coping Strategy; NE: Negative Emotion; PE: Positive Experience; NPS: Need for Psychological Support. Female = 0, Man = 1; less than 1 years = 0, 1 to 3 years = 1; more than 3 years = 2; undergraduate or lower degrees = 0, master's or higher degrees = 1.

**Table 3:** Results of regression analysis to predict stress coping strategy ( $n = 230$ )

<i>Predictors</i>	$\beta$	<i>SE</i>	<i>t</i>
Gender	-0.01	0.14	-0.17
Education	0.06	0.15	0.95
THC	-0.03	0.08	-0.55
PRS	0.09	0.09	1.44
ICCB	0.39	0.07	5.69**
$R^2$	0.21		
$F$	8.23		

Note: \*\*  $P < 0.01$ ; Standardized regression coefficients were reported; THC: Time in host Country; PRS: Pandemic Related Stress; ICCB: Identification with Chinese Cultural Beliefs.

### 3.6.3 Predictors of Positive Experience and Negative Emotion

A multiple regression analysis was conducted to explore the predictive roles of SCS and ICCB along with gender, education level and time living overseas in positive experience and negative emotion. Results in Tab. 4 show that SCS ( $\beta = 0.35$ ,  $p < 0.01$ ) and ICCB ( $\beta = 0.42$ ,  $p < 0.01$ ) are positively associated with Positive Experience, while PRS ( $\beta = 0.60$ ,  $p < 0.01$ ), and ICCB ( $\beta = -0.19$ ,  $p < 0.01$ ) with Negative Emotion. There is also gender difference in Negative Emotion ( $\beta = -0.12$ ,  $p < 0.01$ ) that female students ( $M = 3.56$ ,  $SD = 1.63$ ) were more likely to have negative emotions than male students ( $M = 3.16$ ,  $SD = 1.43$ ).

### 3.6.4 Predictors of Need for Psychological Support

A multiple regression analysis was conducted to explore the predictive roles of SCS, ICCB, SCS, PE and NE along with gender, education level and time living overseas in Need for Psychological Support (NPS). Tab. 5 shows that PRS ( $\beta = 0.22$ ,  $p < 0.01$ ) and ICCB ( $\beta = 0.21$ ,  $p < 0.05$ ) both had a predictive role in need for Social Support, while PRS ( $\beta = 0.22$ ,  $p < 0.01$ ), ICCB ( $\beta = 0.37$ ,  $p < 0.01$ ) and PE ( $\beta = 0.16$ ,  $p < 0.01$ ) had



**Table 4:** Results of regression analysis to predict PE and NE ( $n = 230$ )

<i>Predictors</i>	Positive experience			<i>Predictors</i>	Negative experience		
	<i>B</i>	<i>SE</i>	<i>t</i>		<i>B</i>	<i>SE</i>	<i>t</i>
Gender	-0.01	0.15	-0.09	Gender	-0.12	0.20	-2.12*
Education	-0.02	0.16	-0.41	Education	0.05	0.22	0.85
THC	0.09	0.08	1.47	THC	0.02	0.11	-0.43
PRS	-0.04	0.10	-0.76	PRS	0.60	0.19	10.09**
ICCB	0.42	0.09	6.56**	ICCB	-0.19	0.12	-2.95**
CSC	0.35	0.08	5.44**	CSC	0.04	0.10	0.67
$R^2$	0.40			$R^2$	0.39		
<i>F</i>	20.24			<i>F</i>	18.81		

Note: \* $P < 0.05$ ; \*\* $P < 0.01$ ;  $n = 230$ ; Standardized regression coefficients were reported; THC: Time in Host Country; PRS: Pandemic Related Stress; ICCB: Identification with Chinese Cultural Beliefs; SCS: Stress Coping Strategy; Female = 0; Man = 1.

**Table 5:** Results of regression analysis to predict need for support

<i>Predictors</i>	Need for social support			Need for self-support			Need for hotline support		
	$\beta$	<i>SE</i>	<i>t</i>	$\beta$	<i>SE</i>	<i>t</i>	$\beta$	<i>SE</i>	<i>t</i>
Gender	-0.01	0.12	-0.28	-0.14	0.09	-2.46*	-0.08	0.20	0.73
Education	0.06	0.13	0.93	0.90	0.10	1.50	0.05	0.22	0.67
THC	0.10	0.06	1.51	-0.02	0.05	-0.37	0.06	0.11	0.78
PRS	0.22	0.10	2.61*	0.22	0.08	3.08*	0.03	0.17	0.34
ICCB	0.21	0.08	2.57*	0.37	0.06	5.19**	0.20	0.14	2.37*
CSC	0.14	0.07	1.85	0.11	0.05	1.55	0.11	0.11	1.30
PE	0.11	0.06	1.31	0.16	0.04	2.16*	-0.04	0.10	-0.40
NE	0.15	0.04	1.85	0.08	0.03	1.15	0.32	0.08	3.64**
$R^2$	0.28			0.43			0.18		
<i>F</i>	8.58			16.81			4.98		

Note: \*\* $P < 0.01$ ;  $n = 230$ ; Standardized regression coefficients were reported; THC: Time in Host Country; PRS: Pandemic Related Stress; ICCB: Identification with Chinese Cultural Beliefs; SCS: Stress Coping Strategy; Female = 0; Man = 1.

predictive roles in the need for Self-Support. Those who scored higher in these respective predictors tended to put higher value on Social Support and Self Support respectively. Further, gender difference was revealed that female students ( $M = 4.28$ ,  $SD = 0.75$ ) seemed to value self-support more than male students ( $M = 4.08$ ,  $SD = 0.76$ ) ( $\beta = -0.14$ ,  $p < 0.01$ ).

We explored possible predictors of the need for hotline psychological support, the only professional modality of help included in the study. The regression analysis revealed that the reported negative emotions ( $\beta = 0.32$ ,  $p < 0.01$ ) and identification to Chinese cultural beliefs ( $\beta = 0.20$ ,  $p < 0.01$ ) were positively related to the need for hotline psychological support.

## 4 Discussion

The study results portrayed some Chinese International Students' emotional state and stress coping during the COVID 19 pandemic. The fact that they were far away from home, faced significant pandemic related uncertainties in host countries, and had become targets of negative xenophobia put them through significant challenges. Encouragingly, our findings seemed to suggest that CISs were doing their best to fend off negative impacts of the crisis by utilizing active, positive and culturally informed coping strategies. It is remarkable that participants of the study gave their positive experiences higher ratings than negative emotions in relation to the pandemic (See [Tab. 1](#)). It is likely that among various disadvantages of living in a foreign country during a crisis, being Chinese may be an advantage as well, making CISs beneficiaries of Chinese cultural wisdom and beliefs in coping with extreme stress and maintaining psychological well-being.

### 4.1 Cultural Identification and Emotional Experience in Face of Crisis

Our study results show that those who reported a higher level of ICCB (identification with Chinese cultural beliefs) tended to have more positive experiences during the COVID 19 pandemic. In their social context, the ICSs' ICCB can be viewed as reflecting the recognition of their Chinese cultural identity and acceptance of their Chinese experience. Based on numerous minority cultural identity studies in the western countries [25], it can be assumed that during a challenging time ICSs' cultural identification may benefit them by providing a buffer or a sense of having back-up or a resort. This result is consistent with the past research finding that the identification with Chinese cultural heritage is negatively correlated with psychological distress and makes specific coping strategies less relevant in dealing with acculturation stress [26].

Considering the types of positive emotions that we evaluated, the significance of the positive relationship between cultural identification and positive emotions for CISs is clearer. It seems that participants who reported higher identification with Chinese cultural beliefs tended to experience more of ability to understand others, feel hopeful in crisis, care about others, get in touch with own conscience, show willingness to sacrifice for the country, persist when feeling helpless, and use the opportunity to help others. This finding is suggestive of the relational and contextual nature of Chinese cultural values regarding overcoming stress or adversity. In fact, this focus on relationship with others is captured by the ground breaking view of stress by McGonigal [27], who described the "upside" of stress as being relational and providing opportunity, and challenged the traditional understanding of fight-or-flight as being a natural reaction to stress. Instead she believes "tend-and-befriend" captures the functional stress reaction that activates people's prosocial instincts and encourage individuals to be more socially connected in face of stress.

It should not be overlooked while ICCB is positively associated with positive experience, it is also negatively correlated with anxiety and depression. This finding may start the discussion on how helping professions should intervene to offer assistance to CISs during time of a crisis. The traditional treatment, such as individual counseling, that is generally symptom focused may need to be reconsidered, taking into consideration that CISs' having higher identification with Chinese cultural beliefs may potentially lead to increase of their positive experience as well as decrease of negative emotions. In fact, our finding about the positive relationship between ICCB and preference for social support (*vs.* individual hotline support) is supportive of the idea that helping individuals relieve negative emotions does not mean that individual support is the most appropriate or sufficient.

### 4.2 Coping Strategies Informed by Chinese Cultural Wisdom

Beyond benefiting from a general identification with Chinese cultural beliefs, CISs' stress coping behaviors are also prone to cultural influence. Our results show that the higher the ICCB scores the more

likely participants would endorse Active Coping and Self Adjustment to cope with stress during the pandemic. As reflected in the items loaded on Active Coping and Self Adjustment, there are a number of specific Chinese cultural characteristics that may have direct or indirect implication on CISs' choice of coping strategies. First, the Chinese collectivist orientation or "we" (vs. "I") mentality may help CISs to readily accept, feel and believe "we are in this together," which can be emotionally comforting in stressful situations. Collectivist culture emphasizes individuals' responsibilities and obligations to society, and value norm obeying and self-sacrifice for collective good or others [28], which may help CISs focus attention to the opportunity of helping others, as shown in this study, as part of navigating the pandemic crisis situation leading to positive experience.

Chinese culture is deeply influenced by Confucianism and Taoism. Confucian culture emphasizes positive coping in the face of disaster, and encourages reliance on one's own efforts to overcome difficulty as well. Further, it emphasizes the need to change cognition, recognize the positive role of pressure, realize personal responsibility, and maintain optimism, so as to experience a higher sense of life meaning [17,29,30]. The cultural beliefs we included in this study, the notion of positive action, such as "act rather than complaining when being challenged"; belief of social responsibility, such as "helping the world after preserving one's own dignity", and cultural tolerance, such as "agreeing to disagreement with respect when having moral conflict", and the concept of optimism in difficult situations, such as "keeping the spirit of optimism during a difficult time", are all from Confucian culture. Consistent with these beliefs, our participating CISs value coping strategies such as "seeing self-protection as contribution to society."

Taoism has also been a foundation of Chinese culture beliefs regarding stress coping and views that stress should be viewed dialectically [31,32]. On the concept of acceptance, such as "when epidemic comes, accept it", on the concept of dynamic change, such as "things are always changing, just wait for opportunity" and "For the unchangeable, accepting it and letting it go", and on contradictory beliefs such as "things will turn for the better regardless how bad they are", there is clear influence by Taoism. Such dialectical thinking may lead to more tolerance of stress, therefore more likelihood that one keeps a positive attitude when facing stress, focusing on rebuilding appropriate cognitions regarding the meaning of stress and reducing anxiety and psychological discomfort [33]. Our study participants' endorsement of focusing on what one can control to avoid feeling powerless or helpless about the epidemic appeared to be reflective this cultural teaching.

It is encouraging to see that the participating CISs have utilized coping strategies that reflect traditional Chinese culture as rooted in both Confucian and Taoist cultures. They tended to value positive coping strategies that include realistic evaluation of the epidemic situation in host countries and doing a good job in self-protection by appropriate self-adjustment. The result that participants with a bachelor degree or higher education levels valued self-adjustment more than those without a bachelor degree seemed to suggest that learning to rely on self-adjustment for stress coping is a developmental process. The more educated or mature one is, the more likely the person would use coping method like active transformation of cognition and behavior such as "rethinking the meaning of life" and "discovering the positive changes brought by the epidemic". Under such circumstances, Chinese concept of self being relational in nature [34] could be helpful for CISs to accept and conduct voluntary self-adjustment rather than complaining about the unchangeable environments.

Finally, the Chinese highly valued family orientation could also help CISs feel supported. Their felt stress from knowing their family back home in China worrying about them could also bring a sense of positive connection with family. In a large crisis like COVID 19, there may be clear advantage of having an interdependent self-concept, embedded in which is the notion of "I am not alone." Overall, our study results supported that the higher the identification with Chinese cultural beliefs, the more

likely one would adopt positive coping strategies, as well as have more positive experiences and less/lower negative emotions. This finding illustrated the power of culture in individual stress coping and psychological well-being.

#### ***4.3 Need for Support—A Cultural Reflection***

Participants of the study seemed to want support that either comes from within or from external sources. The findings showed that while pandemic related stress might predict the need for both social and self-support, ICCB seems to predict the need for self-support. It is understandable that when the situation becomes a stressor, such as when xenophobia and other negativity toward Chinese increases on top of the COVID 19 stress, CISs would want to be supported by large-scale social support, such as that from China and understanding and respect from the host country. They would want to have support from the public, the media and the country's systems. On the other hand, their identification with Chinese beliefs also supported their reliance on self-support, such as trying to normalize their life and learning not to be distracted by the uncontrollable, consistent with Chinese stress coping style [35]. The combination of support from both sources could be the ideal.

It is interesting to note that participants did not rate the anonymous hotline counseling as highly desired, although negative emotion appeared to be a positive predictor. It was unknown if the participants had received hotline service due to our survey not asking for the information. Nonetheless the result could indicate that when the stress occurs due to crises at community, societal or global levels, effective external psychological support should be at those levels as well. Moreover, the study results also seem to imply that effective psychological support has to fit the culture, the situation and individuals' needs, and may not look like the traditional professional modality of help as we know. Individual psychological help, while being helpful, may have the risk of individualizing client experience when the source of the problem was not due to the individual's personal weakness. However, this does not mean no place for individual professional support, because higher levels of negative emotions may increase the needs for individual hotline service. Instead the study results call for significant attention to the role of social and cultural contexts in client experience when offering one-on-one psychological service.

#### ***4.4 Limitations of the Study***

Caution is needed in interpreting the findings of the study. First, the study used a series of self-developed questionnaires for data collection, which is no doubt prone to the biases our research team may have. Except one person is a Chinese American, all members of the team involved in questionnaires development are Chinese and located at one place in the United States during both the first and second halves of this Anti-Epidemic Battle. Thus narrowness of views is hard to avoid. Secondly, both our sampling method (using convenient samples) and limited sample size and representation make the generalization of the results difficult. Finally, due to the small size of the sample, we were not able to differentiate participants from different countries to address each country specific context, although in theory we know the importance of the contexts in understanding our target populations' stress coping.

### **5 Conclusion**

Although explorative in nature, our study may offer several perceptions of Chinese International Students during COVID 19 pandemic. First, CISs face significant personal and emotional challenges during the pandemic and would want to have moral support from China (at governmental and public levels) and host countries (from political system and public opinions). Secondly, even in face of such unprecedented crisis, CISs demonstrated strength and managed reasonably well. They reported higher positive experiences and lower negative emotions, and they are aware of and intentional in pursuing positive and culturally informed effective coping strategies. Thirdly, being surrounded by the COVID 19

threats and negative social environment CISs seem to have experienced benefit of identifying with Chinese cultural beliefs in stress coping and psychological well-being. Finally, multiple modalities of psychological support need to be considered when offering assistance to CISs. The traditional one-on-one counseling through hotline service may not be the only or the best way to help them during the current situation.

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