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## **Health Insurance Literacy Among International College Students: A Qualitative Analysis**

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### **ABSTRACT**

In this qualitative descriptive study, we examine health insurance literacy among a group of international college students. They were recruited from a public, co-educational Southeastern university in the United States during the fall semester of 2016 to participate in semistructured interviews. Data were gathered through a demographic questionnaire, two focus group discussions, and individual interviews. Interview sessions were audio-recorded, transcribed, and analyzed using a thematic analysis approach. Three themes emerged, including knowledge of health insurance options and benefits information, affordability, and unmet expectations. These findings show the need for higher education institutions to develop a plan to integrate international students into U.S. health care. International students are a vulnerable population; therefore, increasing health insurance literacy is vital to making an optimal health insurance choice, improving access to health care, and using health care efficiently. Future research should tailor educational interventions to mitigate poor health insurance literacy among international college students.

**Keywords:** health literacy, international students

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## INTRODUCTION

In recent decades, there has been an increase in the number of international college students from all over the world in the United States. In 2019 more than one million nonimmigrant international students were enrolled in U.S. colleges and universities, accounting for 5.5% of all U.S. total higher education students (Institute of International Education, 2019). The term *international students* for this study is defined as individuals enrolled in institutions of higher education in the United States who are on student visas. Although this group potentially includes immigrants, we do not distinguish among these populations. Similarly, we refer to native U.S. students by the term “domestic students” (Andrade, 2006). Extant literature shows that international students pursue educational studies abroad for various reasons including a chance to explore different cultures, learn new ways to think and behave, and improve their cross-cultural knowledge and skills (Contreras-Aguirre & Gonzalez Y Gonzalez, 2017; Wu et al., 2015). International students benefit from the strong academic programs at U.S. colleges and universities (Lee, 2015). Similarly, host universities benefit economically and contribute to intercultural learning goals and enhance the overall experience for both domestic and international students and the diversity of the campus and community (Andrade, 2009; Wu et al., 2015).

Similar to their domestic counterparts, international students have to adjust to their new roles as university students. Domestic and international college students share common academic stressors such as family-related pressures, scholarship requirements, financial burdens, and course-related stress (Misra & Castillo, 2004). For international students, the stress of the transition to U.S. university life is coupled with additional stressors associated with learning about the culture (Xiaoqiong, 2008). They also face multifaceted challenges in adapting to life in the United States including language difficulties, racial discrimination, social isolation, and financial problems, making them vulnerable to encountering health problems (Burt et al., 2017; Cheng, 2004; Lee, 2015; Sherry et al., 2010). One major area that international students may need to acculturate in America is accessing the health care system. However, international students are less likely to access health care (Hyun et al., 2007; Mori, 2000). Studies have shown that this could be related to the lack of knowledge and understanding about health care, also known as health care literacy, related to the U.S. health care system (Poyrazli & Grahame, 2007)

### **Health Literacy**

Health literacy is defined as “patients’ ability to obtain, process, communicate, and understand basic health information and services needed to make appropriate health decisions” (Baker, 2006). Health literacy is “a dynamic concept, as an individual’s health literacy may vary depending upon the medical problem being treated, the health care provider, and the system providing the care” (Baker, 2006). To make appropriate health decisions and act on them, people must locate health information, evaluate the information for credibility and quality, and analyze risks and benefits (U.S. Department of Health and Human Services, 2010). According to Gele et al. (2016),

Health literacy also addresses the environmental, political, and social factors that determine health, including a wide range of skills and competencies that people develop over their lifetimes to seek out, comprehend, evaluate, and use health information in order to make informed decisions, reduce health risks, and improve quality of life

To better conceptualize health literacy, Baker (2006) proposed a conceptual model with two major domains of health literacy: (a) individual capacity, which is a set of resources required to deal effectively with health information, health care personnel, and the health care system; and (b) health literacy, which includes print- and oral-related literacy. The health literacy domain is determined by characteristics of both the individual and the health care system (Baker, 2006).

Basic health literacy is necessary for international students to effectively navigate the U.S. health care system. Low health literacy has been associated with poor health outcomes, including differential use of certain health care services, increased hospitalizations, seeking emergency care, poorer ability to demonstrate medications adherence, interpretation of medication labels and health messages (Berkman et al., 2011; Greenhalgh, 2015). Low health literacy is more common among low income and minority ethnic groups, immigrants, non-native English speakers, those with fewer years of education, and elderly people (Greenhalgh, 2015; U.S. Department of Health and Human Services, 2010). Even patients who are well educated and highly literate, but who have limited health care experience, may struggle with the complexity of health care terminologies and procedures (Cornett, 2009).

### **Health Insurance Literacy**

Both health insurance literacy and health literacy require knowledge about health services and one's health status, and the ability to use this information to make decisions; however, health insurance literacy focuses specifically on how consumers engage with health insurance (Paez et al., 2014). Having health insurance coverage and a general understanding of health insurance is an important indicator of accessing timely and appropriate health care services. According to Paez and colleagues "Health insurance is one of the most complex and costly products that consumers purchase and use in their lifetime" (Paez et al., 2014).

Health insurance literacy is described as "the degree to which individuals have the knowledge, ability, and confidence to find and evaluate information about health plans, select the best plan for their own (or their family's) financial and health circumstances, and use the plan once enrolled" (Quincy, 2012). Per Paez et al. (2014), health insurance literacy "includes the need to understand how health insurance benefits are structured, and to understand and estimate cost sharing responsibilities." Studies have shown that health insurance literacy is low among U.S. consumers (Loewenstein et al., 2013; Long & Goin, 2014). Consumers have a general lack of understanding of health insurance terms and face significant challenges in understanding the concept of cost-sharing and calculating health care costs (Blumberg et al., 2013; Parragh & Okrent, 2015). Inadequate understanding of key terms related to health insurance prevents consumers from making either fully

informed choices in selecting the right health plan or appropriately using their coverage to access health care services.

### **Health Insurance Coverage Mandates for International Students**

Many universities, especially private ones, have had health insurance mandates for all students for years. Many American public university systems require students not covered through a parent or private plan to purchase university-sponsored coverage. This insurance mandate is extended to all international students (Collier, 2009). Most domestic students choose university-sponsored insurance for the convenience and affordability of these plans. A university-sponsored plan is a good option, particularly for older students who are less likely to be included on their parents' insurance plans (McIntosh et al., 2012). However, international students may not share similar sentiments on the affordability and convenience of the university-sponsored health plan.

International students are required to have health insurance either by participating in a university-sponsored student health insurance plan or getting health insurance coverage that meets specified standards. Most institutions require that the health insurance company should be headquartered and operating in the United States (Vorndran, 2015). All registered international students are automatically enrolled in a university-sponsored health insurance plan if they don't submit a waiver by a specified deadline to show proof of a comparable insurance (Vorndran, 2015). International students experience challenges learning about the U.S. health care system for the first time; however, domestic students are also taking control of their health for the first time and may be learning about the health care system and experiencing challenges as well (Mackert et al., 2017).

Despite the requirement to have health insurance, U.S. college students are not well-informed of health care insurance topics, the health insurance industry, and the terminologies used within the industry (Doucette, 2015). In a study that compared international students with domestic students, Mackert et al. (2017) concluded that domestic and international students are very similar in their motivations to seek health insurance information and perceptions of barriers to using health insurance. Mackert et al. (2014) reported that both domestic and international students seek health insurance information due to their lack of knowledge about health insurance, as well as when they are confident in their ability to use health insurance. Studies conducted among U.S. college students have shown that they have trouble deciphering some health-related information and working with numbers (Ickes & Cottrell, 2010; Nobles et al., 2018). Another study conducted among 362 domestic students classified 85.1% as health literate and 14.9% as being not health literate based on their scores on the Short Test of Functional Health Literacy in Adults (S-TOFHLA) (Hansen et al., 2015).

Accessing health care in an unfamiliar health care system is a clear challenge for international students, yet gaps exist in studies of health insurance literacy levels of international students in the United States. To address this gap, this qualitative descriptive study seeks to understand health insurance literacy needs among a group of international college students.

## METHODS

This qualitative descriptive study was part of a mixed method exploratory sequential design that explored human papilloma virus and associated cancer preventive practices among international students. As part of the main study, we explored international college students' knowledge and utilization of health care and health insurance in the United States. A qualitative description provides a rich description of a phenomenon and focuses on participants' perspectives. (Creswell, 2012). We employed two qualitative data collection strategies to provide a multidimensional view of these conversations: focus groups and one-on-one in-depth interviews. About two thirds of the participants were interviewed individually and one third participated in one of two focus groups. We employed two focus groups to obtain detailed information about personal and group opinions and perceptions related to health insurance literacy.

We utilized a multidisciplinary team of researchers to contribute to diverse content and methodological expertise, including health policy, immigrant's health, and qualitative methodologies. The study setting was a public research university located in the Southeastern United States. The institution has 14 degree-granting colleges and schools, and offers more than 350 bachelor's, master's, and doctoral degrees programs of study. The campus has 33,724 students with approximately 1,600 international students, as of fall 2016. University Institution Review Board approval was obtained prior to initiating any study activities.

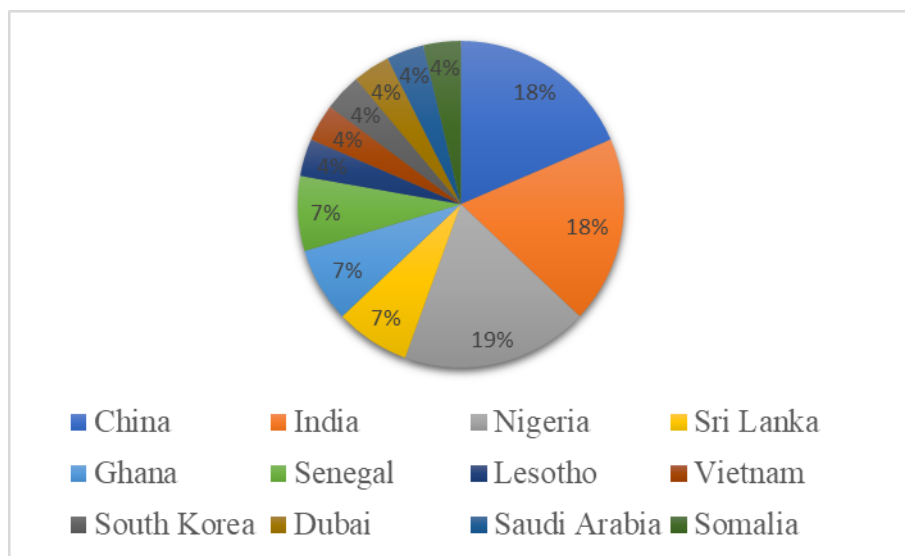
### Participants

Study participants were recruited using purposeful and snowball sampling of international students who met the inclusion criteria and volunteered to participate in the study. Each participant was asked to suggest other international students. Nine of the 27 participants (33.3%) were suggested by other participants. The inclusion criteria were: (a) 18 years or older; (b) self-report as an international student; and (c) must have spent at least a semester in the United States as a student. Participants included 21 graduate students and six undergraduates from 12 countries. The 27 participants had an average age of 28 years ( $SD = \pm 6$  years), and resided in the United States for 6 months to 10 years ( $2.5 \pm 2.3$  years) for educational pursuit (Table 1). Participants were from 12 countries: China, Ghana, South Korea, India, Senegal, Dubai, Nigeria, Lesotho, Saudi Arabia, Sri Lanka, Vietnam and Somalia (Figure 1).

**Table 1: Demographic Characteristics of the Sample ( $N = 27$ )**

Variable	$M \pm SD$ (range) or $N$ (%)
Age (years)	$28 \pm 6$ (18–41 years)
Gender	
Female	13 (48.2%)
Male	14 (51.6%)

Variable	<i>M</i> ± <i>SD</i> (range) or <i>N</i> (%)
Type of student	21 (77.8%)
Graduate	6 (22.2%)
Undergraduate	
Number of years in the US (years)	2.5 ± 2.3 (6 months–10 years)



**Figure 1: Study Participants' Countries of Origin (*N* = 27)**

### **Data Collection**

Data were collected by the principal investigator (second author) during the 2016–2017 academic session. The second author was a PhD student and international student at the time of the study. Participants were recruited from the university's various international student associations and websites via word of mouth and a study flyer. The interview and focus group guides were developed using information from the Health Information National Trends Survey. The interview and focus group guide included open-ended questions (e.g., tell me more about; what do you know about), and repeating portions of the participant's response to encourage more detailed reflection. Given concurrent data collection and analysis, after conducting the initial six interviews, we made minor edits (addition of new probes, reordering questions) to the interview and focus group guides. The guides contained questions such as: What do you know about health insurance in the United States? What do you know about the various services covered by your health insurance? What do you know about co-payment when you see a physician in outpatient? Tell me about your experiences with using your health insurance in the United States. Tell me about the strategies to help international students know more about health insurance.

The interviews and focus groups were all face-to-face and digitally audio-recorded and held in locations chosen by students (either home, restaurants, or campus classroom), at a scheduled time. Of the 27 participants, 17 were interviewed and 10 took part in the two focus group discussions (three and seven per group). The interviews ranged from 17–55 min (average time = 36 min) while the two focus groups lasted 1 and 2 hr. Only one participant's interview lasted for 17 min. From the participant's interview, we found that the participant knew little about health insurance but perceived it to be very expensive. However, the participant contributed much to the data considering the aim of the study. The details and the purpose of the study were explained to the participants, and a written informed consent was obtained prior to data collection. Participants completed a demographic questionnaire about age, sex, country of citizenship, length of stay in the United States, and level of study. Participants were often reminded that they had the right not to answer questions and the discussions were confidential. For purposes of analysis, participants were identified by the research identification number.

### **Data Analysis**

Using a thematic analysis approach (Saldaña, 2015), we took several steps to ensure the credibility and trustworthiness of the data analysis and our findings (Creswell, 2012). We began data analysis first with the transcription of six interviews by the second author and we subsequently compared the transcription with the audio recording to ensure fidelity. The two analysts then used the transcripts for independent reading and to begin initial coding. They individually coded the six initial interviews, identifying significant or salient phrases and words. In order to encourage reflexivity during the analysis phase, the team met to discuss initial thoughts, assumptions, and understandings of key concepts, and to reconcile any distinctions within and across the initial open coding. As data collection proceeded, the resulting coding schema developed from this initial exercise was then used by one of the analysts to code the remaining interviews directly on the digital files, which were loaded into QSR International's NVivo 10 Software (QSR International, 2012). The *in vivo* codes had descriptive labels and attributed to each segment of text in participants' own words. Following the initial coding of the six interviews, the authors identified and developed common themes across the data set. The principal investigator who conducted the interview also conducted member checking with three participant students to ensure the accuracy of data interpretation. This iterative process culminated in a final discussion, confirmation by all the authors, naming of themes, and write-up (Saldaña, 2015). We ensured data quality by documenting how we arrived at methodological decisions and themes. The researchers engaged in self-reflexivity whereby personal feelings and strategies used to maintain neutrality were documented during the research process.

## **RESULTS**

The following three major themes emerged from the data and describe health insurance literacy among international students including (a) limited knowledge, (b)

affordability, and (c) unmet expectation from the health insurance company and university.

### **Limited Knowledge**

#### ***Limited Knowledge of Health Insurance Options and Policy***

Participants were first asked if they had health insurance and what they knew about health insurance in the United States. All participants reiterated that it was required for them to have insurance. However, these students had limited knowledge and understanding of health insurance information. The participants noted that it was difficult to understand their health insurance plans and the various health insurance terminologies, which they found frustrating. Some participants said they did not receive information about their health insurance, while others explained that when such information was provided, it was very confusing. As a 26-year-old Nigerian female graduate student noted,

Being an international student, the policy and procedures are quite confusing, and I had a problem regarding the billing issue once. I was logging in and seeing the information but it was not very clear. They think they use common terminology which is not common to me being an international student coming all the way, maybe a more general description of the policy whenever you have appointment.

These participants attributed their limited or lack of knowledge to not being exposed to information on health insurance during university orientation and afterwards. A 22-year-old Chinese female undergraduate stated:

I never heard anything about health insurance, but during our orientation, there were some sessions that they told us that if you are mentally stressed, there are counseling sessions. They informed us about that. But I did not hear about health insurance.

Participants further explained that students were required to receive tests or vaccinations. However, it was not clearly communicated to them how to use their health insurance to access the test or whether such tests or vaccination would be covered. A 19-year-old Indian female undergraduate commented that she knew she could flu shots but she had never received more information about health insurance.

#### ***Limited Information About Services and Benefits***

Not understanding benefits was another issue that contributed to limited health insurance literacy among the students in this study. Participants discussed that they did not have a good understanding of health services available to them through their health insurance and did not know how to maximize benefits available to them. A 26-year-old Saudi Arabian male graduate student stated, "I don't really know, I don't think I have the information of what my health insurance covers or what I could get for free. But I will like to get the information." A 26-year-old Nigerian graduate



student had better understanding of benefits available, explaining, “It does not cover X-rays, blood tests, and if we have to get the vaccines. But in some cases, there are some discounts like if we want to take the flu shots, I think they are giving some discounts for that.”

A majority of the participants (74%) explained that they had not yet encountered the health care system because they had been in relatively good health. However, they speculated that their health insurance had limited coverage for basic services. A 34-year-old male Sri Lankan, graduate student noted,

The thing is, unless you are sick, you don't care about all these things until you need it, you don't care until you get sick, you get there and you find out what it (health insurance) covers, you get frustrated. You always think when you get there you will find a way to cross the bridge. Then you get there and find out that there is no bridge to cross.

However, some students reported receiving information about health insurance, and four students had used the insurance during a visit to the student health center. For example, a 28-year-old Nigerian male graduate student succinctly explained his understanding of his health insurance benefits,

The health insurance I have is not from the university, is paid by my department because I am on a full scholarship here. It's called the ISO, it means the international student organization insurance. It covers everything. There are few insurance that do cover the dental and the eye, but mine covers everything. I am in a plan which mostly covers everything.

### **Affordability**

Across the sample, these students noted that the cost of health insurance is a challenge to health care use, as they are unsure of how the health insurance system operates and how much they may need to pay for health services accessed. A 21-year-old Chinese male graduate student stated,

I paid for health insurance because it is mandatory, I do not know anything about it. I do think some of the things will be covered, if you want to do some test but you will have to pay something.

These students were intensely cognizant of the cost of obtaining health care in the United States. They discussed that health care services were expensive because health insurance worked with copayments. A 32-year-old Sri Lankan male graduate student noted,

I know I have to pay a lot of money for insurance and that health care is very important. They told us that insurance is the best way to get health care. I know they will pay 80% and I will be responsible for the 20.

## **Unmet Expectations**

Participants expressed frustration about many unmet expectations. The participants discussed that it had been a difficult process to get answers to most of their health insurance and health care-related questions. A 26-year-old Nigerian female student expressed her frustrations with the system:

Sometimes when you call the health insurance to ask questions, they will say they are not the person to answer you that you should talk to a health provider; when you ask the health provider they will say the health insurance company is the ones that answer this kind of questions. And sometimes they will say you are not authorized to learn this, I am the patient, I am paying for the insurance, I need to learn this. ... You know, I mean like, why shouldn't I know this. If I ask questions about some treatment, they will say sorry we cannot tell you, they will let you know once you have received the treatment.

Narratives such as this may fuel distrust in the health care system and perceptions that health care providers are unresponsive to students' needs or the providers are intentionally withholding valuable information from the student. These concerns may have implications for students' utilization of health care and their trust in the quality of care.

Another participant stressed the need for informational sessions during international students' orientation to equip them with the information they will need to understand their health insurance benefits or to choose the best plan. One participant suggested handing out flyers during fall orientation, while a 38-year-old Chinese female graduate student suggested the use of social media:

... Use Facebook, international students are on Facebook. If you want to tell them anything about health, use Facebook, create a page. And another thing you can use is countries club like Pan-African Student Association (PANASA) sometimes they may have someone who has some expertise in these areas who will come in and give PANASA students some information, like you know students' organizations should have someone who goes there to talk briefly with them, is better than nothing.

## **DISCUSSION**

This study is one of the first to examine health insurance literacy among international students in the United States. The findings from this study provide an understanding of these students' health insurance literacy as they interact with the health care system and the academic community. We found that international students experience several concerns related to health insurance including knowledge of health insurance options and information, affordability, and unmet expectations from health insurance companies and the university.

In line with previous research on health insurance (Kim et al., 2013; Nardinet al., 2016; Paez & Mallery, 2014; Paez et al., 2014), we found that many international

students struggle with understanding how their health insurance works (which is compounded by a lack of information from the university or the health insurance company) or comprehension of their health insurance benefits. Our finding is similar to that of Nobles et al. (2018), wherein the majority of the study's 455 students were unable to identify terms related to plan types and options, with 88% of them unable to determine their cost-sharing for two presented scenarios. Approximately 50% of the students indicated they had been confused about their health insurance plan, and one quarter had stopped or delayed medical care due to confusion (Nobles et al., 2018). Consumers' limited understanding of health insurance is likely to lead to misinformed decisions about health insurance plan choices and health insurance use. Lack of information or understanding of how to use information could lead to a mismatch of insurance to health care needs. Consumers may be carrying too much or too little health insurance coverage for their individual and family health and financial situations (Kim et al., 2013).

The university health center providers are expected to provide a number of services to students, including wellness exams, psychological treatments, vaccinations, and referral services (Carmack et al., 2016). Having adequate knowledge of available health services, cost of services, available free services, and where to access services will help international students take charge of their health care as they assimilate into American culture and the university system. When individuals understand their health insurance, they will be more likely to make cost-effective choices, such as visiting an urgent care rather than the emergency room (Loewenstein et al., 2013). However, limited health insurance knowledge and skills may make many individuals vulnerable and at risk of forgoing needed care (Paez & Mallery, 2014), undermining access to health services.

Drawing on Baker's (2006) conceptual model, many international students are not efficiently equipped with the "individual capacity" needed to process the health insurance information provided or navigate the health care system. According to Baker (2006), conceptual knowledge of health and health care facilitates health literacy. For example, students with a traditional, non-Western approach to health may retain their health-related beliefs and practices or may be inclined to forgo health care due to the complexity involved in seeking health care. International students may be influenced by their cultural backgrounds and may practice health behaviors that may be different from their U.S. counterparts (Yan & FitzPatrick, 2016).

Affordable and comprehensive insurance coverage and knowledge are fundamental to international students' use of health care. From the context of population health, limited health insurance literacy translates into less efficient use of medical and health care services including delayed care for ongoing conditions, not having a usual source of care, or not using preventive care services (Jenny, 2017). Comprehension of health insurance information may be affected by English language proficiency. Health-related information is written in English and complicated by technical terminology (Ulrey & Amason, 2001). International students may have difficulty understanding the complex information, especially if they are not native English speakers. In his study among international students, Sharif (1998) found that language is one of the barriers to health care utilization among international students. McClaran and Sarris (1985) also identified that international students utilization of

health care was lower than the general student body due to concerns related to insurance policies, patient/provider communication, and information about available health care services. To encourage health care use, language should be taken into consideration when providing insurance information and health care for international students, who may find it easier to communicate in their native language.

In this study, all students expressed concern over anticipated high health care costs despite being insured, which is consistent with previous research (Mori, 2005; Poyrazli & Grahame, 2007). Our findings are in line with a qualitative study conducted among 25 international students, who perceived the cost of U.S. medical services to be unaffordable (Zysberg, 2005). Cost is frequently cited as a barrier to receiving needed care (Morbidity Mortality Weekly Report, 2010). In an effort to control costs, international students may self-medicate or forego treatment, which can be life-threatening (Poyrazli & Grahame, 2007). For international students use health care effectively, university health centers should provide information about how health insurance benefits and co-pays work.

High out-of-pocket payments may cause international students to delay or forgo needed medical care and preventive services, which can lead to poorer health and greater medical expenditures in the long term. Many international students face financial setbacks from tuition, the cost of living, and the high cost of health insurance premiums (Gautam et al., 2016). Managing finances may impact international students' educational pursuits and prevent them from making the most of the educational opportunities in the United States.

International students experience unmet expectations related to health insurance information. They are a vulnerable population (Sherry et al., 2010) by virtue of their unfamiliarity with the American health system. Our study confirms previous findings that international students are not given adequate explanation or do not fully understand information, which prevents them from making informed decisions about their health insurance and how to use the university health center (Carmack et al., 2016; Cheng, 2004; Doucette, 2015). Carmack et al. (2016) reiterated the importance of providing information with memorable messages to prevent conflicting and problematic information. Such memorable messages provided at appropriate times through appropriate channels would equip ICS with information they need to understand and navigate the university health center and make sense of their health experiences as members of the university community.

Meeting health insurance informational needs may be a way to improve this group's health insurance literacy. University health centers and health insurance companies should provide international students with health insurance information, including printed and online descriptions of health insurance terms, as well as pictorial guides to understanding insurance documents (such as summary of benefits, eligibility forms, pharmacy tier structures; Jenny, 2017). It may be necessary to have an ongoing program to review health insurance information throughout the semester to ensure that international students' needs are met. McClaran and Sarris (1985) suggested that to increase the impact, informational sessions should be provided by international student peer mentors. Peer mentors who preferably came from the same country (or at least similar culture) should assist with navigating and using the U.S. health insurance system as they would point out the differences between the insurance

system in their own country and the American counterpart. Also, peer mentors could share their or their friends' experiences with health insurance information seeking and use (Mackert et al., 2017).

Other ways to improve health insurance information according to Consumers Union include improving glossary and definition terms, providing plan-specific examples to allow consumers to understand their health plan, and giving examples of consumers' out-of-pocket spending (Quincy & Union, 2011). International students should be provided with insurance information (e.g., leaflets) presented and communicated in a simplified way (e.g., avoiding technical terms), such that individuals from all sections of the population could read and understand it (Barnes & Hanoch, 2017). Health insurance literacy is vital to making an optimal health insurance choice, improving access, and using health care efficiently among this group.

## **CONCLUSION**

Our findings have several important practice and policy implications pertaining to the health insurance literacy needs of international students. To be a health insurance literature consumer, they need to have the knowledge, ability, and confidence to purchase and use health insurance (Quincy, 2012). While the consumer shares some responsibility, the health care system should also take responsibility in simplifying the information and process and helping consumers navigate the system (Quincy, 2012). With continual changes in health care reform policies, confusion around purchasing and using health insurance has increased in the general consumer population. Our findings suggest that the unique nature of the international student population necessitates a focus on targeted consumer education, outreach, and provision of additional health care services from academic institutions (knowledge and affordability).

In terms of improving knowledge of health insurance options and information, international students should be able to rely on the academic institution for support and guidance. The university health center is likely the first place that international students seek help in interpreting their health insurance plans, but these centers may not be well-equipped to provide students with a thorough understanding of their benefits. Health center staff should become knowledgeable about international students' health insurance options, find avenues to simplify health insurance information, and assist in navigation of the health care system. Explaining the health insurance system to these students can help them prepare for possible additional and unexpected costs that the students might incur based on the services they seek (Poyrazli & Grahame, 2007).

As international students are more likely than domestic students to lack health insurance literacy, the university's responsibility for providing adequate information needs to be reassessed. To mitigate the effect of poor health insurance literacy on health care use, international students should receive guidance on their plan coverage from both their health care and health insurance providers. Many international students are new to the U.S. health insurance system, and as new consumers, they will benefit from a process that reviews insurance plans to familiarize them with

health insurance benefits in a plan. To address the health insurance literacy gap, insurance companies should establish an “onboarding” process that reviews insurance plan features with new consumers when they enroll in a new plan. Similar to how a pharmacist reads through prescription drug information before administering medication, this insurance onboarding can educate consumers about best practices and the risks of certain types of plans (Adepoju et al., 2017). The onboarding process could take the form of a short online video, or prerecorded infographics via mobile apps (Adepoju et al., 2017).

The current political rhetoric related to health care reform and immigration policies has created an undercurrent of tension in American society, especially in academic institutions where the representation of diversity and equality are central. Such negative discourse can have an impact on the health and well-being of international students. Furthermore, these students may be unaware of the impact of federal and state-based health reform policy changes on their ability to access health care services. It is important that university administrators, health care providers, educators, and staff are aware of the implications of changes in federal and state health reform policies on access to health insurance and health care services for their international students. A comprehensive health needs assessment beyond the traditional health screening and immunization forms for incoming international students could help elucidate each student’s unique needs and lead to effective monitoring and interventions on appropriate use of health care. Multifaceted awareness approaches through social media campaigns, student organizations, and university health centers will help students stay informed on the ever-changing aspects of health care delivery in the United States, as it pertains to them.

### **Limitations**

Our study has several limitations. The sample was a small, convenience sample from one institution. We did not assess the type of insurance coverage and source of care among participants, which could impact health insurance cost and utilization. Lastly, we did not question students on English language proficiency, which may be a barrier in effectively understanding health insurance information.

In conclusion, given the benefits of having health insurance coverage, health insurance literacy is important in improving adequate utilization of health care services among international students. Appropriate use of health care services provides opportunities for international students to maintain healthy lifestyles through better engagement with America’s health care system (Adepoju et al., 2017). The health system has a responsibility to communicate timely, accurate information to all students, including international students, and to identify the appropriate strategies to promote health insurance literacy. Health systems should provide international students with health-specific information they need to take care of themselves and to make decisions about their health care. Written and spoken health communications must be simplified and presented in a way that reduces health literacy demand for international students. Additionally, steps to make the health system easy to navigate for international students are needed to promote preventive behaviors and healthier lifestyles. Findings from this study highlight the need for

additional research in developing appropriate interventions targeted at improving the health insurance literacy of international students.

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