

THE INFLUENCE OF PHYSICAL ACTIVITY ON INTERNATIONAL GRADUATE STUDENTS' CROSS-CULTURAL ADJUSTMENT: A QUALITATIVE LONGITUDINAL STUDY

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ABSTRACT

International students face multiple challenges due to cross-cultural transition. Physical activity plays a significant role in maintaining health and well-being for college students. Little research has explored how international students' physical activity interacts with their acculturation. Using a longitudinal qualitative approach with individual interviews and non-participant observation, the current study examined how physical activity interacted with new international students' transition in the United States. Nine first-year international students who engaged in weekly physical activity were enrolled. Each individual was interviewed twice, in the middle (i.e., Jan and Feb) and at the end of their first academic year (i.e., May and June). Three months of field work (between the first and second interviews) was applied to capture international students' physical activity experience. Data were analysed using an inductive approach. Results suggested that international students' cross-adjustment occurred academically and socially, and physical activity played a role in both areas. Physical activity benefited international students' transition by creating social opportunities, maintaining cultural identity and facilitating intercultural communication. Practical implications, limitations and future research recommendations are discussed.

Keywords: adjustment, cross-cultural transition, environment, international students, physical activity

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INTRODUCTION

Numerous international students come to the United States for the purpose of education. Currently, the U.S. colleges and universities host more than 4.5 million international students. Coming to the U.S., international students face multiple challenges. Residing in the U.S., a new culture also brings new ways of thinking and behaving, outlooks, beliefs and values. Having international students on campus has brought multiple benefits to the U.S. colleges and universities. In addition to the economic benefit of international enrolment, international students can add diversity to the academic environment, provide opportunities to American students and professors to build foreign contacts, as well as

offer teaching and research support, particularly in science fields (Klomegah, 2006). On the other hand, international students face a series of challenges due to cross-cultural transition, which may create distress for their academic performance as well as life-satisfaction.

Theories of cross-cultural transition and adjustment

Multiple theories have developed to explain cross-cultural travellers' adjustment (Zhou, Jindal-Snape, Topping, & Todman, 2008). Berry's transition theory focuses on sojourners' psychological adjustment. According to Berry's model, individuals entering a new culture will experience plural societies, which may lead to a power difference (majority or the American culture vs ethnic minority or the home culture) (Berry, 1997). The psychological consequences of acculturation may differ due to multiple levels of factors, including cultural discrepancy (e.g., the difference between the two cultures regarding political system, social structure, economics, values, norms, attitude), openness of the hosting culture (e.g., attitude toward diversity, stereotype or discrimination and inclusiveness), individual characteristics (e.g., age, gender, education background, motivation, language, religion and personality) and coping capacity (i.e., coping skills, available social support) (Berry, 1970, 1980, 1997, 2005). Lopez-Class, Castro, & Ramirez (2011) reviewed the studies of acculturation based on Latino population and added a critical point upon Berry's model. They suggested that the local environmental context (i.e., local social network, community and neighbourhood resources) should be considered in the process of acculturation.

International students' cross-cultural adjustment

Previous cross-cultural transition models are based on immigrants. Specific features should be taken into account while exploring international students' experiences and psychological adjustment. Mori (2000) indicated that most international students chose to live in a foreign environment for the purpose of education, and they take academics as their primary responsibility. Thus, struggles with academics could be especially stress-provoking. Using English as a second language (Duanmu, Li, & Chen, 2009; Mori, 2000), unfamiliarity with the American educational system and academic culture (Duanmu et al., 2009; Thomas & Althen, 1989), and juggling multiple roles in their research and teaching pursuits (Mori, 2000; Wang, 2004) may contribute to academic stress. Kim (2011) suggested that limited language skills can strongly influence their performance in class activities, such as group discussions, conveying thoughts, asking questions or giving presentations. Struggling with language could lead to decreased self-confidence as well (Duanmu et al., 2009).

Lack of social support is another significant challenge. Social loss (being physically far away from family and friends) (Hayes & Lin, 1994), loneliness, challenges from developing new roles and rebuilding a support system in a new cultural environment can lead to distress. International students may feel isolated from their domestic peers (Trice, 2007). On the other hand, it seems that a lot of international students have little interest in establishing a relationship with local students due to the vast cultural difference (Schartner, 2015). They are more likely to build connections with other international students. Entering a new environment, international students may experience conflicts in their values system, and adaptive behaviours and skills may not be as effective as in their home culture (Dao, Lee, & Chang, 2007). Sometimes, international students from Eastern

cultures might have to sacrifice some of the core values in their self-identity to socialize (e.g., behaving in an individualistic pattern) (Sawir, Marginson, Deumert, Nyland, & Ramia, 2008).

International students are a vulnerable population (Sherry, Thomas, & Chui, 2010). The first 6–12 months living in the U.S. is especially challenging and might lead to mental health issues due to acculturative stress, academic demands and lack of social support (Duanmu et al., 2009; Lee, Koeske, & Sales, 2004; McLachlan & Justice, 2009). Based on a sample of Chinese students (N=130, 116 were graduate students) at a U.S. university, researchers found that 45% reported symptoms of depression, and 29% reported symptoms of anxiety (Han, Han, Luo, Jacobs, & Jean-Baptiste, 2013). Although counselling services can bring a positive effect on psychological stress, international students are reluctant to seek help (Russell, Thomson, & Rosenthal, 2008).

International students' physical activity

Physical activity can be considered as a coping strategy to deal with acculturative stress, as it is known to cause both physical and mental benefits (Berger, Pargman, & Weinberg, 2002). Physical activity may serve as an approach to socialization; it can enhance an individual's capacity to interact with social groups (Milroy, 2010). Certain sports have been noted as an approach to facilitate the transition and maintain the cultural identity (Allen, Drane, Byon, & Mohn, 2010). Thus, engaging in physical activity can be beneficial to international students' acculturative stress. However, limited research has focused on international students' physical activity experience. Most of the studies in this field have focused on the barriers to engage in an active lifestyle. For example, Shifman and colleagues (2012) suggested that no one to participate with, lack of time and high self-consciousness in physical activity were the greatest perceived barriers limiting international students from participating in intramural sports. The challenges presented during the transition are constraints that impact international students negatively. The specific barriers to communication, unemployment, social alienation, and a sense of hopelessness decreased their time and effort on recreational activities (Taylor & Doherty, 2005). Cultural beliefs, norms and values can influence their motivation to participate in physical activity. Walker, Jackson, & Deng (2007) found that Chinese students perceived more interpersonal and intrapersonal constraints since physical activity in China has more socializing purposes. Li and Stodolska (2006) found that Chinese students placed more importance on education; leisure time activity was associated with a sense of guilt. Kahan (2011) found that beliefs regarding the gender roles and religiosity influenced the physical activity participation among Arab American students. Literature also suggests that Asian women are least active among all international students (Suminski, Petosa, Utter, & Zhang, 2002; Yoh, Yang, & Gordon, 2008); cultural beliefs of gender role can be a significant barrier to females since physical activity was considered as a masculine characteristic.

Currently, the literature describes international students' acculturation and acculturative stress. Previous research mainly explored international students' perceived barriers to engaging in physical activity; acculturation may impact international students' physical activity negatively. No study takes a close look at how international students make sense of physical activity, and how acculturation interacts with physical activity during the transition. Thus, the purpose of the current research is to explore how physical activity interacts with international students' first-year transition to studying in the U.S.

METHOD

Research Design and Paradigm

A longitudinal qualitative approach was applied to explore new international students' perception of cross-cultural transition and physical activity. Tracking new international students who were currently experiencing cross-cultural transition and engaging in physical activity offered in-depth information of how physical activity interacts with acculturation. Both individual interviews and non-participant observation were used. Qualitative longitudinal research (QLR) methods allowed the current researchers to explore the change over time using a series of interviews and ethnographic techniques (Holland, Thomson, & Henderson, 2006).

This study was based on Berry's acculturation theories and the supplement raised by Lopez-Class & colleagues (Berry, 1997; Lopez-Class et al., 2011). It was conducted from a social constructive paradigm. The constructivism approach is based on the philosophical assumption that people construct their understanding of reality, and on their interpretation of their immediate surroundings (Schwandt, 2000). In the current study, the researchers believed that international students constructed their meaning of acculturation and being physically active depending on their cultural background, the interaction with hosting culture and the environment.

Participant selection and sampling

The goal of this study was to capture new international students' initial cross-cultural transition and to explore the role that physical activity played in this process. The target population was new international students who were at the initial stage of transition. Purposeful sampling was used at the beginning of this study; the lead researcher also used personal connections (i.e., from being an international student herself) and snowball sampling to ensure the sample size. Nine first-year international students (seven male students and two female students who had only studied in their home countries) were enrolled. They all participated in group or individual exercise at least once per week. To generate rich data of making the cross-cultural transition, all participants recruited experienced greater cultural discrepancy (e.g., participants' home culture had a different political system, social structure, language, values or beliefs). Participants were aged 25 ± 2.78 years. Two participants had 2–3 years of full-time working experience after they finished their degrees in their home countries. All the other participants had been students before they came to the current university. (See Table 1 for participants' information.)

Table 1: Participants' Demographic Information

Participant Code	Gender	Age	Status	Nationality	Sports	Recruiting Approach
A	Male	27	Graduate	China	Volleyball	Social activity
B	Male	28	Graduate	India	Volleyball	Personal connections
C	Male	22	Graduate	India	Cricket	Personal connections
D	Male	24	Graduate	India	Cricket	Referred by one participant
E	Male	22	Graduate	India	Cricket	Referred by one participant
F	Male	30	Graduate	Iran	Soccer	Personal connections
G	Male	24	Undergraduate/ Transfer	Brazil	Soccer	Personal connections
H	Female	25	Graduate	Indonesia	Badminton	Referred by one participant
I	Female	23	Graduate	Thailand	Badminton	Personal connections

Data Collection Procedures

Institutional review board approval was obtained before data collection. Using QLR, the primary researcher tracked nine new international students' cross-cultural experience and physical activity patterns during their first year. The reason for choosing the first year was that greatest psychological distress was reported in the initial transition period (6–12 months) (Ward & Kennedy, 1996; Ward, Okura, Kennedy, & Kojima, 1998), and physical activity may bring greater acculturative benefits in this crucial stage.

Both individual interviews and observation were used. The first individual interviews took place at the beginning of the spring semester in 2015 (i.e., January or February). Then, the primary researcher participated in international students' physical activity and carried out non-participant observation for approximately three months. At the beginning of the summer semester of 2015 (also the end of their first-year experience), the second interview was conducted to let participants re-construct the meaning of transition and engaging in physical activity. The second individual interview also provided international students with an opportunity to process their first-year experience while the acculturative stress was reduced.

Individual interviews

Semi-structured individual interviews were used. The primary researcher interviewed all participants following the same interview guide. Active listening skills (Kahan, 2011) were applied. The researcher reflected on participants' statements to elicit more explanation

and ensure the understanding of international students' perception. The first interview focused on international students' initial perceptions of acculturation. Their initial perception of engaging in physical activity was inquired, including their physical activity history, current exercising habits and motivation. In the second interview, each participant's physical activity experience, motivation and impact from physical activity were inquired again. They were also asked to recall and reconstruct the meaning of acculturation and being physically active when the academic stress was reduced at the end of their first year.

Field work/behavioural observation

After the first individual interview, the researcher contacted each participant to gain permission for observation. Non-participant observation (the lead researcher's role was as a complete observer) was used. The consideration for non-participant observation was that the researcher observed multiple exercise groups formed by international students from different cultures; it was unlikely to gain an in-depth understanding of multiple groups and cultures simultaneously. The researcher may talk with participants before, after and during the break of their exercise. One group of participants (two female students played badminton) had invited the researcher to play with them. However, the researcher still considered it as non-participant since the researcher only had limited access to the exercise groups, observation took place from a distance and social interaction with participants was limited during observation (Williams, 2008).

Non-participant observation took place in February, March, April and May once per month (saturation was reached after three observations for each participant, approximately two hours each time). The researcher entered the field with an open mind. The goal was to record participants' physical activity behaviour. Eventually, the researcher focused on the physical activity form (i.e., group or individual, recreational or competitive), the intensity, the related events (e.g., social activities after playing), the local environment, performance, duration, routine and social interaction. Participants were invited to comment on the field notes and offer their perceptions and interpretations during the second individual interviews. Notes were taken by speaking into a digital recorder during observation. The researcher completed field notes within 24 hours by listening to the digital notes. The field notes were based on the researcher's observation, researcher's interaction with the participants and their team, and the researcher's self-reflection.

Saturation

During the data collection, the researcher noted that participants reported repetitive statements of academic and social adjustment and physical activity experience. However, the participants were mainly from Asia. Recruiting more participants (e.g., from Europe or Africa) would bring new information to the current data. However, rather than recruiting a large enough sample size to gather different perspectives on cross-cultural experiences from students all over the world, the researcher focused on the ongoing interaction between cross-cultural transition and physical activity. There is no universally accepted sample size in qualitative research. Lee & colleagues (2002) claimed that a qualitative study that incorporated more than one method, or multiple interviews with the same participant (e.g., longitudinal) required fewer participants to reach saturation. In the current study, both individual interviews and field notes were collected and analysed.

Thus, the data collection reached saturation by two data collection methods and two individual interviews with each participant.

Data Analysis

The primary researcher (or a trained transcriber) transcribed the interviews verbatim. Before data analysis, the researcher compared the transcription with the interview audio to check the accuracy. Then, a research team was developed that included the primary author and two additional researchers trained in qualitative methods. The primary data source was the two interviews. Firstly, the individual interview data were initially assembled in chronological order and placed in two “pools” before coding. There were two coding cycles. In the first cycle, descriptive coding was used to analyse the content. Descriptive coding was also referred to as “topic coding.” The researcher chose descriptive coding because (1) descriptive coding was particularly useful while analysing a variety of data forms (in the current study, data included interview transcripts and field notes) (Saldaña, 2012); (2) due to the language barrier, international students might use incorrect words or phrases, or body language to help communication, it was more important to identify the major topics rather than scrutinizing the nuances. Before the first cycle, the research team read through the transcripts and assigned topics (codes) to participants’ statements. Then the researchers discussed the codes and put them into multiple categories. Based on the categories and codes, the research team assigned a definition to each code and category. If there was a disagreement with the codes, the researchers discussed it while looking at the literature until reaching consensus. After that, the research team created a coding book with both codes and explanations and examples for each code. In the first cycle, the research team members coded 44.4% of individual interviews and field notes (four participants’ data) separately based on the coding book. Then the research team revised the coding system together. After that, the primary researcher coded the rest of the data based on the revised coding book. In the second cycle, pattern coding was used. Saldaña (2012) suggested that pattern coding could help to develop a statement that described a major theme, a network of interrelationships, and a theoretical construct from data. In the second cycle, the researcher focused on the relationship between physical activity and international students’ academic and social adjustment. Another experienced qualitative researcher was involved in the second cycle. Different researchers were involved in the two coding cycles to develop a broader understanding of the data and interpretation (Guion, Diehl, & McDonald, 2001).

Cross-cultural transition and physical activity

Academic transition

International students came to the U.S. for the purpose of education. Meeting the academic demands was their priority. The phenomenon of academic adjustment that has been well documented, from Andrade (2006) to Duanmu et al. (2009), was confirmed in the current sample that international students experienced both language barriers and adjustment to a new academic culture. However, the two risk factors didn’t increase participants’ academic stress during the first year.

Language

In the first semester, participants referred to the language barrier as listening and speaking. They suggested that they could not understand the class discussion when professors and students were talking fast. Thus, engaging in class discussions was particularly challenging. Skills such as communication in group projects, problem-solving and critical thinking were also negatively influenced by the language barrier. According to Duanmu's study (2005), the negative influence of the language barrier was associated with increased stress and anxiety. However, the current sample did not refer to the language barrier as stressful. They had received support from the professors and students. As explained by one participant,

"Listening and speaking in the academic environment is not the most difficult part since professors have experience working with international students. They know that there are many international students who cannot speak English clearly. It is academic conversation; I am more comfortable with that. Even you could not talk well or don't finish the sentence; they can understand."

In the second semester, writing became a major theme. Although international students were required to take the Test of English as a Foreign Language (TOEFL) to be admitted into American colleges or universities, it did not ensure their comprehension and writing capability. Previous studies mainly focused on communication. Writing is a new theme which could be stress-provoking. One participant mentioned,

"I can look for opportunities to practice my English listening and speaking with my friends. Writing is a little bit difficult, it is writing scientific papers, I think I have heard that American people are trained about the way they have to write papers, since high school, or something else. In Brazil, we don't have these tutoring. They are difficult."

Academic environment & performance

Participants suggested that they studied in a diverse environment with professors and students from multiple countries. As graduate students, they were also encouraged to explore applied or research opportunities. They appreciated the opportunities, freedom and flexibility in this environment. All participants reported that professor–student interaction was more casual (like "friends" and there were "jokes"), and it was easier to speak to the professors compared with those in their home countries. In the first semester, five students experienced a smooth academic transition. Four participants reported academic stress due to adjustment, and they struggled to achieve good grades in their coursework. For example, one student said,

"For example, one class, the professor's instruction is pretty easy. But the assignment was really, really difficult. You need to read a lot of references. Sometimes, you even have to learn another software; the software, you will not use after this class. But you have to learn in a very limited time. That is really hard. I also learned in my first semester that grade is important and it gave me a big pressure. Even C is passing the class, but as a PhD student, you have to get a B, or there will be some consequence. So I have to put a lot of effort for each class."

In the second semester, all participants reported that they were satisfied with their adjustment and academic performance in the first year, and they could handle the academic demands. One of them said,

“In my second semester, I am kind of more enjoy, I am kind of lay back in my second semester. In my first semester, I started study so hard, because I was so scary what grade I will have, because I still didn’t adjust to the academic life. In my second semester, I already know the tricks, I can say study here is easy. So I will encourage my friends. Hey, it is easy to go to America and study, come, come to America.”

The trajectory of academic transition for the current sample was that international students experienced less stress as they became more adjusted in the first year. Ward & colleagues argued that the greatest psychological distress was expected at the entry period when individuals experienced the most immediate life changes and had the least resources, knowledge and familiarity with the new environment (Ward & Kennedy, 1996; Ward et al., 1998). The psychological distress significantly dropped after 6 months through experiencing meaningful interactions with the host environment. Results in this sample were consistent with Ward’s transition curve.

Although academic stress (only in their first semester) was discussed, international students perceived the stress as manageable and did not express the need for additional support or coping skills. Participants in the current sample referred to it as “different” rather than “stressful” studying in a new academic environment. This result was different from the main literature in this field. There were several explanations. First of all, international students might not be comfortable in sharing particular struggles or maladaptation. Misra & Castillo (2004) suggested that international students under-reported their stress due to the stigma of showing a problem or weakness. Secondly, it was also possible that all participants in the current study had a smooth academic adjustment, and they truly had no struggles to share with the researcher. All participants were from engineering, mathematics and music performance programmes. Compared with the majors of social science, their majors required less communication with the host culture.

The current study was based on Berry’s model, which focused on dealing with immigrants’ mental health problems from a clinical perspective. There were other scholars referring to adaptation as the “growth-facilitating nature” (Adler, 1987). Adler (1987) suggested that the cross-cultural transition was not a disease to cure, but a journey of profound cross-cultural learning, self-understanding and change, which lead to personal growth and increased self-awareness. The results of the current study seemed to fit the “Learning/Growth” model better than Berry’s “Problematic” model. During the interviews, international students shared that they observed people’s behaviour pattern and learned from the academic culture (e.g., the professor–student interaction). Through learning, their language, knowledge and capacity were developed.

Physical activity’s role in academic adjustment

International students’ priority was to study. It was confirmed in this study that they tended to meet the academic demands before they spent significant time in exercise in the first semester. Most participants started to exercise in the middle or at the end of the first semester. In the second semester, all participants exercised regularly, and they found that physical activity was a good approach to switch focus and relax. One participant suggested,

“(I started to exercise) in October, because, for the first two months, I have to get used to the class, I spent a lot of time in class and homework. I was exhausted with homework, so I don’t have time and energy.”

Observation revealed that physical activity provided international students opportunities to process academic issues. When they exercise together, they might share the academic challenges they experienced. They talked about the assignments and the struggles with their academics (especially before the final week) before they started exercise. International students usually took time to change clothes and shoes and warmed up before they began to play, and they might use that time to talk about the major academic stress and support each other. For example,

“We talked about study when we play soccer. I talk with my friends about the pressure to look for summer research internship; I need to build up the resume to apply research assistantships in the next semester. Another friend talked about failing in PhD qualify exam, and it was quite stressful. We shared and supported each other.”

Social Transition

Coming into a new environment, one of the challenges international students immediately faced was rebuilding their social circle. In this study, participants focused on the social barriers (i.e., language and socio-cultural differences) and social pattern that they observed and experienced. Although marginalization and social segregation were mentioned, none of them reported loneliness or other types of maladaptation.

Language barrier

The trajectory of language adjustment in socialization was similar with academic transition: language barrier (i.e., listening and speaking) was only a first-semester theme. Even though they could not significantly improve English speaking and listening within one year, it seemed they became more adjusted to the situation that they had to communicate with the language barrier. Unlike the language barrier in academic settings, the difficulty in social communication significantly contributed to the acculturative stress. One participant elaborated,

“I also have some speaking problem as right now. It is hard for me to speak with people. You know, it is about my self-confidence. I cannot hear clearly what others say, and I cannot speak, it narrows my communication... I was not, comfortable among other students, especially the social events, I just ran away from every crowd. Yes, I don’t like to speak more.”

It was confirmed in the literature that social isolation and loneliness were risk factors for international students’ psychological adjustment (Hayes & Lin, 1994; Sawir et al., 2008; Trice, 2007). However, those studies overlooked the fact that shame and the desire to avoid the anxiety of English speaking may inspire the retreat from social interaction and social segregation. Brown (2009) explained that it was a common phenomenon that communication breakdown caused confusion, discomfort and embarrassment to international students, and it could lead to avoidance of the host culture.

Only one participant mentioned that he initialized action to improve his language in social occasions; he went to church to talk with people even though he was not a church-goer in his home country. He said,

“We take every chance to go out; we went to the church. It is to find opportunities to talk with foreigners. Not just foreigners, talk with Americans. Most of them are like me, the newcomers to America, they are from different countries. I think most of them; their intention is to learn English. They (the church) provide English classes for different levels. It is useful.”

Language barrier in socialization with Americans was more than just using English as their second language. The conversation could be confusing for international students since the social context was missing. For example,

“It feels you cannot express your own opinion on something, so you cannot talk with them comfortably. You know, they talk about movies, traditions, food or games that you don’t know because they are not in my culture. You don’t know why they are laughing, why they are doing this.”

Cultural difference in socialization

Living in a new culture, international students found that traditions, habits, beliefs and norms were different from their home countries; those cultural differences influenced their socialization. For example, in the U.S. culture, socialization in bars or through drinking was common. Three participants mentioned that they didn’t like drinking or socializing in bars; one suggested that it was against her Muslim culture. The cultural difference became the obstacle socializing with American students. One participant explained,

“I don’t like to change myself. That is why it is hard for me to get engaged with them (American students). I just become myself everywhere I go; it is hard to, getting melted with American culture. For example, if they invite you to a party, they like dancing, I am not going to do that. Sometimes, people asked me, let’s go to the bar. Oh, no, even though I will not drink, I still don’t want to go, since it is not my culture to go to the bar.”

Another cultural difference international students observed was that people were kind and warm-hearted; they used to say “How are you?” and “Have a nice day” and gave a smile to strangers. One participant suggested that this cultural norm benefited his social interaction and physical activity. He explained,

“Back in my country, if I see an unknown person, I never ask, “How are you?” or I never smile at them. I don’t say it’s wrong, but there’s nothing like that. Here, like it’s pretty normal. If you go to a shop, they’ll definitely ask you, “How are you?” And they’ll say, “Thank you” and “Have a nice day.” That’s one thing I learned a lot. I never feel comfortable playing with an unknown person there (in my country). But here, yes, I feel really comfortable, because maybe I got adjusted in such a way. Maybe because of that, I could go to any unknown person, talk with them, I go and play with them.”

However, four participants held different thoughts. They suggested that although people here were friendly to strangers, the courtesy was superficial and they felt they were guests. The perception of cultural norms discouraged them from socializing with American students. For example, one participant said,

“I can feel that American people kind of more individual. I can feel this. You talked to someone one day, and the other day, the following day or the next week, the person will not be there for you, you will have to look for him or her. I don’t know; it is different. We are warmer in Brazil. It is different.”

Networking pattern

In the current study, the phenomenon of networking and friendship development was discussed. Participants made friends from their department, classes, parties, social media and social events. Four participants suggested that most of their friends were international students, especially the students from their own countries (i.e., conational friendship). Four students only had conational friends. This networking pattern stayed the same throughout their first year. One participant explained the segregated network in his interview,

“Indians stay together in one group. For example, you stay in another group. Americans stay there. It’s not like all together. It’s like independent. I never bothered about that. I don’t have any American friends or Chinese friends. I got friends who are Indians only. I never went out with any other person. I’ve seen people that aren’t interested in other new groups, so that’s what I was saying in the beginning. In America, you don’t care about the person who is staying beside. It’s like they’re individualized. That’s the reason I was afraid to make new friends.”

It was well established that the interaction with domestic students would bring acculturative benefits (Hendrickson, Rosen, & Aune, 2011; Nizami, 1998). However, a low incidence of international-local student connection had been widely documented (Brown, 2009; Furnham & Bochner, 1986; Nizami, 1998; Ward, Bochner, & Furnham, 2005). It seemed international students denied the optimal approach to improve their language and knowledge of American culture. In the current sample, no participant expressed interest to make more American friends at the end of the first year. Only one participant had meaningful interaction with Americans; all the others just generally described as “getting along well.” The interaction with American students only took place in academic settings. There were multiple barriers for international students socializing with American students. The different cultural norms discussed above (e.g., socializing in bars) might decrease international students’ efforts. Swair & colleagues (2008) argued that there was a cultural cost to socialize with American students, such as going to a bar or a drinking party, behaving in the individualistic pattern (e.g., being competitive rather than being humble, being confrontational rather than following others’ thoughts). International students were well aware that their sojourn in the U.S. was temporary and their focus was academic success rather than fitting themselves into the American society. Thus, there was no urgency for them to change or sacrifice their original culture or identity to build a connection with the host culture (Trice, 2007).

On the other hand, participants reported several venues to develop friendships with conational and international students, including dinner parties, social media, social events, travelling and physical activity. The speed of the conational establishment was surprising. Most of them established connections with conational students on campus before, or immediately they arrived at the U.S. One explained,

“The most significant thing in my first semester, maybe I’ve made a lot of friends here. That’s very important after coming a long distance from my country. That happened quickly in the “Fresher’s” party (potluck initiated by the Indian Student Association), I think before school started. I got to know my friends. Yes, that is the most important thing. I’m in the cricket team, I’ve met many seniors, I like all of them, and they’re good friends now.”

Overall, the trajectory of the first year social transition was that international students quickly developed a friendship with conational and other international students;

socialization with American students maintained limited. This network pattern stayed throughout their initial transition period. No major acculturative stress was reported. It was similar with the academic transition that international students perceived the acculturative stress as manageable. In addition to the reasons discussed above, the physical and social environment should be considered. Lopez-Class' argued that the local environment significantly influenced acculturation (Lopez-Class et al., 2011). In the current study, the local environment (i.e., the university) was open. Participants could spend significant time with other international students or their community, which made them feel more comfortable. They didn't have to make an adjustment to rebuild the social network. One participant elaborated, "I do not believe adjustment, socially, I feel I still do the same thing, study, spend time with Indian friends, play cricket, I don't think I changed."

Physical activity's role in social adjustment

Physical activity can be a social vehicle (Milroy, 2010). All participants suggested that they made friends from engaging in physical activity. While engaging in physical activity, they spent significant time socializing with each other. One said, "We have a road trip to Florida for a cricket competition. During the trip, we shared cars and hotel rooms. We lost the game, but we visited a lot of cities together after the game. It was fascinating."

Compared with other approaches, socialization through physical activity was easier. It was mentioned above that socialization with American students may create discomfort due to the language barrier and lack of socio-cultural context. Socialization through physical activity had fewer barriers for international students. One of them said, "When we play sports, everyone has the same interest. They are talking about volleyball; volleyball is what you are interested. You want to learn. If you learn something, you are happy; you won't be uncomfortable I think... For example, if you are in a party with Americans, if an American did a stupid thing, they will be laughing, maybe for me, I will think, why you are laughing, he just did a very common thing, why you laugh, because there is a cultural difference. In volleyball, there is no cultural difference."

This was a significant finding: physical activity reduced the intercultural communication barrier. Intercultural communication was defined as a competence that required sojourners to "encode and decode linguistic and nonlinguistic codes and practices to a given cultural or subcultural community" (Kim, 2000, p. 99). For example, international students might need the in-depth knowledge of the local language, historical, social and cultural background to understand and respond to Americans' jokes. Even if international students were knowledgeable in English, the context information was missing, which might be the reason that they felt confused in social occasions. Physical activity, in particular, organized sports games, required less contextual information. All students were familiar with the rules. Thus, there were less language and contextual demands to navigate. Physical activity could be an easier start to communicate with the host culture.

Through socialization in physical activity, international students built their social circle and found their close friends and they eventually became a resource of emotional support. One explained,

"If I'm sad, if I'm with the team, they unload the sadness that I have, they help me overcome things. If you are sad, and you sit alone in the home or sit alone in the bar, what does it do? Nothing. If you are with the team, if you are sad, they'll ask

you the reason. They will support you. They'll try to make you be happy or try to overcome the situation."

Physical activity benefited acculturation through maintaining cultural identity. Results suggested that international students tied particular sports to their country image and expressed their pride in their culture (e.g., Indians play cricket). From this perspective, physical activity might have a unique impact on international students as a meaningful cultural practice, which helped them maintain cultural and national identity. One participant elaborated,

"Cricket is a common sport back in my country so in general every day we played cricket, like after school with friends, we almost played cricket every day. Coming here I was happy that there are people here playing cricket, and there is a team in West Virginia, and we are like number 14 in the country."

This finding was consistent with Brown's viewpoint (2009) that socializing and engaging in physical activity with conational friends could recreate what was missing for international students as well as a sense of belonging. Thus, it would help them cope with homesickness. This finding supported previous findings that certain sport was a culturally meaningful activity (Iwasaki & Bartlett, 2006), which benefited immigrants' well-being (Kim, Kim, Han, & Chin, 2015). Results in the current study coincided with previous literature that sport played a significant role in developing and maintaining the national identity (Allen et al., 2010). A similar result was also found in Lee's (2005) study which suggested that Korean students chose Taekwondo as a way of strengthening the ties to their national and cultural backgrounds.

The interaction between physical activity and social transition suggested that international students new to a county found it easier to bridge with local students and communities through physical activity, and physical activity facilitated intercultural communication. Through socializing and playing certain sports with conational friends, their national and cultural identity was strengthened. This unique impact of physical activity can be used by university administrators who work closely with international students. Organizing sporting events that were popular in international students' home countries (e.g., soccer, basketball, badminton, ping-pong, cricket) and inviting American students to play might build their motivation, which made them more likely to establish an active lifestyle as well as to connect with the world outside their comfort zone (their own ethnic group). American students would also have more exposure to cultural diversity.

Limitations and future research recommendations

The aim of this study was to describe international students' cross-cultural transition and how they make sense of physical activity. The data analysis was not to generalize all international students in the U.S., which is a heterogeneous population. The authors focused on reporting the facts that were observed through the authors' lens and making an interpretation of international students' perception. There were a series of limitations regarding the methodology. First of all, the current sample contained mainly graduate students. Undergraduate students' acculturation may differ. Due to the limited time, the research only explored international students' first-year experience. Kim (2000) suggested that the cross-cultural adjustment was a broad definition. Rather than a distinct phenomenon in a period, it was a lifelong activity to maximize the "fit" to the host culture. Their first year was only the initial step of this journey; it was not a full representation of cross-cultural transition. Secondly, there were only nine international graduate

participants in the current study. Enrolling more participants (both undergraduate and graduate students) from other continents (e.g., Africa, Europe) may bring new perspectives. Last, the researcher observed participants' physical activity from an outsider perspective. The outsider perspective could be more objective. However, the researcher might not gain a "real" understanding of the cultural background of a particular community. Future researchers could do intensive field work with one ethnic group from an insider perspective to generate a more in-depth understanding of their experience.

CONCLUSION

Previous studies on international students' cross-cultural transition explored academic and social acculturative barriers and stress; the two areas were also discussed in the current sample. Acculturative stress in their first year was not remarkable. International students in this study revealed a "Learning/Growth" acculturation model (Adler, 1987): observation and cross-cultural learning were highlighted. The social network was primarily developed with conational and other international students, which implies that cross-culture learning was inhibited. Participants perceived the social network in the individual culture as segregated, and they tended to be self-reliant to survive. International students are claimed as intercultural mediators (Brown, 2009) which increases cross-cultural contact. The segregate socialization may decrease the cultural benefit of having international students on campus. Physical activity was found to be beneficial to the intercultural communication. Thus, it can be used to initiate the conversation with the host culture and eventually help both international and American adopt a multicultural attitude and develop multicultural skills. Other benefits that physical activity brought included networking opportunities and social support. By playing sports, international students' cultural identity was strengthened. Future research could focus on designing appropriate physical activity interventions and programmes which allow international students to play together.

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Shuang Li recently received her PhD in Kinesiology with a focus on Sport & Exercise Psychology from West Virginia University. Her research focus is health behaviours and physical activity promotion within people from a diverse cultural background. The data in the current study was collected in 2015. The authors hope to bring more attention to international students and their well-being.

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