

International Doctoral Students' Sense of Belonging, Mental Toughness, and Psychological Well-Being

Shaoan Zhang^{a*}, Chengcheng Li^b, and Daniel L. Unger^a

^a*University of Nevada, Las Vegas, USA*

^b*The Open University of China, China*

*Corresponding author: Email: shaoan.zhang@unlv.edu

Address: University of Nevada, Las Vegas, Nevada, USA

Address: institution, state/province, country

ABSTRACT

This study describes international doctoral students' experiences and examines the relationships between their academic goals and psychological well-being and their sense of belonging and mental toughness. We used a multiple case study design based on three international doctoral students enrolled in education programs in the United States. Findings from six interviews about their experiences with their faculty mentors and peers showed that their sense of belonging and mental toughness related to academic goals and psychological well-being. Their sense of belonging impacted their academic goals or psychological well-being based on communication and relationships with their mentors and support from their peers. Also, their mental toughness impacted their academic goals or psychological well-being based on cognition, behavior, and affection. This study calls for faculty mentors and students to communicate early namely at the on-set of their programs and to establish a positive relationship that caters to cultural acculturation, academic success, and sense of belonging.

Keywords: international doctoral students, mental toughness, psychological well-being, sense of belonging

Received January 17, 2021; revised March 11, 2021; accepted April 20, 2021

INTRODUCTION

The 2020 Open Doors report recorded 374,435 international graduate students in the U.S. (Institute of International Education, 2020). International graduate students, particularly those from Asian countries, face challenges in seeking financial support, learning institutional cultures, American cultures, understanding program requirements, and learning about survival strategies (Li et al., 2011; LoCastro & Tapper, 2006; Myles & Cheng, 2003). Although international doctoral students share many of the same challenges as international students in undergraduate and masters programs, international doctoral students often face more challenges than international undergraduate students because many are assigned to teach courses or conduct research as graduate assistants and are required to complete their programs with an average of 4-6 years (Li et al., 2011; LoCastro & Tapper, 2006).

In U.S. higher education institutions, doctoral students are assigned to work with a faculty mentor. In this paper, we use the term “mentor” to refer to faculty mentors. Mentors provide academic advice and guidance to doctoral students from the beginning of the program. As such, the relationships international doctoral students have with their mentors may influence both their academic goals and their psychological well-being. Recent research has focused on whether international undergraduate students’ sense of belonging was influenced by the relationships with their faculty and peers (Glass et al., 2015; Yao, 2016). In comparison, because doctoral programs require students to work with their mentors over several years, their sense of belonging may change over time to influence their academic goals and psychological well-being (Marijanovic et al., 2021). Thus far research on mental toughness (MT) has focused mainly on athletes. However, the core concepts of MT may help to better understand international doctoral students (Coulter et al., 2010; Jin & Wang, 2018). In our study, we used theory on sense of belonging together with MT to describe international doctoral students’ experiences during their doctoral programs. The following research question guided our research: How do international doctoral students’ sense of belonging and mental toughness relate to their academic goals and well-being?

THEORETICAL FRAMEWORK

Sense of Belonging

Belongingness is a basic human motivation. For Marlow (1968), human beings share a strong need to belong and this is sufficient to influence affection and/or behavior (Strayhorn, 2019). A person’s perceived belongingness can give the person the confidence to ask for help, take advantage of opportunities, feel stability in their work, and follow a successful path. In the college setting, sense of belonging is defined as “students’ perceived social support on campus, a feeling or sensation of connectedness, and the experience of mattering or feeling cared about, accepted, respected, valued by, and important to the campus community or others on campus such as faculty, staff, and peers” (Strayhorn, 2019, p. 4).

International students are uniquely impacted by the need to belong. They often experience feelings of isolation from peers and mentors and this can yield negative

consequences (Yao, 2016). The absence of a sense of belonging is described as “sense of alienation,” social isolation, loneliness, or marginality (Hagerty et al., 2002). In turn, this can undermine academic performance (Walton & Cohen, 2007), psychological well-being (Baumeister & Leary, 1995), and one’s plans to stay in college (Strayhorn, 2019).

Importantly, sense of belonging is characterized by persistent positive personal relationships (Baumeister & Leary, 1995). Relationships are critical to an individual’s sense of belonging. In academic environments, relationships can provide opportunities for success (Walton & Cohen, 2007). For international doctoral students, relationships are particularly important as they are new to both the living and academic environments. In order to survive and succeed, they often rely on their mentors and peers to provide guidance and advice, research opportunities, connectedness with the department, etc. Students who have strong relationships with peers or mentors are better suited to receive critical feedback and leverage new learning opportunities (Walton & Cohen, 2007). Without these relationships, international doctoral students may feel they are unable to receive or even seek the needed guidance to complete milestones such as funding, dissertation completion, or obtain research opportunities.

Psychological Well-Being

Psychological well-being is characterized by positive emotions such as happiness (Shafaei et al., 2018). It is the intrinsic belief that life is fulfilling, worthwhile, and meaningful (de Souza & Halafoff, 2018). Psychological well-being can be volatile in international students due to heightened risk, uncertainty, and insecurity with cultural and financial issues (Eckersley, 2011). International doctoral students often rely on their mentors to secure funding and other important milestones in their doctoral program. For example, for international doctoral students, funding is critical to their success and persistence in program completion. Often this can be a source of stress or hardship. Without funding, participation in their program is at risk, and international doctoral students can lose their legal status in the country. If a student feels they can work with their mentor to secure important funding opportunities, they will feel less stressed about the longevity of their scholarship; but international students may develop negative emotions if their relationship with their mentor is poor.

Psychological well-being is also important for international students due to its critical role in the acculturation process (Shafaei et al., 2018). International students must adjust to new norms and behaviors, which make their academic journey more difficult than domestic students. When an international student arrives in the country of study, they are faced with significant cultural differences, including new customs, social norms, academic expectations, relationship dynamics, and experiences. Additional stressors, such as pressure to complete their program within the time of authorized stay, can lead to additional hardship and negative emotions. Psychological well-being can affect the acculturation of international students, which in turn impacts student success (Shafaei et al., 2018).

Mental Toughness

Mental Toughness (MT) refers to the multidimensional and psychological attribute that involves cognitive, behavioral, and affective dimensions allowing one to cope better with adversity in stressful situations (Harmison, 2011; Jones et al., 2007). Sheard et al. (2009) identified three aspects of MT: confidence, constancy, and control. Confidence refers to an individual’s belief in their ability and the resources they possess

to overcome difficulties (Jin & Wang, 2018; Sheard et al., 2009). Constancy refers to the notion that individuals are determined to succeed and make more efforts to realize their goals even with higher pressure (Jin & Wang, 2018; Sheard et al., 2009). MT is associated with an internal locus of control and self-efficacy (Gibson, 1998); thus, control refers to the individual's sense of being in control of adverse situations and being able to self-regulate their negative emotions rather than stay helpless (Clough et al., 2002; Jin & Wang, 2018; Sheard et al., 2009). Since sense of belonging sufficiently influences affection and/or behavior (Strayhorn, 2019), sense of belonging may relate to MT.

Research in MT has investigated performance-based outcomes in sport psychology, where athletes experience anxiety while participating in demanding processes (Jin & Wang, 2018). Athletes with higher MT tend to deal effectively with their pain and are less likely to regard it as threatening (Levy et al., 2006). Similarly, athletes with lower MT are more inclined to skip training under conditions of higher pressure (Levy et al., 2006; Petrie et al., 2014). Since there is a paucity of research on MT with non-athlete populations, we explore the application of MT to non-athlete individuals who need to cope with adverse situations (Crust, 2008).

In recent literature, MT has been conceptualized from the perspective of a coping strategy (Coulter et al., 2010) and also has been studied for non-athlete populations in terms of mental health and psychological well-being (Jin & Wang, 2018). Gerber et al. (2012) found that MT functions as a buffer to alleviate college and high school students' stress on depressive symptoms. Similarly, a longitudinal study found that a higher level of MT predicts adolescents' fewer depressive symptoms and a higher level of life satisfaction over time (Gerber et al., 2013). In addition, Jin and Wang (2018) found that MT mediated the relationship between attachment anxiety and to well-being variables of psychological distress and life satisfaction.

In this study, MT was used as part of our theoretical framework to explore international doctoral students' academic goals and psychological well-being. Based on existing literature and theories, we argue that higher MT enables international doctoral students to strive for academic goals and positive psychological well-being by concentrating on their demanding tasks, self-regulating their emotions, and changing cognitions to deal with stressful situations. We also argue that although stressors such as cultural differences, language barriers, and financial issues can be challenging, international doctoral students with greater MT may perceive the challenges as opportunities for growth and remain determined to take actions to handle the adversity positively; thus, they may receive professional development, achieve academic goals, and experience more satisfaction and less distress in life.

RESEARCH METHODS

Using a multiple case study approach, we explored international doctoral students' sense of belonging and MT. Compared with a single-case design, a multiple-case design is considered to yield more convincing evidence and conclusions (Yin, 2018). It ensured the researchers delve into international doctoral students' profound personal, sociocultural, and professional experiences as evidence for the sense of belonging and MT.

Participants and the Context of the Study

Four criteria were followed when selecting participants in this study. First, participants had to be international doctoral students. Second, participants had to be non-native English speaking although they all passed admission requirements such as TOFLE and GRE. Third, their majors related to education in the same program in a southwest university where one researcher was able to observe the participants' lives during their stay in the program. Last, the participants did not complete the program with their first mentor and switched their mentor in their second or third year; this standard allowed us to see their common experiences.

Participants included one male, Jay, and two females, Lily and Cristal. Jay's academic goal was to seek opportunities to do research and to find a job at a university in the U.S. After he had difficulties communicating with his mentor, he left the program in his third year and moved to another program. Jay's mentor was a professor who worked in the university for many years. Although she shared her American culture with Jay by inviting him to her home for the holidays, she did not work well with Jay on research; language was also a barrier which prevented them from communicating well. Lily was in her twenties when she entered her program. She held a master's degree from the U.S. and her parents supported her doctoral studies. She was unsure what she would do in the future. Lily chose a different mentor and program in her third year as her initial mentor left the program. Lily's mentor shared the home culture and language with her mentor. He believed that he knew Lily's culture and how to mentor her. However, this caused conflict because their expectations did not align. Cristal's mentor was a professor who allowed her to work on her own. Although he was a successful scholar, he was not approachable to Cristal.

Like many international students, Jay, Lily, and Cristal left their cultural norms, rules, and expectations behind to participate in a new cultural and academic experience that would provide valuable skills and knowledge. As international students, Jay, Lily, and Cristal experienced unique challenges. Faced with new and difficult learning environments, they had to adapt to new academic expectations that differed from their past experiences, reconcile their own expectations of faculty, peer, and community support, and were required to secure financial resources and housing in an unknown place.

Data Sources and Data Collection

Case study uses observations, interviews, documents, or other materials to develop a holistic description of the phenomenon (Creswell & Poth, 2018). The data for this study included two rounds of in-depth interviews with the three international doctoral students (i.e., six individual interviews in total) to obtain a broader and deeper understanding of their experiences, feelings, and the process of developing their sense of belonging and MT. Each interview was individual and semi-structured and lasted between 30-40 minutes.

During the first-round of interviews, we focused on participants' personal struggles with survival as international doctoral student (e.g., incomes, families, and living environment), language and cultural issues (e.g., teaching and communication with peers or professors), and professional issues (e.g., course completion, presentations, publication, and teaching assignments). The first author of this article moderated the interview while a graduate assistant took notes and asked follow-up questions as needed.

After the first round of interviews, we immediately discussed the three individual semi-structured interviews and developed specific follow-up questions for each participant for the second round of interviews to clarify or further explore certain questions. All the interviews were digitally recorded and transcribed verbatim by temi.com (<https://www.temi.com/>), and was checked by the graduate assistant to ensure the accuracy of the transcription.

Data analysis

Within-case analysis of individual interviews was used to provide a detailed description of each participant's experiences of their doctoral programs and identify themes (Creswell & Poth, 2018). A cross-case analysis of the six interviews was used to conduct a thematic analysis across each of the cases to identify patterns, similarities, or dissimilarities (Creswell & Poth, 2018). In the within-case analysis, three researchers reviewed all the transcripts line-by-line. When meaningful segments of the text (e.g., keywords, phrases, and sentences) emerged to answer the research question, codes were assigned (Saldaña, 2016). Coding was also informed by MT and sense of belonging theory (Yin, 2018).

One of the researchers shared similar experiences to the international doctoral students in this study, and has rich research knowledge and experience of international students. Therefore, he interpreted the findings and coded the transcriptions based on his personal and research knowledge and experience of international doctoral students. Codes were clustered together to form categories, which were constructed to develop themes (Miles et al., 2020). For example, code patterns were assigned the categories of cognition (e.g., "Independence"), behavior (e.g., "Determination"), and affection (e.g., "Regulating negative emotions"). These categories then weaved into the theme of mental toughness.

In the cross-case analysis, replication was used as a method of triangulation that aims to examine the relationship among the findings within a case and compares the patterns and similarities across the cases, looking for similarities and patterns. This process was achieved by reviewing data multiple times to better understand the collected data and identify the themes that arose from the transcriptions (Lindlof & Taylor, 2002). Theoretical replication was attained after similarities were found among cases only for anticipated causes. Reliability of the data analysis was enhanced by comparing coding across the three researchers (Creswell & Poth, 2018). When disagreements occurred, the researchers discussed to come to an agreement.

FINDINGS

We described international doctoral students' experiences of their doctoral programs with sense of belonging and mental toughness to examine their academic goals and psychological well-being. Two categories were identified under the theme of sense of belonging, which impacted academic goals or psychological well-being: community and relationships, and peer support and psychological well-being. We also explored evidence concerning three areas, where mental toughness may impact academic goals or psychological well-being: cognition, behavior, and affection.

Sense of Belonging

Expectation, communication, and relationships. In early doctoral program, support from academic mentors was critical to international doctoral students. As international students, Jay, Lily, and Cristal relied on their mentors for valuable information such as scholarship opportunities, graduate assistantships, research support, and other academic advising. Communication between the students and their mentors affected the students' sense of belonging. Lily, Jay, and Cristal often relied on their mentors to help them make important decisions about their programs. When they could not communicate effectively, they were less able to complete critical tasks.

Jay expected his mentor to provide important guidance and direction at the onset of his doctoral program. Jay discussed that his mentor was very proud to work with international students, and that he loved to hear her stories about China and compared their cultural differences. He also felt that his mentor was enthusiastic about sharing American cultures, even inviting them to holiday celebrations. Unfortunately, his mentor did not communicate with him about his academic needs. Jay's mentor knew that financial needs such as a graduate assistantship was critical to international students. However, she did not know Jay's academic goals of conducting research, publishing, and finding a job in academia. Jay did not perceive the relationship with his mentor met his expectations. Discussing his early relationship with his mentor, he noted:

At the very beginning, we didn't have good communication with each other's expectations. So later on, I never told her my expectations of her. For example, what kind of support for the scholarship [the mentor] should give me. She didn't say anything about her expectation of me, either.

Lacking a strong relationship with his mentor, Jay did not feel he was a valued part of his program community and shared that his scholarship was affected by the limited relationship with his mentor.

Cristal arrived in her new program with an expectation of how her assigned mentor would support her academic experience. Cristal expected rigid and regular communication from her mentor, but she found herself facing hurdles when trying to communicate. Early on, she expected that important communications regarding her program needs would be initiated by her mentor. Yet, she noted that "he [Cristal's mentor] has rarely approached me and emailed me and tried communicating with me first, but I will always make a move first." This meant that Cristal had to navigate the requirements of her program, plan for significant events, and build an understanding of her position in the program without the help of her mentor whom she presumed would guide her. Cristal's mentor was not available for meetings with his students, particularly for Cristal who badly needed support in research. Although this mentor was known as a good researcher in his field, his success did not mean anything to Cristal; she could not connect with him. Cristal felt isolated, deserted, and helpless.

Lily shared a similar experience with Jay and Cristal. She felt that her mentor's expectations of her work and ability did not match her actual progress and performance. A mismatch between Lily's initial mentor's expectations and her own perception of her ability led her to feel emotionally separated from the program. Lily's mentor came from the same country as her and pursued his doctoral program at a research-intensive university. Years ago, her mentor went through very tough financial problems and other adversities but survived and completed the doctoral program. Lily reported that there was a mismatch between her and her mentor's expectations. She felt that her cultural

perspectives did not align with his due to generational and differences in U.S. culture although both of them shared the same cultural background.

Lily was a strong girl from China and had completed her master's degree in a very prestigious program. However, she felt frustrated that she could not satisfy her mentor's expectation of her work although she believed she was a hard-working student. Trying her best and utilizing the knowledge she brought with her did not help her meet her mentor's research expectations. Lily shared an example of how her mentor expected her to be able to complete a research task, but she felt unprepared:

My mentor gave me some data, say 'Let's analyze it, and let's try to write a paper.' You know, if he gave it to me right now, I can definitely handle it. But at that time, I have no idea what to do. Like, I need a hand-by-hand guide.

Lily also shared her own expectations of her initial mentor, "I feel like if a professor can sit beside me and show me how he did it step by step and then I just mock[copy] him that will be perfect." Lily summarized her relationship with her initial mentor, and commented about how their expectations differed:

I did not know he had such a high expectation of me. I didn't know that he thought I knew ABCDEFG. But actually, I only knew ABC at the beginning of my program. So that's the big difference. I didn't know that he expected so much already from me. That's different from what I thought.

Peer support and psychological well-being. As international doctoral students, Lily, Jay, and Cristal faced unique challenges that they would have to overcome to succeed. Peers provided support which helped them adjust to new cultural rules, norms, and expectations.

As a graduate assistant, Lily was assigned to be a site supervisor for student teachers in her second year, and she was not only required to learn how to complete the duties of her job, but also had to learn to drive and navigate in a new system of roads and traffic laws. Unsure how to prepare, a peer provided her with a vehicle and guidance to fulfill her need to drive:

She[Lily's peer] helped me a lot. She taught me how to drive. So, I still remember one day we went to a parking lot and she taught me how to drive her Mercedes. That's a real risk for her, but I really appreciate it a lot.

Describing another peer relationship, Lily noted the support from one of her friends, a senior in the program and also from the same country. She "helped me a lot, you know. Yes. She's like Wikipedia to me then. Everything I had a question, I went to ask her, she always helped to answer." Similarly, she went to other classmates for any possible resources to help her survive.

Lily survived with her peers' support. However, Jay and Cristal were not that lucky. Jay discussed his belongingness in the community early on, noting that it negatively impacted his experience:

There is no team or there's no community that I belong to. It's just like, you know, whenever others did anything, nobody mentioned me or nobody came over to me to ask me to join them. But I just have that kind of impression that nobody cares about me.

Mental Toughness

Cognition. Two interviewees in this study believed that they had the ability to find resources to cope with the difficulties related to academic goals or psychological

well-being. They connected with peers and mentors by asking questions. When she encountered a problem, Lily said that:

At first you always feel like you lost yourself, but later, you know how to solve the problem. You just ask people, right? Ask your mentor, ask your peers, ask S, my peer mentor. So, ask around and then you'll figure it out.

Cristal also relied on people around her as resources to overcome difficulties. She said, "I think you need to talk to someone, especially when you struggled. Either your mentor or the departure chair, or all the time get help from your classmates." Lily discussed the importance of being independent and trying to resolve her problems when in difficult situations rather than seeking help from others:

I try to get as much help as possible, but I don't want to be an annoying person who always depends on others, right? Everybody was busy. Nobody could help me all the time when I needed them. I cannot ask for help with everything. I am aware that the first one or two years probably are very difficult. And also, I was hoping to get more practice by myself. So, I just need to hang on there, keep practicing.

When facing challenging situations, Lily also took advantage of the challenges as new academic opportunities grew:

My initial mentor, actually he had a very high expectation of me...I think I did not reach what he expected...I have to work even harder and that really gave me a hard time, a lot of pressure. But I know it's good for me to grow up, you know, academically. If you just do what you are good at, then you will not grow. So, I was doing something I was not good at and I learned from everybody. I got pressure, but I grew up."

Behavior. Interviewees also shared how they were determined to succeed although they were in adverse situations. Lily expressed her strong determination and said: "You choose [to come to the U.S.] and you just go ahead and cannot go back [to your home country] ... I never think about giving up." Jay also shared his determination to succeed through more efforts. He said:

I knew clearly that I couldn't let the burden and the pressure destroy me ... whatever situation you are in, good situation, bad situation, personal efforts, personal agency, that is very important. Willing to work hard, that's one thing.

Cristal described how she relied on self- motivation and personal desire to achieve academic goals:

Try not to avoid difficulties, and all the time I can come to difficulties. So, I cannot just avoid them and ask myself, 'Well, just forget about it, leave it alone? No, I will not!' Instead, I think as a becoming professional researcher or educator, you have to know how to solve the problem when you're facing the problems.

International doctoral students went beyond basic requirements to be successful. For example, by working hard to better her understanding of English, Lily made extra efforts to achieve her academic goals:

Well, you still need to get a good grade, so what I must do is to just work hard, read, and write. Other people may need to take half an hour, I may need three hours. So, I just have to do it this way.

Affection. Interviewees also took control in difficult situations, regulated their negative emotions, and took initiatives to solve problems. Lily managed her frustration when she did not match her mentor's expectation of her, and she told herself that it was an opportunity to learn and grow:

Dr. X had such a high expectation of me, but I did not really match that much ... It [is] just more frustrating because I always think it's so hard. But you got trained so that you grew up.

Cristal also showed how she managed her negative emotions when facing problems:

I think because I'm a positive person. So, whenever I am facing any challenges, well, you know, it is normal that people will think negatively. But, you know, I will just always look on the brighter side. Like, okay, it's not worse. So, the issues here are in front of you. Solve the problem first!

Jay was very concerned about his graduate assistantship as it was his only source of finance. Cristal noted that she "was even thinking if [she] cannot get graduate assistantship anymore, [she] would just go back home." Cristal did not get her assistantship at the beginning of her program and she had to balance and control her schoolwork and jobs. She said:

So financial issues, I would say, are really important and it is the second factor that influences my resilience. So, I just have to always find a balance between my job outside the campus and between my school work. So yeah, I have to survive and pay my bills. I have to spend a lot of time working on my schoolwork.

Lily had financial issues during summer; she took control by managing her budget to survive. All along, she remained committed to the academic plan in spite of the financial issues:

So, in the summer, for the whole three months, I have no money. But the good thing is I was a good planner, so I saved every month. That's how I survived the first few years.

DISCUSSION

Expectation and Communication with Mentors and Peers

Each interviewee met their challenges in unique ways, building a sense of belonging in their academic programs and leveraging their mental toughness to build a repertoire of support from their peers, faculty mentors, and community resources.

A person's sense of belonging may generate the confidence to ask for help, take advantage of opportunities, feel confident in achieving goals, and cherish hope for success. Previous research found that undergraduate international students' sense of belonging relates to their experiences (Glass et al., 2015; Yao, 2016). Student-faculty relationships include students' mentors, instructors, university mentors, and other faculty who play a pivotal role in student success. Student-faculty relationships are affected by students' expectations of their mentors, and by the quality of communication between

students and mentors. For international doctoral students, guidance from mentors is critical. It helps with adapting to new social and academic culture, learning about the requirements of their programs, and connecting to valuable academic and financial resources (Marijanovic et al., 2021).

In our study of three students, we found cultural factors influenced their sense of belonging. Perceiving the relationship with their mentors as insufficient, interviewees reported they lacked the sense that they belonged as important participants in their programs. Similar to Jay, Lily, and Cristal, international doctoral students may hesitate to express their different perspectives or let their mentors know their perspectives that mismatch their mentors' expectations because of the individual character, cultural differences, or even out of fear of losing their graduate assistantship. These factors affected international doctoral students' ability to reach out to their mentors and prevented them from discussing important individual needs. As their expectations of mentors differed from reality, they felt anxious, frustrated, and confused although they tried to meet their mentors' expectations of them.

Inclusion in academic communities related to students' experience with their programs. Through their relationships with peers, faculty, and community, the international students were able to overcome obstacles. Their sense that they could ask questions, seek help and resources, and their awareness of the resources available to them were all experiences that relate to their sense of belonging. In the present study, students showed their efforts and outcomes of building community relationships with their peers, to develop their sense of belonging. Using these resources to solve problems plays a role in the students' psychological well-being and helped reduce stress and setbacks.

Psychological Well-Being

International doctoral students with higher MT believed that they had the ability to overcome difficulties, were determined to succeed, and self-regulated the negative emotions (Sheard et al., 2009). The findings of this study affirmed that a higher level of MT predicts a higher level of psychological well-being (e.g., life satisfaction) (Gerber et al., 2013; Jin & Wang, 2018). For example, Lily relied on her ability to take initiatives to solve problems; she managed her money for survival over the summer, made extra efforts on her coursework to get higher grades. Lily's MT made her cope positively with the adverse situation allowing her to achieve her academic goals. She did not feel too distressed and did not give up. From the product-oriented perspective, Lily was satisfied with her academic performance. However, from the process-oriented perspective, Lily may internalize her difficulties because her MT enabled her to overcome difficulties. In other words, Lily's symptoms of distress during the process may be salient to her but not to her mentors or others because she could bear it. Her mental toughness led Lily to internalize her stresses, which prevented her mentor from seeing the necessity to respond to her stresses. Although international students showed their efforts in handling their problems, the findings of the study indicate the importance of mentors' expectation and communication to the international students' well-being.

Students regarded their friends and peers as key resources to support their academic development and psychological well-being. This finding showed how international doctoral students have strived for success in their doctoral studies. This may

be influenced by their home culture and values of hard-work which allowed them to challenge themselves, and overcome difficulties with sacrifices for success in the future. We commend international students' determination and efforts when they may keep their psychological issues among themselves such as stresses and anxieties that come from their personal life, financial situations, etc.; however, if those internalized psychological issues were always ignored by students themselves, mentors, or programs, it may negatively affect their academic goals or psychological well-being in the long run (Baumeister & Leary, 1995; Hagerty et al., 2002; Yao, 2016) and the completion of their programs (Strayhorn, 2019; Walton & Cohen, 2007). Some psychological well-being issues were caused by cultural factors (Eckersley, 2011). The change of culture from China to the U.S. had intangible and pervasive effects on the three international doctoral students' psychological well-being, such as heightened risk, uncertainty, and insecurity (Eckersley, 2011).

IMPLICATIONS

The findings of our study suggest that in mentoring international doctoral students, it is imperative that international students should know the program requirements and learn to communicate with their mentors in a way that helps mentors know their cultures and difficulties. International students need to adjust to new norms and behaviors (Shafaei et al., 2018). Passing the university-required language proficiency tests (e.g., TOEFL and GRE) does not guarantee their success in doctoral programs. More work for the programs should be done to prepare international students for their first-year experience. For undergraduate students, the first-year experience courses are created to enhance their retention and completion, so it is an imperative with international doctoral students too.

Meanwhile, mentors need to treat each student with respect regarding their cultural background and capability at the beginning of the program and establish a positive relationship that enhances the sense of belonging. Mentors must learn about students' cultures that play into communication with students related to new customs, social norms, academic expectations, relationships, etc. (Shafaei et al., 2018) to ensure their smooth cultural acculturation and academic success. Even though Lily was from the same home country as her mentor, it did not ensure that the mentor and the student could communicate well.

While this study helped understand students' experiences in working with mentors, we have yet to know how their experiences influenced their academic performance without more cases, especially using a quantitative research design. While we aimed to understand how a sense of belonging involves more relationships and mental toughness; it also involve more individual efforts to work together. Further research may create a new theoretical lens that includes both inter-relational and individual characteristics of international doctoral students when looking at sense of belonging of international doctoral students.

Our study has its limitations. It focused on international doctoral students in the fields of education. A larger study on the experiences of international students across multiple fields, programs, or institutions would provide a more comprehensive picture of international doctoral students' experiences. Also, students in the study shared Asian

backgrounds and cultures, which mean that the participants may only represent a small section of international students.

Future studies may discuss the experiences of students from diverse international origins. Additionally, future research may collect data from both mentors and international doctoral students. Adding experiences of mentors will provide researchers with different perspectives to examine the process, interaction, and actions of both mentors and students. Also it is important to compare international doctoral students to domestic doctoral students to assess the similarities and differences in their sense of belonging and mental toughness. Such research, will help us understand the support needed for both mentors and students. Lastly, although this research explained some relationships between the sense of belonging and mental toughness, more research is needed to know the impact of the relationships on students' academic goals and psychological well-being.

REFERENCES

- Baumeister, R. F., & Leary, M. R. (1995). The need to belong: Desire for interpersonal attachments as a fundamental human motivation. *Psychological Bulletin*, *117*(3), 497-529. <http://dx.doi.org/10.1037/0033-2909.117.3.497>
- Clough, P., Earle, K., & Sewell, D. (2002). Mental toughness: The concept and its measurement. In I. Cockerill (Ed.), *Solutions in sport psychology* (pp. 32-45). Thomson.
- Coulter, T. J., Mallett, C. J., & Gucciardi, D. F. (2010). Understanding mental toughness in Australian soccer: Perceptions of players, parents, and coaches. *Journal of Sports Sciences*, *28*(7), 699-716. <https://doi.org/10.1080/02640411003734085>
- Creswell, J. W., & Poth, C. N. (2018). *Qualitative Inquiry and Research Design: Choosing Among the Five Approaches*. Sage.
- Crust, L. (2008). A review and conceptual re-examination of MT: Implications for future researchers. *Personality and Individual Differences*, *45*(7), 576-583. <https://doi.org/10.1016/j.paid.2008.07.005>
- de Souza, M. & Halafoff, A. (Eds.). (2018). *Re-enchanting education and spiritual wellbeing: Fostering belonging and meaning-making for global citizens*. Routledge.
- Eckersley, R. (2011). A new narrative of young people's health and well-being. *Journal of Youth Studies*, *14*, 627-638. <https://doi.org/10.1080/13676261.2011.565043>
- Gerber, M., Brand, S., Feldmeth, A. K., Lang, C., Elliot, C., Holsboer-Trachsler, E., & Pühse, U. (2013). Adolescents with high mental toughness adapt better to perceived stress: A longitudinal study with Swiss vocational students. *Personality and Individual Differences*, *54*(7), 808-814. <https://doi.org/10.1016/j.paid.2012.12.003>
- Gerber, M., Kala, N., Lemola, S., Clough, P. J., Pühse, U., Elliot, C., Holsboer-Trachsler, E., & Brand, S. (2012). Adolescents' exercise and physical activity are associated with mental toughness. *Mental Health and Physical Activity*, *5*(1), 35-42. <https://doi.org/10.1016/j.mhpa.2012.02.004>
- Gibson, A (1998). *Mental toughness*. Vantage Press.
- Glass, C. R., Kociolek, E., Wongtirirat, R., Lynch, R. J., & Cong, S. (2015). Uneven experiences: The impact of student-faculty interactions on international students' sense of belonging. *Journal of International Students*, *5*(4), 353-367. <https://doi.org/10.32674/jis.v5i4.400>
- Hagerty, B. M., Williams, R. A., & Oe, H. (2002). Childhood antecedents of adult sense of belonging. *Journal of Clinical Psychology*, *58*(7), 793-801. <https://doi.org/10.1002/jclp.2007>
- Harmison, R. J. (2011). A social-cognitive framework for understanding and developing mental toughness in sport. In D. F. Gucciardi & S. Gordon (Eds.), *MT in sport: Developments in theory and research* (pp. 47-68). Routledge.
- Institute of International Education (IIE). (2020). *2020 fast facts*. <https://opendoorsdata.org/wp-content/uploads/2020/05/Open-Doors-2020-Fast-Facts.pdf>
- Jin, L., & Wang, C. D. C. (2018). International students' attachment and psychological well-being: The mediation role of MT. *Counselling Psychology Quarterly*, *31*(1), 59-78. <https://doi.org/10.1080/09515070.2016.1211510>

- Jones, G., Hanton, S., & Connaughton, D. (2007). A framework of MT in the world's best performers. *Sport Psychologist*, 21(2), 243-264. <https://doi.org/10.1123/tsp.21.2.243>
- Levy, A. R., Polman, R. C., Clough, P. J., Marchant, D. C., & Earle, K. (2006). Mental toughness as a determinant of beliefs, pain, and adherence in sport injury rehabilitation. *Journal of Sport Rehabilitation*, 15(3), 246-254. <https://doi.org/10.1123/jsr.15.3.245>
- Li, L., Mazer, J. P., Ju, R. (2011). Resolving international teaching assistant language inadequacy through dialogue: Challenges and opportunities for clarity and credibility. *Communication Education*, 60, 461-478. <https://doi.org/10.1080/03634523.2011.565352>
- Lindlof, T. R. & Taylor, B. C. (2002). *Qualitative communication research methods* (3rd ed.). Sage.
- LoCastro, V., & Tapper, G. (2006). International teaching assistants and teacher identity. *Journal of Applied Linguistics*, 3(2), 185-218. <https://doi.org/10.1558/japl.v3i2.185>
- Marijanovic, N., Lee, J., Teague, T., & Means, S. (2021). Advising experiences of first year international doctoral students. *Journal of International Students*, 11(2), 417-435. <https://www.ojed.org/index.php/jis/article/view/1755>
- Maslow, A. H. (1968). *Toward a psychology of being*. Van Nostrand.
- Miles, M. B., Huberman, A. M., & Saldaña, J. (2020). *Qualitative data analysis: A methods sourcebook* (4th ed.). SAGE Publications, Inc.
- Myles, J., & Cheng, L. (2003). The social and cultural life of non-native English speaking international graduate students at a Canadian university. *Journal of English for Academic Purposes*, 2(3), 247-263. [https://doi.org/10.1016/S1475-1585\(03\)00028-6](https://doi.org/10.1016/S1475-1585(03)00028-6)
- Petrie, T. A., Deiters, J., & Harmison, R. J. (2014). Mental toughness, social support, and athletic identity: Moderators of the life stress-injury relationship in collegiate football players. *Sport, Exercise, and Performance Psychology*, 3(1), 13-27. <https://doi.org/10.1037/a0032698>
- Saldaña, J. (2016). *The coding manual for qualitative researchers* (3rd ed.). SAGE Publication Ltd.
- Shafaei, A., Nejadi, M., & Abd Razak, N. (2018). A model of psychological well-being among international students. *Educational Psychology*, 38(1), 17-37. <https://doi.org/10.1080/01443410.2017.1356447>
- Sheard, M., Golby, J., & van Wersch, A. (2009). Progress toward construct validation of the Sports MT Questionnaire (SMTQ). *European Journal of Psychological Assessment*, 25(3), 186-193. <https://doi.org/10.1027/1015-5759.25.3.186>
- Strayhorn, T. L. (2019). *College students' sense of belonging: A key to educational success for all students* (2nd ed.). Routledge.
- Walton, G. M., & Cohen, G. L. (2007). A question of belonging: Race, social fit, and achievement. *Journal of Personality and Social Psychology*, 92(1), 82-96. <https://doi.org/10.1037/0022-3514.92.1.82>
- Yao, C. W. (2016). Unfulfilled expectations: Influence of Chinese international students' roommate relationships on sense of belonging. *Journal of International Students*, 6(3), 762-778. <https://www.ojed.org/index.php/jis/article/view/355>
- Yin, R. K. (2018). *Case study research and applications: Design and methods* (6th ed.). SAGE Publications, Inc.

SHAOAN ZHANG, Ph.D., is an Associate Professor of Teacher Education in the Department of Teaching and Learning, College of Education at the University of Nevada, Las Vegas. His research focuses on preservice teachers' preparation and teacher development. Email: shaoan.zhang@unlv.edu

CHENGCHENG LI, Ph.D., is an Assistant Professor of Teacher Education in the Faculty of Foreign Languages at The Open University of China. Her research focuses on TESOL, in-service teacher development, and online education. Email: chengcheng_lee@qq.com

DANIEL L. UNGER is a Ph.D. student in the Department of Teaching and Learning, College of Education at the University of Nevada, Las Vegas. His research focuses on preservice teachers' motivation and confidence to teach. Email: ungerd2@unlv.nevada.edu