
Changes in International Students' Health Care and Management

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Abstract

International students often bring along medical practices and medications from home when studying abroad, in case they become sick. Upon arrival, international students are faced with many challenges, such as cultural and language barriers, social isolation, financial difficulties, and disparities in healthcare

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practices. We conducted semi-structured interviews with 24 international students from 10 different countries to explore their health behavior change using the Health Belief Model. Our study revealed an urgent need to address the issue of self-diagnosis and self-medication, a common problem among international students. We also propose design recommendations for technologies to facilitate their healthcare information seeking and communication with health providers.

Author Keywords

Health behavior change, Health Belief Model, international student.

ACM Classification Keywords

H.5.m. Information interfaces and presentation (e.g., HCI): Miscellaneous;

Introduction

With the increasing internationalization and globalization of higher education [5], over a million international students attended colleges and universities in the United States in 2015-2016 [3]. Leaving their families, friends, and home country, international students constitute a vulnerable population as they have to face a variety of challenges such as homesickness, cultural barriers, language and academic problems, racial discrimination, social



Figure 1: Over-the-counter medicine and prescription medicine that the participants brought from their home countries.

alienation, and financial difficulties [7]. These challenges could increase stress and lead to health issues among international students [6]. Thus they visited health centers more frequently and had a higher admission rate to hospitals than American students [3].

Confronted with new health practices and the skyrocketing costs of health insurance and costs in the U.S. [7], international students are frequently faced with challenges to their deeply held beliefs and understandings. For example, healthcare providers' lack of knowledge about international students' culture and their problems could create barriers for international students seeking medical services [1]. We employed the Health Belief Model, which was developed in the 1950's to better understand disease prevention [4], to explore international students' health behavior change. The model depicts five key dimensions: perceived susceptibility (perceived risk of contracting a condition), perceived severity (perceived consequences, both medical and social, of contracting an illness), perceived benefits (perceived effectiveness of recommended health actions that impacts willingness to adoption), perceived barriers (perceived cost like expense, danger, discomfort, inconvenience, time), and cues-to-action (triggers for health behavior change, e.g., symptoms as internal triggers, or media and reminders as external triggers).

Methodology

We conducted semi-structured interviews with 24 international students attending an urban university in the U.S. They were 16 males and 8 females, aged 23.5 years on average. They came from India (7), Nigeria (4), China (4), Saudi Arabia (3), and Taiwan, Korea, Malaysia, Nepal, Morocco, and Egypt. They have been

in the U.S. from 1 to 9 years, with an average of 2.2 years. They were recruited through the International Center and ethnic student organizations of the university, as well as through snowball sampling.

We examined their health behaviors and preparation before they left their country, and their adaptation to the U.S. healthcare environment. Each interview lasted about an hour. The interview data were transcribed and iteratively analyzed using open coding to identify salient themes [2].

Findings

This paper reports a specific theme that we identified from our study: changes in the international students' attitudes and behaviors toward their own healthcare after arriving in the U.S.

All our participants were young adults and expressed that they did not need to pay attention to their health and wellness when they were in their home country because their parents took care of them. Diet and physical activity were never considered to be a major priority for them. They were also used to the climate and healthcare services and costs at home. Our study revealed changes in the participants' attitudes and behaviors toward their health care and management.

Preventive measures were adopted

Given their *perceived susceptibility* to contracting illness, all our participants made a conscious effort to stay healthy in the U.S. Many emphasized how they learned to dress for the much colder climate than their home countries. They purchased and wore warmer clothing to prevent from getting sick. P17 from India said, "It is a cultural shock, not habituated to weather. Did not follow any particular diet in India, here it is



Figure 2: Traditional herbal medicines that our participants brought from their home countries.

needed to follow diet". Many of them searched online to learn about healthy diets. P24 from Morocco followed prominent physical trainers in his home country on Facebook to learn about their diet. Several participants attended health-related workshops offered by the university for the *perceived benefit* of these workshops. Both internal (desire to stay healthy) and external *cues-to-action* (pamphlets available at the International Center and university email announcements) appeared to have contributed to their attendance at these health workshops. "I attended obesity campaign and sessions on occupational illnesses like back pain, because they are common among software developers" (P5 who majored in Computer Science).

Self-diagnosing and ethnic-treatment was common

All the participants said that they always went to a doctor, whether western or ethnic, when they were sick in their home country. However our participants often self-diagnosed themselves in the U.S., through talking to their family, "Talk to family, discuss with them, use home remedies" (P17), or searching for similar symptoms on the Internet and using social media like Facebook to solicit advice from their peers. As P23 described, "I make decisions based on what most people say". After self-diagnosing, they then self-treated with medicine they brought from their home countries, such as western medicine and prescriptions including antibiotics (Figure 1), and/or ethnic medicines like Chinese herbal medicine and Ayurveda (Figure 2). Visiting a doctor was typically the last resort, and only happened if their own medicine did not make them feel better after at least a few days. As P13 said, "First, I will eat some correct pills [from the medicine he brought from his country]. If I still feel discomfort, I will go see the doctor."

For the few participants who chose not to bring any medicine from their home country and those who had consumed all the medications they brought to the U.S., they would just rest at home and drink plenty of water to nurse their illness instead of immediately seeking medical attention. All of the participants indicated that they would only go to see a doctor if resting, and/or their own medication and home remedies failed to get them better. As an example, P7 always took his own herbal medicine when he got sick. But since he consumed all of it, he nursed his illness with rest while looking for alternative herbal medicine. Unfortunately, he did not *perceive the severity* of his illness and had waited too long while suffering with severe abdominal pain. He was unaware that he had acute appendicitis and the inflammation was so severe that it became life threatening. Fortunately, he was rushed to the hospital in time for an open appendectomy to remove his inflamed appendix. If he had continued to wait, the consequences could have been much worse.

In addition to their strong preference for medicine they brought from their home country, several participants expressed *perceived barriers* to their seeking of health services in the U.S. For example, 3 of the 4 Chinese participants feared of visiting a doctor because they were worried about not being able to articulate their symptoms and understand what the doctor was telling them. "I prefer China's health system, because I can describe my symptoms well. After all, English is not my first language" (P22). Both the Taiwanese and the Malaysian participants (P6 and P11) also stated a lack of transportation means as their key barrier to see a doctor.

Beliefs toward western medicine changed

Several participants (P13, P16, P19 and P24) had particularly strong beliefs that only their own ethnic herbal medicine would work for them because that was what they have taken their entire lives. All of our participants have asked their family or friends to send more medications after their supplies ran out, while some tried to find similar herbal medicine locally. P24 from Morocco was brought up believing that western medicine was toxic and would do more harm than good. But he was extremely excited to share his "transformative" experience when he finally went to see a doctor and took western medicine in the U.S. After a prescription of Ibuprofen helped relieve his severe headache, he was convinced of the *perceived benefit* of western medicine. This experience made him to rethink how people could be misled by folktales and myths.

Conclusion and Design Implications

Based on the Health Belief Model, our study revealed changes in the international students' attitudes and behaviors toward their own health care and management after arriving in the U.S. Language barrier and difficulty to access and understand health information were two key factors for their reluctance to seek health services in the U.S. in addition to their long-held belief in the medicines they brought from their home countries. Hence, we propose an online application that delivers clear healthcare information relevant to international students, including local health practices like doctor appointments and prescriptions filled at a pharmacy after medical consultations, and direct links to eligible health insurance options with details of coverage and a Q&A forum. The online tool should also provide a feature to translate common medical terminologies between languages

corresponding to the international student population at the institution, and be available as a mobile application so that the international students can use to mitigate language barriers during clinical visits. In fact, our international students exhibited subtle differences in their health behavior changes. It is thus important to further investigate the variety of underlying, potentially culturally sensitive, factors in order to better meet the needs of this underserved population.

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