

Article accepted for publication in the Journal of College Student Development. To cite: Tozini, K. & Castiello-Gutiérrez, S. (in press). COVID-19 and International Students: Examining Perceptions of Social Support, Financial Wellbeing, Psychological Stress and University Response. *Journal of College Student Development*

COVID-19 and International Students: Examining Perceptions of Social Support, Financial Wellbeing, Psychological Stress and University Response

Tozini, Kelber^{a*} and Castiello-Gutiérrez, Santiago^b

^aGraduate School of Education and Human Development, George Washington University, Washington D.C., United States. kelber@gwu.edu

^bCenter for the Study of Higher Education, University of Arizona, Tucson, AZ, United States

Abstract

After the COVID-19 pandemic forced higher education institutions (HEIs) in the United States (US) to transition into online instruction, a particular subpopulation of students was highly impacted: international students. This study is aimed at understanding the impact of COVID-19 on international students' social support, financial wellbeing and psychological stress. This study is guided by the following research questions: (a) In what ways, if any, are the experiences of undergraduate and graduate students similar and different across variables?; (b) How does Covid-19 impact residential students in comparison to those who were living on campus and those who returned home?; (c) How do students' perceptions differ according to the source(s) of funding for their studies? Through 359 responses to a survey conducted at two large universities in the US, this study found that doctoral students reported higher social support in comparison to undergraduate students and that master's students were more satisfied with the university's decision to move to online instruction than bachelors' students. Students with multiple sources of funding reported higher levels of financial wellbeing than students with one source of funding. However, no differences were found between students who stayed on campus and students who were off campus or who returned to their home countries. We also found no statistically significant differences in any of the variables between students who are self-funded and students who are not. This study suggests that different groups of international students deserve more attention from HEIs in times of crisis as the one caused by the effects of the pandemic.

Keywords: *international students, covid-19, financial wellbeing, social support, university support, psychological stress*

COVID-19 and International Students: Examining Perceptions of Social Support, Financial Wellbeing, Psychological Stress and University Response

In the spring of 2020, Covid-19 greatly impacted higher education worldwide. In the United States (U.S.), where the majority of higher education institutions (HEIs) prime for offering on-campus experiences, saw a majority of them being forced to teach their students online when large gatherings were called off, study abroad programs and commencement ceremonies canceled. In some cases, dormitories were closed, and most students were forced to move out. Hosting over one million international students, HEIs in the U.S. have responded to this population in different ways. For example, regarding living accommodations, many institutions allowed international students to remain on-campus but with limited services, turning colleges in what seemed like “ghost towns” (Burke, 2020, para. 30). The alternative was for students to leave their accommodation on short-notice and find another place to stay, or to depart the country risking getting infected/infecting others and not being able to re-enter the US given the harsh travel restrictions established worldwide (Zhou, 2020). Soon after closing off campuses, it was also evident that the world economy would suffer in unprecedented ways; institutions and governments started to draft relief plans that in many cases left international students in limbo.

Given these unique conditions, and based on previous literature that has shown how international students comprise a vulnerable population (e.g. Khanal & Gaulee, 2019; Sherry et al., 2010), we hypothesize that these students are facing even more acute levels of stress related to their personal life, their financial wellbeing, their mental health, and their academic achievement (i.e., student-life stress) in comparison to domestic students. Our study consists of a survey to measure multiple variables such as university support (Cho & Yu, 2015); social support (Yu et al., 2019), and satisfaction with institutional response to the health crisis.

COVID-19 AND INTERNATIONAL STUDENTS

However, despite these challenges being shared by most international students, previous literature has shown that there are important nuances in students' experiences based on their demographic characteristics (i.e., gender, sexual orientation, race, ethnicity, country of origin, socio-economic status, etc.) or on other characteristics related to their institutional experiences such as level of studies, living on- or off-campus, campus diversity, availability of support services, among others (see Lee & Castiello-Gutiérrez, 2019 for a summary of literature addressing international students' challenges in the U.S.).

Therefore, our study is designed to investigate the effects that Covid-19 has had on different dimensions of the international student experience and wellbeing: social support, financial wellbeing, student-life stress, and their overall satisfaction with the university's decision to move to online instruction. We achieve this by answering three research questions that compare students according to certain demographics: (a) In what ways, if any, are the experiences of undergraduate and graduate students similar and different across variables?; (b) How does Covid-19 impact residential students in comparison to those who were living on campus and those who returned home?; (c) How do students' perceptions differ according to the source(s) of funding for their studies?

This study is timely and important for several reasons. First, it contributes to the literature on international student experience, with a special focus on how HEIs react to external crises that impact student wellbeing. Second, as opposed to much of the literature that groups together all international students, this study provides empirical evidence on the different experiences and challenges faced by subgroups of international students according to their level of study, housing arrangements after the universities' pivoted from in-person to online instruction, and the status and type of their funding sources or availability of additional financial support. These two contributions have implications for practice that could help HEIs

COVID-19 AND INTERNATIONAL STUDENTS

better serve their international students. As we discuss further, we believe that given how HEIs in the US have been actively attracting international students, the expectations that they will foster supportive environments are high. When these students do not believe their college is meeting their needs, institutions can and must do a better job in listening to and resolving international students' concerns.

Literature Review

International students tend to experience greater challenges in their adaptation to college than domestic students (Van Horne et al., 2018; Zhou & Cole, 2017). Besides being challenged to learn a new language and adapt to new cultural and social norms, international students experience other issues such as an increase in their psychological stress, affectations to their mental health, and limited access to social and financial support services (Mesidor & Sly, 2014; Sherry et al., 2010; Wu et al., 2015). The COVID-19 pandemic, together with social and civil unrest in the U.S. during the year 2020, had the potential to exacerbate these issues. Hence, understanding how international students' wellbeing is affected under current conditions becomes paramount. We begin our review of previous literature by exploring how these challenges affected international students before the pandemic. We then move to explore how current events, and the available literature around them, explore the effect the pandemic has had in international students' overall wellbeing.

Psychological Stress

Negative emotions among students moving to a different country have been widely documented. Mainly stemming from what has been called acculturative stress (Berry, 2006), feelings such as discrimination, homesickness, fear, guilt, among others, contribute negatively to international students' mental health (Poyrazli, 2015; Smith & Khawaja, 2011). Strategies to navigate and overcome these challenges tend to be grouped around agency and

COVID-19 AND INTERNATIONAL STUDENTS

self-reliance, or outreach and support (Heng, 2018). Regarding the former, previous literature has signaled the importance of the students' intrinsic motivations and personal characteristics to increase their resilience towards common challenges (Mostafa & Lim, 2019), as well as their individual sense of agency for resistance and contestation (Tran & Vu, 2018). For example, students' sociocultural adaptation competencies (such as interpersonal communication or community involvement) can decrease acculturative stress levels (Mahmood and Galloway, 2018) . But how HEIs are ensuring the psychological wellbeing of their international students regardless of their personal experiences and agency remains understudied. This lack of research has implications for practice that could mean a difference in how international students are purposefully engaged by their host institution.

As for the latter (outreach and seeking support), HEIs in the US have long been struggling to offer counseling services in a meaningful way for international students. It has been documented how this specific subpopulation tends to underutilize professional support services offered by their host institutions (Alavi et al., 2014; Becker et al., 2018; Chen et al., 2020; Hwang et al., 2014; Mesidor & Sly, 2014; Minutillo et al., 2020). The current pandemic has certainly made things more complicated. According to a survey by the American College Health Association (ACHA) with a sample of over 18,000 students (including 10% international students), two thirds felt more stressed during the lock-down phase of the pandemic, and felt that their mental health negatively impacted their academic performance. And while approximately 60% did not sought mental health care support, 60% of the ones who did, expressed that the pandemic made it more difficult to seek support (ACHA, 2020). These students highlight the need to hold HEIs accountable for students' psychological wellbeing. Most institutions, especially in the U.S. given their level of resources, should be able to provide more and better access to counseling services.

Financial Wellbeing

Since international students in the U.S. must pay higher tuition rates and lack access to many financial aid options, they are easily overgeneralized as an affluent and resourceful population. This has also created a perception of international students being ‘cash-cows’ for HEIs in the U.S. and other developed countries (Cantwell, 2015; McCartney & Metcalfe, 2018; Robertson, 2011; Tannock, 2018). However, as research has shown, international students in the US are actually a vulnerable population in many aspects, including financial ability to pay for food and other basic needs (Hanbazaza et al., 2017; Sherry et al., 2010).

One way to determine the extent to which international students require financial aid is by looking at the number of sources that students rely on to pay for their education. Students who depend on a single source (such as personal funds or full-ride scholarships) to fund their studies abroad tend to be less concerned about their financial (in)security, and therefore, have a different approach to their academic and social experience compared to students who had multiple sources of funding (Glass et al., 2019). From a qualitative study of 40 international graduate and undergraduate students in two U.S. HEIs, Glass et al (2019) found that single-sourced students reported more interactions with their peers (international and domestic) to capitalize on their rich social environment and learn from their professors, while multi-resourced students had more concrete and practical approaches towards certain occupations and career goals through classes and internships and interactions with faculty and staff. Through a mental-health survey of 130 Chinese graduate and undergraduate students at an Ivy League institution, Han et al. (2013) corroborate how students who receive financial support from their families, and perceive an additional income as teaching/research assistants at their institution, experience lower levels of depression and anxiety. While both of these last studies included in their sample both graduate and undergraduate students, one common gap

COVID-19 AND INTERNATIONAL STUDENTS

in the literature is the mediating effect of the level of study as a sign of greater or lesser financial wellbeing. To address this gap, our study does consider measuring differences in the students' perception of their financial wellbeing based on their status as graduate (broken down by master's and doctoral) and undergraduate.

Social Support and Satisfaction with the University

International students are attracted to HEIs outside their country for several reasons, many of which underlie an expectation of a better experience than what they could have by staying at home (Mazzarol & Soutar, 2002). However, oftentimes institutions' efforts to attract international students are not matched with the resources they invest in supporting them once on campus (Arthur, 2017), nor with the effort placed by HEIs in generating a welcoming environment across the institution. This results in international students not being fully satisfied with their experience. Overall, satisfaction with higher education among students (domestic and international) is highly dependent on the alignment between students' personal expectations for their time in college and their actual experiences (Miller, 2005). Therefore, when international students place themselves as 'customers' with high expectations about the educational service they anticipated from their university, it is common for their perceived satisfaction to be deemed lower (Bélanger et al., 2013; Yasin & Bélanger, 2015). To increase international students' satisfaction with their overall education, HEIs need to help students feel more engaged and identified as part of the university community, while ensuring they are being supported in all their various needs (Cho & Yu, 2015). One way of doing this, is through affect-based experiences such as mentoring which have been proven to be positive in increasing students' satisfaction and engagement (Wang, 2020; Yang et al., 2016).

COVID-19 AND INTERNATIONAL STUDENTS

International students are subjected to different stressors, primarily related to their life and their academics. Having a strong social support system may mediate the effects of these stressors (Bender et al., 2019; Li et al., 2010; Misra et al., 2003). These social support systems for international students can consist of family and close friends back home as well as different connections in the host country including co-nationals, other international students, local/domestic students, faculty or staff, or a combination. Research has found that the latter—having acquaintances from a mix of different backgrounds—has the largest positive effect on the students’ feeling supported and integrated (Bender et al., 2019; Gómez et al., 2014; Shu et al., 2020). Besides support from peers, students who feel highly supported by faculty members tend to feel less lonely (Brunsting et al., 2019).

COVID-19 and International Students

The previously discussed challenges faced by international students have, in many cases, been exacerbated and expanded due to the COVID-19 pandemic. A survey conducted by the Institute of International Education (IIE) in May 2020 showed that among the 599 institutions in their sample (which collectively hosted around half of the total number of international students in the US), 54% had closed entirely their dormitories and student housing (Martel, 2020). For many out-of-state students, this meant going ‘back home’; however, international students were limited by travel restrictions established by most countries, unreasonable flight costs, and the inherent risks of traveling during a pandemic. Therefore, international students who were living on-campus before the pandemic had to choose to stay in a semi-closed campus with little to no services, find accommodations off-campus, or struggle to go back to their country and continue their classes remotely (in many cases with synchronous lectures happening at odd times).

COVID-19 AND INTERNATIONAL STUDENTS

In terms of their financial wellbeing, the pandemic has left many international students in a very precarious situation of even being food and house insecure. Lack of access to these two bare necessities in the U.S. higher education sector has been amply documented (see for example, Broton et al., 2020; Broton & Goldrick-Rab, 2018; Bruening et al., 2017; Freudenberg et al., 2019). These studies estimate that, before the pandemic, “at least one-third of 2-year students are housing insecure, including up to 14% who are homeless, whereas between 11% and 19% of 4-year students are housing insecure” (Broton & Goldrick-Rab, 2018, p. 121). While these studies mention international students as one of the subpopulations that frequently use services such as campus pantries, there is no data to show the proportion of international students who are food and/or housing insecure. However, this issue has been documented at other countries who also receive large populations of international students such as Australia (Hughes et al., 2011), or Canada (Hanbazaza et al., 2017; Olauson et al., 2018). After the pandemic forced a global lock-down, news about large numbers of international students in-line at local food banks were reported in places like Canada (Laban et al., 2020) and the UK (Burns, 2020). In the U.S., international students’ inability to legally work outside the university left many without a job after the closures and during the next summer. These students were also not eligible for unemployment benefits under the CARES act (Heusel et al., 2020)

Another important and very unfortunate affectation has been discrimination. While theories like neo-racism (Lee, 2017b; Lee & Rice, 2007) and neo-nationalism (Lee, 2017a; Lee et al., 2017) have shown a constant stratification in the experiences of international students being discriminated against by their perceived race or national origin, events like the pandemic exacerbate discrimination and inequities (Humans Right Watch, 2020). In the US, mostly fueled by then President Trump’s rhetoric of calling COVID-19 “the Kung Flu” and

COVID-19 AND INTERNATIONAL STUDENTS

“the China virus” (The White House, 2020), many international students have been targeted both within and outside their campuses (Cheng, 2020; Juan, 2020; Liao, 2020).

Finally, the confinement measures to combat the pandemic have affected international students’ social support and mental health. While formal learning can continue through virtual formats, mentorship, network-building, and opportunity for collaboration are harder to occur organically when students and faculty are not interacting as frequently (Wang & DeLaquil, 2020).

Research Hypotheses

This paper is the first of a series of studies on the impact of COVID-19 on international students. The present study looks to investigate the COVID-19 pandemic on the financial wellbeing, social support, psychological stress, and satisfaction with the university’s response impacted different groups of international students after classes were moved to online instruction. More specifically, we sought to identify whether there were differences based on certain characteristics international students possess such as their living arrangements, their level of study, or their sources for funding. Therefore, this study is guided by the following research hypotheses:

H1 null: After the move to online instruction, international students at the undergraduate level will have the same levels of financial wellbeing, social support, psychological stress and satisfaction with the university’s decision as those international students at the graduate level.

H2 null: After the move to online instruction, international students living on campus will have the same levels of financial wellbeing, social support, psychological stress and

COVID-19 AND INTERNATIONAL STUDENTS

satisfaction with the university's decision as international students living off campus or in their home countries.

H3a null: After the move to online instruction, international students with one source of funding will have the same levels of financial wellbeing, social support, psychological stress, and satisfaction with the university's decision as international students with multiple sources of funding.

H3b null: After the move to online instruction, self-funded international students will have the same levels of financial wellbeing, social support, psychological stress and satisfaction with the university's decision as international students who are not self-funded.

Methods

Given that this study aims to answer research questions on different dimensions of the international student experience, the research team conducted a quantitative study which consisted of a survey sent to international students in two universities. The first institution is an urban private university located in the Mid-Atlantic (we refer to it as Mid-Atlantic University or MAU); the second institution is an urban public university located in the Southwest of the United States (we refer to it as Southwestern University or SWU). During Summer 2020, the survey research administration departments of these institutions sent via email the research instrument created by the authors of this paper but both institutions had different approaches to do so. SWU agreed to send the survey to all international students (3,481); the link was active for one week and no reminders were sent. On the other hand, MAU agreed to send the survey only to a random sample of approx. one fourth of the population of enrolled international students. However, the random sample does not reflect MAU's international student population in terms of countries of origin. Therefore, 1,120

COVID-19 AND INTERNATIONAL STUDENTS

students received the survey which was active for two weeks; a reminder was sent by the institution after one week. In both cases, and to increase the survey response rate, students who completed the survey were entered into a raffle to receive one of twelve \$25 gift cards.

Measures

The survey included four variables which examined international students' perceptions both before and after classes pivoted to online instruction. In this paper, however, we only focus on students' experiences *after* the universities' decision to move to online instruction. These variables are: social support, student-life stress, financial wellbeing, and satisfaction with the university's handling of the COVID-19 crisis. All the variable items were measured on a five-point Likert scale (1 = *strongly disagree*, 5 = *strongly agree*). The variables proved reliable with Cronbach's alphas greater than .70, and are described in turn and the questions are included in the Appendix 1.

Perceived social support. Students' social support scale was adapted from Yu et al. (2019). Among the eight items are *I felt supported by my family*, *I felt supported by my friends*, and *I feel supported by my friends who are not students in my school*. Cronbach's alpha from our sample was .842 ($M = 4.02$ $SD = .73$), slightly higher than in the original study (.83).

Student-life stress. This variable was adapted from Cho and Yu. (2015), who had revised six items from Gadzella's (1991) Student-Life Stress Inventory. Among the six items is "*I have experienced frustrations due to delays in reaching my academic goals*". A reliability analysis within our sample resulted in an acceptable Cronbach's alpha of .78 ($M = 3.13$ $SD = .88$), a little lower than Cho and Yu's (2015) study (alpha was .83).

Financial wellbeing. Three items comprised this variable adapted from Benson-Egglenton (2019). Two of the items are: *I worry about having enough money to meet my basic living costs such as food, rent, and other bills; I feel that money worries have impacted on my ability to study.* The last item, *I have money to participate in all aspects of the university I want to,* was reverse-coded for the analysis. The adapted scale also proves reliable with a Cronbach's alpha of .78 ($M = 3.04$ $SD = .74$), not significantly lower than Benson-Egglenton's study of .86.

Satisfaction with the university's response. This variable, created by the authors of this study, consisted of eight items aiming to understand their perceptions of the institution's response to COVID-19 (e.g., *The university's decision regarding Covid-19 sought what was best for all students*) and the support provided (e.g., *I feel supported by the university staff regarding the effects of Covid-19*). One of the items (*The university's decision regarding Covid-19 was more beneficial to domestic students*) was reverse coded. Cronbach's alpha was .846 ($M = 3.49$, $SD = .84$).

Data Analysis

When comparing responses according to the level of study, we utilized Analysis of Variance (ANOVA). We separated students into three levels - undergraduate, master's, and doctoral. The second comparison was between students who were living on campus versus, as well as students living off-campus, and students who returned to their home countries as of April 2020 (after the move to online instruction at SWU and MAU). In both analyses, we also examined the data to meet the ANOVA assumptions (Lomax & Hahs-Vaughn, 2012).

For the last comparison we separated our sample according to the students' source of funding, we then conducted two independent t-tests because each of them consisted of two groups (Lomax & Hahs-Vaughn, 2012). These variables were coded using dummy variables.

COVID-19 AND INTERNATIONAL STUDENTS

In the first, personal funds, we focused on international students studying in the U.S. with family funds or with personal funds (1 = yes, 0 = no). The second variable focused on international students studying in the U.S. with one source of funding only (1 = yes, 0 = no). A zero indicates that the student had more than one source of funding. Having one source or multiple sources could be a combination of any of the following: personal funds; family funds; on-campus work (of any type); government scholarship(s); merit-based funding; national agency scholarships. We utilized SPSS to conduct the statistical analysis.

Limitations

This study is limited for several reasons. First, it only includes two universities in different regions of the country, therefore they do not represent the entire international student population studying in the United States. Second, the survey was sent to a sample of international students in one university, which does not reflect the actual international student body of that university. Third, the small number of respondents can impact the findings. In order to solve that, we sent the reminder as previously explained to MAU students, but we also believe that the small sample occurred given the student fatigue due to being constantly online as a result of online instruction. Also, the ANOVA utilized to compare students' perceptions according to where students were living in April 2020 is limited because the sample includes a group that is significantly smaller than the others. However, we believe it is important to make such comparisons as students were then (September 2020) deciding whether they should stay in the country to continue their studies. Lastly, the survey was applied weeks after the Immigration and Customs Enforcement ICE directive was in place, which could have impacted their perceptions of studying in the United States as students may have been unsure about their future in the country. However, despite these limitations this

COVID-19 AND INTERNATIONAL STUDENTS

study is relevant since it provides important findings that may inform practice as well future research studies.

Findings

We obtained 359 responses to the survey: 61% (219) from SWU (6.3% response rate) and 39% (140) from MAU (12.5% response rate). Among the respondents, 62.1% identified as female, 36.8% as male, 0.6% as non-binary, and 0.6% indicated they would rather not say their gender. As for the level of study, 40% of the respondents were pursuing their bachelor's, 26% their masters', 32% their doctorate, and 7% in other programs such as professional degrees. We also asked participants to indicate their funding sources, and 35% were self-funded (with family funding or personal savings) and 65% were not. We also found that 56.5% of participants had multiple sources of funding, which could include a combination of family funding and/or personal savings, and/or on-campus jobs, and/or merit scholarships among other sources. The average age of respondents was 25.3 years old, with a median of 24 and three modes (19, 21, and 23). We attribute this older sample to the fact that slightly more than half of the respondents were graduate students (57.9%). This sample consisted of students coming from 66 different nationalities, with China having the highest representation (23.7%), followed by India (10.3%), Mexico (5.6%), South Korea (3.6%), and Saudi Arabia (3.1%).

Table 1: Demographic Data from Both Institutions (N=359).

<i>Variable</i>	<i>Demographics</i>	<i>Mid-Atlantic University (MAU) n=140 (39%)</i>	<i>Southwestern University (SWU) n=219 (61%)</i>
Gender	Female	63%	61%
	Male	36%	32%
	Non-binary/I'd rather not say	1%	1%
Level	Undergraduate	37%	44%

COVID-19 AND INTERNATIONAL STUDENTS

of Study	Masters	16%	42%
	Doctoral	45%	11%
	Other	2%	2%
Source of Funding	Self-funded	51%	10%
	One source of funding	56%	58%
	Multiple sources	44%	42%
Living Arrangements April 2020	Living on campus	25%	11%
	Living in home country	8%	7%
	Living off campus	68%	82%

The first ANOVA compared students' perceptions regarding financial wellbeing, satisfaction with the university's responses, social support and psychological stress according to level of study. Four one-way between-groups ANOVAs were conducted to explore differences by level of study on levels of agreement regarding the four dependent variables being measured (Table 2). Statistical differences were found in social support ($F = 3.732$, $df = 2,319$, $p < .05$, observed power = .68) and satisfaction with the university's decision regarding the handling of the COVID-19 crisis ($F = 5.760$, $df = 2,317$, $p < .01$, observed power = .87). Post-hoc tests showed that doctoral students had reported higher social support ($M = 4.17$, $SD = .644$) in comparison to bachelors students ($M = 3.91$, $SD = .755$). The effect size is rather small ($\eta^2 = .023$) suggesting about 2.3% of the variance of social support is due to differences in level of study, and observed power is strong (.681). Masters level students reported a higher rate ($M = 3.73$, $SD = .787$) in satisfaction with the university's response than bachelor's students ($M = 3.39$, $SD = .818$). The effect size is rather small ($\eta^2 = .035$) suggesting about 3.5% of the variance of satisfaction with the university response is due to differences in level of study, and observed power is strong (.866). Therefore, H1 was partially rejected.

Table 2: Comparison According to Level of Study

<i>Indicator</i>	<i>Level of Study</i>	<i>N</i>	<i>Mean</i>	<i>SD</i>	<i>Sig</i>
Social Support	Bachelors	127	3.91	0.755	0.025*
	Masters	89	4.01	0.799	
	Doctoral	106	4.17	0.644	
	Total	322	4.02	0.74	
Satisfaction with University Response	Bachelors	126	3.27	0.791	0.003*
	Masters	89	3.65	0.805	
	Doctoral	105	3.45	0.887	
	Total	320	3.49	0.84	
Financial Wellbeing	Bachelors	127	3.07	1.111	0.31
	Masters	89	3.11	1.143	
	Doctoral	106	2.95	1.194	
	Total	322	3.04	1.151	
Psychological Stress	Bachelors	126	3.2	0.805	0.364
	Masters	88	3.14	0.905	
	Doctoral	105	3.03	0.941	
	Total	319	3.13	0.879	

*p<0.05.

The second comparison examined respondents’ perceptions regarding financial wellbeing, satisfaction with the university’s decision, social support and psychological stress according to where students were living in April 2020 (on campus, off campus, and home country). When conducting four one-way ANOVAs, no differences were found between students living on campus, students who returned to their home countries and students living off campus. Therefore, H2 null cannot be rejected.

The last comparison analyzed students’ perceptions according to the source(s) of funding. In the first independent samples T-test analysis, we compared the financial wellbeing of students with one source of funding versus students with multiple sources. The results (Table 3) revealed a statistical significance difference in financial wellbeing ($F = 8.687$, $df = 1, 326$, $p < .01$, observed power = .84), where students with multiple sources of

COVID-19 AND INTERNATIONAL STUDENTS

funding score higher ($M = 3.30$, $SD = 1.10$) than students with one source of funding ($M = 2.93$, $SD = 1.18$). The effect size is rather small ($\eta^2 = .026$) suggesting about 2.6% of the variance of social support is due to differences in the number of funding sources, and observed power is strong (.836). No significant differences were found between the two groups in satisfaction with the university's response, social support, and student-life stress. Therefore, H3a null can be partially rejected.

Table 3: Comparison according to the number of sources of funding

Indicator	Level of Study	N	Mean	SD	Sig
Social Support	One source	186	4.02	0.685	0.968
	Multiple sources	142	4.03	0.805	
	Total	328	4.025		
Satisfaction with University Response	One source	185	3.45	0.81	0.68
	Multiple sources	141	3.41	0.88	
	Total	326	3.43		
Financial Wellbeing	One source	186	2.93	1.18	0.03*
	Multiple sources	142	3.3	1.1	
	Total	328	3.11		
Psychological Stress	One source	185	3.12	0.89	0.765
	Multiple sources	142	3.15	0.88	
	Total	327	3.13		

* $p < 0.05$

In the second independent samples T-test analysis, we compared students who were self-funded (family or personal funds) with students who were not self-funded. The results did not point to any significant differences between the two groups on any of the four variables. Thus, H3B null cannot be rejected.

Discussion and Conclusions

The COVID-19 has led to a disruption of higher education systems, impacting all students, faculty, and staff in different ways, but leaving international students, who

COVID-19 AND INTERNATIONAL STUDENTS

experience greater challenges than their domestic counterparts (Van Horne et al., 2018; Zhou & Cole, 2017), with the difficult response of where to live once classes were moved to online instruction (Zhou, 2020). In a context where international students are mistakenly perceived as ‘cash cows’ (Cantwell, 2015), understanding how this impacts their experience is of utmost importance.

Findings from this study revealed important issues. First, the effects of the pandemic have impacted students’ perceptions of social support and satisfaction with their university’s handling of the pandemic. Social support from various sources play an important role in the cross-cultural adaptation of international students (Yu et al., 2019). While distinctions in support and satisfaction between international students at different levels (e.g. undergraduate vs. graduate) are seldom mentioned in the literature, our findings suggest that this gap deserves more attention since there are statistically significant differences. In line with results from one of the few articles that explored these differences (Mahmood and Galloway’s, 2018), our findings revealed that undergraduate students reported lower levels of social support in comparison to doctoral students. One of the reasons that might explain this difference is that, traditionally, doctoral students do not rely as heavily on campus extra-curricular experiences to foster social relationships (Campbell, 2015), and therefore, even without in-person classes, graduate students were possibly still able to interact with their social network. And while our findings reflect that at the construct level there were no statistical differences by level of study for students’ financial wellbeing and psychological stress, significant differences were found for some of the items in our scales. This shows that the way these constructs have been designed, and are being measured, might not reflect the inherent differences in experiences for international students at different stages. Particularly, through our survey we noticed a pattern where particularly master’s level students found that

COVID-19 AND INTERNATIONAL STUDENTS

a disruption such as COVID affected them more in terms of their ability to achieve their academic goals.

Concerning satisfaction with the university response, graduate students scored significantly higher than undergraduate students. One possible explanation is the affectations that closing campuses brought to these populations both to their day-to-day and academic activities. On the one hand, undergraduate students tend to live on campus and are engaged in extracurricular activities that were cancelled. Undergraduate students in the sampled institutions are also less accustomed and exposed to remote classes that require more independent learning. On the other hand, masters' and doctoral students do not have the same engagement levels with the day-to-day campus-life and tend to live off campus. Also, in line with previously reviewed literature on expectations (Miller, 2005), this finding might suggest that undergraduate students were more dissatisfied with the way their institution responded to the COVID crisis based on the expectations they had for their overall curricular and extracurricular experience during college.

Third, it has been widely discussed that COVID-19 has impacted all students' finances and ability to pay. The results here revealed that students with multiple sources of funding scored significantly higher in financial wellbeing than students with one source. This could be explained by students with multiple sources possibility of still counting on more than one source of funding after the pandemic, while students with one source saw themselves highly dependent on this one source, and such a source may have been affected greatly in terms of finances.

Lastly, we hypothesized that the place where students were studying after classes were moved to online instruction would not impact students' perceptions of social support, financial wellbeing, satisfaction with the institution or psychological stress differently. This

COVID-19 AND INTERNATIONAL STUDENTS

hypothesis could not be rejected, showing that in this context, the locus of study does not significantly impact their perceptions. This finding could suggest that attending classes online impacts students differently, but also that students have different stressors and ways of coping with the effects of the COVID-19 pandemic.

Implications for Research and Practice

Altogether, these findings pose some interesting reflections and implications for research and practice. In terms of making meaning of the findings, we hope that our data sheds some light on the complexity of the international student experience and how it is shaped by the intersection of various personal characteristics in addition to the institutional environment and government policies that limit their rights and security. Current circumstances such as federal policies related to immigration, work restrictions, financial aid (including emergency relief) are affecting international students' wellbeing and sense of belonging. By understanding some of the specific domains where international students are being challenged the most, we hope HEIs can actively design better programs and policies that favor more welcoming environments for international populations that go beyond utilizing social media hashtags and creating videos promoting an unrealistic view of the international student experience.

Based on this study's findings, future studies should focus on international student wellbeing and how they are coping with the effects of the pandemic and other immigration policies that are impacting their decision to remain in the United States. Furthermore, studies should find ways to understand international student social support and financial wellbeing before and after the move to online instruction. Researchers should also consider investigating how prospective international students are making their decision to study in the United States in comparison to other countries of study considering new developments

COVID-19 AND INTERNATIONAL STUDENTS

regarding increasing nationalistic sentiments and policies. Studies that utilize qualitative and/or mixed methods will be able to go beyond what the numbers are telling us.

Institutions and governments should pay strong attention to this population, as they are facing daily hassles regardless of where they are currently living. To begin with, HEIs should clearly and timely communicate with their students regarding any decisions they make in times of crisis. As the results point out, satisfaction with the universities' decision to move to online instruction differed according to level of study. This shows that i) international students are not all the same; and ii) that the response must be different according to each population. For instance, undergraduate students need more options on how to obtain social support than doctoral students. This can be done by offering different online and on-campus events for them to integrate with each other and with faculty and staff.

Institutions must also find ways to promote the socialization of these students in the university community in order to reduce feelings of psychological stress and isolation. Creating a 'global campus' means more than simply attracting large numbers of students, faculty, and staff from different backgrounds. Institutions need to look beyond the big melting pot and purposefully create an environment where diversity of identities and perspectives interact and not just coexist (Castiello-Gutiérrez, 2019). After actively attracting international students, HEIs need to prove that they care for them beyond their financial and academic contributions (Castiello-Gutiérrez & Li, 2020).

Initiatives that promote international student financial wellbeing should be encouraged. With COVID-19 impacting international students and their families capacity to afford the cost of attendance, institutions should focus on providing funding for single-sourced students with scholarships. Also, given immigration restrictions to work only/mostly at their university, international students need to be offered more possibilities for on-campus

COVID-19 AND INTERNATIONAL STUDENTS

work-study opportunities. Lastly, the pandemic also showed that when pressured, HEIs are able to quickly adapt their academic policies in ways that favor flexible ways of learning; therefore, beyond federal policies, HEIs could offer flexible ways for students to enroll and earn credits even when not physically present in a U.S. Campus. Hybrid models of offering an international degree should be further explored by colleges and universities.

References

- ACHA. (2020). *Supporting vulnerable campus populations during the COVID-19 pandemic*.
https://www.acha.org/documents/resources/guidelines/ACHA_Supporting_Vulnerable_Populations_During_the_COVID-19_Pandemic_August2020.pdf
- Alavi, M., Shafeq, S. M., Geramian, S. M., & Ninggal, M. T. (2014). International students' mental health and attitude toward counseling centers. *Journal of Applied Sciences*, *14*(16), 1871–1876.
- Arthur, N. (2017). Supporting international students through strengthening their social resources. *Studies in Higher Education*, *42*(5), 887–894.
- Bélanger, C. H., McCartney, K., Leonard, V. M., Lebrasseur, R., & Tu, J. (2013). Comparing Chinese and Canadian accounting students' expectations and experiences. *International Journal of Business and Management*, *8*(20), 117.
- Becker, M. A. S., Dong, S., Kronholz, J., & Brownson, C. (2018). Relationships between stress and psychosocial factors with sources of help-seeking among international students. *Journal of International Students*, *8*(4 SE-Research Articles).
- Bender, M., van Osch, Y., Slegers, W., & Ye, M. (2019). Social support benefits psychological adjustment of international students: Evidence from a meta-analysis. *Journal of Cross-Cultural Psychology*, *50*(7), 827–847.

COVID-19 AND INTERNATIONAL STUDENTS

- Benson-Eggleton, J. (2019). The financial circumstances associated with high and low wellbeing in undergraduate students: a case study of an English Russell Group institution Russell Group institution. *Journal of Further and Higher Education, 43*(7), 901–913. <https://doi.org/10.1080/0309877X.2017.1421621>
- Berry, J. W. (2006). Acculturative stress. In P. T. P. Wong & L. C. J. Wong (Eds.), *Handbook of multicultural perspectives on stress and coping* (pp. 287–298). Spring Publications. https://doi.org/https://doi.org/10.1007/0-387-26238-5_12
- Broton, K. M., Cady, C. L., & Goldrick-Rab, S. (2020). *Food insecurity on campus: Action and intervention*. Johns Hopkins University Press.
- Broton, K. M., & Goldrick-Rab, S. (2018). Going without: An exploration of food and housing insecurity among undergraduates. *Educational Researcher, 47*(2), 121–133.
- Bruening, M., Argo, K., Payne-Sturges, D., & Laska, M. N. (2017). The struggle is real: A systematic review of food insecurity on postsecondary education campuses. *Journal of the Academy of Nutrition and Dietetics, 117*(11), 1767–1791.
- Brunsting, N. C., Zachry, C., Liu, J., Bryant, R., Fang, X., Wu, S., & Luo, Z. (2019). Sources of perceived social support, social-emotional experiences, and psychological well-being of international students. *The Journal of Experimental Education, 1*–17.
- Burke, L. (2020, April 20). ‘A ghost town.’ *Inside Higher Education*.
<https://www.insidehighered.com/news/2020/04/20/students-campus-talk-about-experiences>
- Burns, J. (2020, July 29). International students turn to food banks in lockdown. *BBC News*.
<https://www.bbc.com/news/education-53552831>
- Campbell, T. A. (2015). A phenomenological study on international doctoral students’ acculturation experiences at a US university. *Journal of International Students, 5*(3), 285-299.

COVID-19 AND INTERNATIONAL STUDENTS

- Cantwell, B. (2015). Are international students cash cows? Examining the relationship between new international undergraduate enrollments and institutional revenue at public colleges and universities in the US. *Journal of International Students*, 5(4), 512–525.
- Castiello-Gutiérrez, S. (2019, April 8). Beyond the melting pot: International students on campus. *Inside Higher Education: The World View*. Retrieved from <https://www.insidehighered.com/blogs/world-view/beyond-melting-pot-international-students-campus>
- Castiello-Gutiérrez, S., & Li, X. (2020). We are more than your paycheck: The dehumanization of international students in the United States. *Journal of International Students*, 10(3), i–iv. <https://doi.org/10.32674/jis.v10i3.2676>
- Chen, H., Akpanudo, U., & Hasler, E. (2020). How do Chinese international students view seeking mental health services? *Journal of International Students*, 10(2), 286–305.
- Cheng, R. (2020, March 19). The COVID-19 Crisis and international students. *Inside Higher Education*. <https://www.insidehighered.com/views/2020/03/19/higher-ed-institutions-arent-supporting-international-students-enough-during-covid>
- Cho, J., & Yu, H. (2015). Roles of university support for international students in the United States: Analysis of a systematic model of university identification, university support, and psychological well-being. *Journal of Studies in International Education*, 19(1), 11–27. <https://doi.org/10.1177/1028315314533606>
- Freudenberg, N., Goldrick-Rab, S., & Poppendieck, J. (2019). College students and SNAP: The new face of food insecurity in the United States. *American Journal of Public Health*, 109(12), 1652–1658. <https://doi.org/10.2105/AJPH.2019.305332>
- Glass, C. R., Streitwieser, B., & Gopal, A. (2019). Inequities of global mobility: socioeconomic stratification in the meanings of a university education for

- international students. *Compare: A Journal of Comparative and International Education*, 1–18. <https://doi.org/10.1080/03057925.2019.1590180>
- Gómez, E., Urzúa, A., & Glass, C. R. (2014). International student adjustment to college: Social networks, acculturation, and leisure. *Journal of Park and Recreation Administration*, 32(1), 7–25.
- Han, X., Han, X., Luo, Q., Jacobs, S., & Jean-Baptiste, M. (2013). Report of a mental health survey among Chinese international students at Yale University. *Journal of American College Health*, 61(1), 1–8. <https://doi.org/10.1080/07448481.2012.738267>
- Hanbazaza, M., Ball, G. D., Farmer, A. P., Maximova, K., Farahbakhsh, J., & Willows, N. D. (2017). A comparison of characteristics and food insecurity coping strategies between international and domestic postsecondary students using a food bank located on a university campus. *Canadian Journal of Dietetic Practice and Research*, 78(4), 208–211.
- Heng, T. T. (2018). Coping strategies of Chinese international undergraduates in response to challenges in US colleges. *Teachers College Record*, 120(2), 1–42.
- Heusel, M., Sukkar, S., & Ujczko, D. (2020). *COVID-19: Unemployment benefits for temporary foreign workers*. <https://www.jdsupra.com/legalnews/covid-19-unemployment-benefits-for-37602/>
- Hughes, R., Serebryanikova, I., Donaldson, K., & Leveritt, M. (2011). Student food insecurity: The skeleton in the university closet. *Nutrition & Dietetics*, 68(1), 27–32.
- Humans Right Watch. (2020). *Covid-19 fueling anti-Asian racism and xenophobia worldwide*. <https://www.hrw.org/news/2020/05/12/covid-19-fueling-anti-asian-racism-and-xenophobia-worldwide>
- Hwang, B. J., Bennett, R., & Beauchemin, J. (2014). International students' utilization of counseling services. *College Student Journal*, 48(3), 347/354.

- Juan, W. (2020, April 7). Racism and Covid-19: A Chinese student's perspective. *Castleton Spartan*. <http://www.castletonspartan.com/2020/04/07/racism-and-covid-19-a-chinese-students-perspective/>
- Khanal, J., & Gaulee, U. (2019). Challenges of international students from pre-departure to post-study. *Journal of International Students*, 9(2), 560–581.
- Laban, S., Jackson, E., Maynard, M., & Loring, P. A. (2020, June 12). Student food insecurity: a problem before, during and after COVID-19. *University Affairs \ Affairs Universitaires*. <https://www.universityaffairs.ca/opinion/in-my-opinion/student-food-insecurity-a-problem-before-during-and-after-covid-19/>
- Lee, J. J. (2017a). Neo-nationalism in higher education: case of South Africa. *Studies in Higher Education*, 42(5), 869–886. <https://doi.org/10.1080/03075079.2017.1293875>
- Lee, J. J. (2017b). *Removing the Blinders: Neo-racism and international students*. <https://www.nafsa.org/professional-resources/research-and-trends/trends-insights>
- Lee, J. J., Jon, J.E., & Byun, K. (2017). Neo-racism and neo-nationalism within East Asia. *Journal of Studies in International Education*, 21(2), 136–155.
- Lee, J. J., & Castiello-Gutiérrez, S. (2019). Engaging international students at U.S. higher education institutions. In S. J. Quaye & S. R. Harper (Eds.), *Student Engagement in Higher Education: Theoretical Perspectives and Practical Approaches for Diverse Populations* (3rd ed., pp. 107–129). Routledge, Taylor & Francis Group.
- Lee, J. J., & Rice, C. (2007). Welcome to America? International student perceptions of discrimination. *Higher Education*, 53(3), 381–409.
- Li, G., Chen, W., & Duanmu, J.-L. (2010). Determinants of international students' academic performance: A comparison between Chinese and other international students. *Journal of Studies in International Education*, 14(4), 389–405.

COVID-19 AND INTERNATIONAL STUDENTS

Liao, K. (2020, February 18). Fear, discrimination, support: Chinese international students talk coronavirus outbreak. *The Rice Thresher*.

<https://www.ricethresher.org/article/2020/02/chinese-international-students-talk-coronavirus-outbreak>

Lomax, R. G., & Hahs-Vaughn, D. L. (2012). *An Introduction to Statistical concepts* (3rd ed). Routledge/Taylor & Francis Group.

Miller, T. E. (2005). *Promoting reasonable expectations: aligning student and institutional views of the college experience* (1st ed.). Jossey-Bass.

Marinoni, G., Van't Land, H., & Jensen, T. (2020). *The impact of COVID 19 on higher education around the world: IAU Global Survey Report*. International Association of Universities. https://www.iau-aiu.net/IMG/pdf/iau_covid19_and_he_survey_report_final_may_2020.pdf

Martel, M. (2020). *COVID-19 effects on US higher education campuses: From emergency response to planning for future student mobility*. <https://www.iie.org/Connect/COVID-19/>

Mazzarol, T., & Soutar, G. N. (2002). "Push-pull" factors influencing international student destination choice. *International Journal of Educational Management*, 16(2), 82–90.

McCartney, D. M., & Metcalfe, A. S. (2018). Corporatization of higher education through internationalization: The emergence of pathway colleges in Canada. *Tertiary Education and Management*, 24(3), 206–220.

Mesidor, J. K., & Sly, K. F. (2014). Mental health help-seeking intentions among international and African American college students: An application of the theory of planned behavior. *Journal of International Students*, 4(2), 137–149.

Minutillo, S., Cleary, M., Hills, A. P., & Visentin, D. (2020). Mental health considerations for international students. *Issues in Mental Health Nursing*, 1–6.

COVID-19 AND INTERNATIONAL STUDENTS

- Misra, R., Crist, M., & Burant, C. J. (2003). Relationships among life stress, social support, academic stressors, and reactions to stressors of international students in the United States. *International Journal of Stress Management*, *10*(2), 137.
- Mostafa, H., & Lim, Y. (2020). Examining the relationship between motivations and resilience in different international student groups attending US universities. *Journal of International Students*, *10*(2) 306-319. <https://doi.org/10.32674/jis.v10i2.603>
- Olauson, C., Engler-Stringer, R., Vatanparast, H., & Hanoski, R. (2018). Student food insecurity: examining barriers to higher education at the University of Saskatchewan. *Journal of Hunger & Environmental Nutrition*, *13*(1), 19–27.
- Poyrazli, S. (2015). Psychological symptoms and concerns experienced by international students: Outreach implications for counseling centers. *Journal of International Students*, *5*, 306–312. <https://doi.org/10.32674/jis.v5i3.424>
- Robertson, S. (2011). Cash cows, backdoor migrants, or activist citizens? International students, citizenship, and rights in Australia. *Ethnic and Racial Studies*, *34*(12), 2192–2211.
- Sherry, M., Thomas, P., & Chui, W. H. (2010). International students: A vulnerable student population. *Higher Education*, *60*(1), 33–46.
- Shu, F., Ahmed, S. F., Pickett, M. L., Ayman, R., & McAbee, S. T. (2020). Social support perceptions, network characteristics, and international student adjustment. *International Journal of Intercultural Relations*, *74*, 136–148.
- Smith, R. A., & Khawaja, N. G. (2011). A review of the acculturation experiences of international students. *International Journal of Intercultural Relations*, *35*(6), 699–713.
- Tannock, S. (2018). The question of international tuition fees: Cash cows and silent elephants. In S. Tannock (Ed.), *Educational Equality and International Students: Justice Across Borders?* (pp. 125–152). Springer International Publishing.

COVID-19 AND INTERNATIONAL STUDENTS

The White House. (2020). *Remarks by President Trump, Vice President Pence, and Members of the Coronavirus Task Force in Press Briefing*. Remarks.

<https://www.whitehouse.gov/briefings-statements/remarks-president-trump-vice-president-pence-members-coronavirus-task-force-press-briefing-5/>

Tran, L. T., & Vu, T. T. P. (2018). 'Agency in mobility': towards a conceptualisation of international student agency in transnational mobility. *Educational Review*, 70(2), 167–187.

Van Horne, S., Lin, S., Anson, M., & Jacobson, W. (2018). Engagement, satisfaction, and belonging of international undergraduates at U.S. research universities. *Journal of International Students*, 8(1), 351–374. <https://doi.org/10.5281/zenodo.1134313>

Wang, L. (2020). Are students satisfied? The mediating role of affect-based trust in student-teacher intercultural communication. *Journal of Psychological and Educational Research*, 28(1), 7–23.

Wang, L., & DeLaquil, T. (2020). The isolation of doctoral education in the times of COVID-19: recommendations for building relationships within person-environment theory. *Higher Education Research & Development*, 1–5.

Wu, H., Garza, E., & Guzman, N. (2015). International student's challenge and adjustment to college. *Education Research International*, 2015, 1–9.

Yang, Q., Orrego Dunleavy, V., & Phillips, J. R. (2016). Are you satisfied? Exploring the mediating effects of mentoring communication strategies in predicting Chinese international graduate students' program satisfaction. *Communication Education*, 65(2), 182-203.

Yasin, Y. M., & Bélanger, C. H. (2015). Key determinants of satisfaction among international business students in regional context. *International Journal of Business and Management*, 10(9), 19.

COVID-19 AND INTERNATIONAL STUDENTS

Yu, B., Bodycott, P., & Mak, A. S. (2019). Language and interpersonal resource predictors of psychological and sociocultural adaptation: International Students in Hong Kong.

Journal of Studies in International Education, 23(5), 572–588.

Zhou, J., & Cole, D. (2017). Comparing international and American students: involvement in college life and overall satisfaction. *Higher Education*, 73(5), 655–672.