A Study on Health Literacy of International Students in Australia

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Abstract: Due to the rapid development of technology and transportations, the number of international students pursuing tertiary education in developed countries is increasing dramatically. These international students move from different countries to developed countries, such as America, Australia, Canada and the United Kingdom. This paper reports a study which investigated international students' views on of the conceptual and functional aspects health literacy. This study involved the participation of 45 international students from different language and cultural backgrounds. All these participants completed an online survey, while seven of them attended semi-structured interviews. At the time the research was conducted, these students were studying in different faculties/disciplines at the University of Tasmania, Australia. Using data from semi-interviews and questionnaires, the findings of this study showed that demographic factors such as cultural background, educational background, and English level are influential to international students' health literacy. However, there is no finding indicating the occurrence of unawareness of health literacy among these participants. Some recommendations and suggestions deprived from the whole study are also presented.

Keywords: Health Literacy, International Students, Diverse Cultural Backgrounds

Introduction

International students make up a large proportion of students in Australian universities today. This has proven the success of this country in internationalising education and in building a cross-cultural learning environment. Each year, new students take up courses in Australia and add to the already significant international student body around the country. From January to October 2013, there were 504,544 enrolments by full-fee paying international students in Australia on a student visa. They are mostly from Asian countries, including China, India, Republic of Korea, Vietnam and Malaysia (Australian Education International (AEI) 2013). This growing population has caused concerns for policy makers who aim to provide positive study and living conditions for overseas students (AEI 2013). It is undeniable that overseas students, especially those who come from language and cultural backgrounds that differ greatly from Australia. These students face more challenges during study than the local students or European students who come from a similar western background. There is considerable number of research and literature discussing international students' perceptions of their academic challenges and experiences (Yan and Berliner 2013; Glass 2012; Curtin, Stewart, and Ostrove 2013), but less about their health literacy skills, which also have significant impacts on their academic performances and health status. This paper introduces a study which was conducted with 45 international students from five different cultural backgrounds. The aim was to examine their understanding of health literacy and the impacts health literacy skills have on study in Australia.

Literature Review

Health literacy has been recognised as a critical factor that influences the quality of life. It refers to people's ability and skills to process information in relation to health, and had different type, including functional, interactive and critical health literacy skills (Smith, Nutbeam, and McCaffery 2013). From the public health perspective, a high level health literacy is a key outcome of health education and communication, and it empowers the making decisions related to health (Nutbeam 2008; Rubin, Parmer, Freimuth, Kaley, and Okundaye 2011). Many problems

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COMMON GROUND

arose from inadequate health literacy have highlighted its critical role. For example, people living a modern life have benefited from the innovative health care systems in many parts of the world; however, patients who are not able to comprehend or apply state-of-art services may not be able to benefit from such advances (Cultilli, 2005). As a result, they may become vulnerable or may not be able to access efficient treatment to newly detected diseases. Similarly, research shows that patients with inadequate functional health literacy encounter an increased risk of hospitalisation (Williams et al. 2002). That is, poor health literacy skills could be a signal for oral communication difficulties, especially in the technical, explanatory domains of clinic-patient dialogue (Schillinger et al. 2004). Thus, health status of patients with poor health literacy may be negatively influenced by limited communication skills (Williams et al. 2002). It is a known fact that inadequate health knowledge is related to weaknesses in cancer control, including misunderstanding about cancer, delay on early detection, prognosis of cancer and sometimes distortion of the information received (Davis et al. 2002). It becomes imperative to examine influences on health literacy and seek improvement in these aspects. The main factors examined here fall into three aspects: health systems, educational systems, as well as culture and society (Nielsen-Bohlman, Panzer, and Kindig 2004; Cutilli 2005; Kickbusch 2008). Intervention addressing each of these components may hold promise for addressing limited health literacy skills.

Health systems play a vital role in educating patients about health conditions and in ensuring the most effective allocation of health resources (Kickbusch 2008). Advanced technologies have created opportunities; however, they have also increased the level of complexity in health systems. people with poorer health literacy skills who have never been exposed to these technologies may become even more vulnerable (Nielsen-Bohlman, Panzer, and Kindig 2004). Therefore, providing health information in a simple and understandable manner has become an emphasis (Cutilli 2005). More specifically, it is necessary for healthcare providers to be familiar with each patient's health literacy level, as well as other potential influential factors, such as their beliefs, cultural values and traditions (The Joint Commission 2007). Furthermore, it is recommended that health providers should simplify the wording and expression in their communication to ensure the content is understandable to the patient, for instance, by avoiding using medical jargon, or letting patients explain or demonstrate what they have been told (Nutbeam 2008; Rubin et al. 2011). Moreover, the amount of information provided should be limited to two or three key points at each time with the aid of illustrations or other techniques, such as drawings or electronic devices (The Joint Commission 2007).

Considerations must also be given to educational systems which plays a key role. For instance, schools are critical in building people's capacity in health literacy. As a result, it is significant how school equip students' knowledge and skills to enhance their health literacy level (St Leger 2001). Effort should be made early at a school age. Research shows that the ability to absorb new information decrease along with the age, thus, it is suggested that health literacy skills should be taught to the youth and then by some ways reinforced during their lifetime (Kickbusch 2008). By embedding topics in relation to health in other school curriculum areas, children can be exposed to health information, which can become a foundation for their health literacy skills (Cutilli 2005).

The effect of culture and society on individuals' health literacy cannot be underestimated. Culture can "shape perceptions and definitions of health and illness, preferences, language and cultural barriers, care process barriers, and stereotypes" (Nielsen-Bohlman, Panzer, and Kindig 2004, 9). Thus, information and knowledge of health care acquired by people from different contexts of culture and society may vary. Providing culturally competent care requires collaborative efforts from government agencies, healthcare facilities, and community groups. In order to improve the health literacy among community members with diverse backgrounds, it is essential to develop culturally sensitive information and provide information at convenient locations within the community (Cutilli 2005).

Studies have proved that the unfamiliar environment can lead to internal defensive reactions in the human body. For example, when a person experiences a new life in an unfamiliar place, he/she may encounter changes, such as physical tension, perspiration, blushing, and acceleration in body temperature, blood pressure, or pulse rates (Axelson 1993). Being exposed to excessive and regular stressful situations is a potential result of resettling in a new environment. It can lead to saviour chronic somatic complaints (Khoo, Abu-Rasain, and Hornby 1994), such as dysfunctions in pituitary-adrenal activities, impairment of immune systems, and mass discharges of the sympathetic nervous systems (Winkelman 1994). As most international students move to cultures and environments that differ greatly from their previous experience, they can be at high risk of facing these problems, especially in the first six months after arriving the new country (Menzies and Baron 2013; Wang et al. 2012).

In Ward's (1967) study, issues appeared in international students' health status are noted as the "foreign student syndrome", including symptoms of vagueness, nonspecific physical complaints, passive interaction style and unkempt appearances. Zwingman (1978), however, devotes the term "uprooting disorder" to describe their experiences of adjustment. Another study found that from 1956 to 1980, 67% of local and international students were diagnosed with paranoid delusions, while 62% had the depression syndrome and 52% of them experienced anxiety (Janca and Hetzer 1992). The results are supported by other literature (Thomas and Althen 1989; Sandhu and Asrabadi 1994). These findings have proved that international students have a high risk of suffering psychological problems that may influence their academic performance.

In responding to this high risk and a high need for enhanced health literacy skills among this group, this research was conducted at the University of Tasmania, Australia, to examine international students' views towards health literacy through investigating their awareness and experiences. The study aims to provide useful information and implications for Australian universities and other organisations to support future international students and in future policy making. The research objectives of this study are:

- to examine international students' views on the concept of health literacy as well as its importance;
- to explore the international students views on some demographic factors (cultural background, educational background and English ability) that may influence their health literacy; and
- to suggest possible approaches for improving health literacy of international students.

Methodology

This study used a mixed-method approach, and adopted both qualitative and quantitative research methods to collect and analyse data (Robson 2011; May 2001). A questionnaire was prepared as one of the research instruments, and tested with 10 participants in a pilot study to ensure the content validity. It included a section, which asks for democratic information of the participant, and 24 Likert-scale questions related to different issues of health literacy (Likert 1932) (As shown in Appendix 1). This questionnaire was distributed to 45 participants who were randomly selected. To obtain more in-depth information on the aspects covered in the questionnaire, semi-structured interviews were conducted with seven international students from different backgrounds, including gender, country of origin, length of study, academic discipline, etc. Details of the participants' backgrounds are shown in Table 1 below:

Table 1: Participants' Backgrounds

Participant groups	*Questionnaire %(n/N)*	*Semi-structured interview (n/N)*
Gender:		
Male	*46.7% (21/45)*	*2/7*
Female	*53.3% (24/45)*	*5/7*
Country of origin:		
Mainland China	*33.3% (15/45)*	*1/7*
Korea	*15.5% (7/45)*	*1/7*
Malaysia	*20.0% (9/45)*	*1/7*
Vietnam	*28.8% (13/45)*	*4/7*
Africa	*2.2% (1/45)*	*0/7*
Academic discipline:		
Arts	*6.6% (3/45)*	*0/7*
Business	*8.9% (4/45)*	*0/7*
Education	*6.6% (3/45)*	*3/7*
Health science	*15.5% (7/45)*	*3/7*
Science/Technology and engineering	*62.2% (28/45)*	*1/7*
Length of study:		
Less than 1 year	*11.1% (5/45)*	*1/7*
Over 1 to 2 years	*33.3% (15/45)*	*2/7*
Over 2 to 3 years	*22.2% (10/45)*	*1/7*
Over 3 to 4 years	*15.5% (7/45)*	*2/7*
Over 4 years	*17.7% (8/45)*	*1/7*

Results

Question 7 to Question 14 of the questionnaire were designed to examine the participants' views and attitudes to different issues related to health literacy. The participants were instructed to rate on a Likert scale from 1=Strongly Disagree to 5= Strongly Agree. The median values obtained show that the majority of participants have adequate understanding on the concept and importance of health literacy (Median=4.00 on Q7 to Q14). Most of them agree that having satisfactory health literacy skills means holding basic knowledge of healthy food, commonly seen sickness/diseases, literacy ability, hygiene, healthy exercise and healthy environment, as well as being aware that health literacy can vary among cultures. This is also reflected in the interview responses. For instance, a Vietnamese student believed that *"Cultural background will dramatically affect people's perspective about health. For example, people come from Asian country will have their own habit in diet. Consequently, this leads to their decision and opinion in choosing the food that they believe is good for health."* The agreement on Q13 shows the participants' awareness of the importance of health literacy. Median values of participants' responses on these questions are presented in Table 2 below.

Table 2: Median Scores Obtained on Q7 to Q14.

Question Items	*Median**
Q7 Health literacy should include some basic knowledge of healthy food	*4.00*
Q8 Health literacy should include some basic knowledge of common sickness/disease	*4.00*
Q9 Health literacy depends a great deal on people's ability to read and write.	*4.00*
Q10 Health literacy varies among cultures	*4.00*
Q11 Health literacy should include some basic knowledge of hygiene	*4.00*
Q12 Health literacy should include some basic knowledge of healthy exercise	*4.00*
Q13 People's poor health literacy can lead to their poor health	*4.00*
Q14 Health literacy should include some basic knowledge of a healthy environment	*4.00*
**Median scores obtained on Q7 to Q14 on Likert scale: 1= Strongly Disagree to 5=Strongly Agree.*	

Question 15 to Question 30 sought information on the participants' level of confidence on their own health literacy skills. As demonstrated in Table 3, most of the participants felt confident with their health literacy, which was believed to be a contributing factor to effective communication with doctors and university staff regarding health conditions (Q15, Q20, Medians=4.00). Most of them do not encounter difficulties in understanding health information written in English (Q23, Median=2.00). This result is consistent with some other questions (e.g. Q16 to Q18) representing elements of health literacy skills. Also, the participants' views on health are influenced by their cultural background (Q27, Median= 4.00), educational background (Q28, Median=4.00) and experience of living in Australian (Q30, Median=4.00). In terms of peers' influence on health literacy, their answers are divided (Q29, Median=3.00).

Participants' views on their knowledge about health insurance policy for international students are divided (Q21, Median=3.00), as well as their response to another three question items, Q24, Q25 and Q29. Therefore, Kruskal-Wallis tests were performed to see if their democratic background has an influence on their views. Their responses were tested against their gender, country of origin, academic discipline and length of study in Australia. Interestingly, the participants' gender was an influential factor on their understanding about the health insurance policies (Chi-Square=4.307, df=1, p-value=0.038). The male students are significantly more confident than the female students. However, gender did not appear to be influential on the other three items (Q24, Q25 and Q29) on which divided views were obtained from the participants. The other factors, including their country of origin, academic discipline and length of study, were not shown as influential factors on their choices. Median values of participants' responses on Q15 to Q30 are presented in Table 3 below.

Table 3: Median Scores Obtained on Q15 to Q30.

Question Items	*Median**
Q15 I feel comfortable to discuss my health condition with university staff	*4.00*
Q16 I have some basic knowledge of healthy food	*4.00*
Q17 I have some basic knowledge of common sickness/disease	*4.00*
Q18 I have some basic knowledge of hygiene	*4.00*
Q19 I feel confident in communicating with my doctors about my health condition	*4.00*
Q20 I have some basic knowledge of healthy exercise	*4.00*
Q21 I adequately understand health insurance policy for international students	*3.00*
Q22 I have some basic knowledge of healthy environment	*4.00*
Q23 I find it difficult to understand health information written in English	*2.00*
Q24 I need support from the university in terms of health information	*3.00*
Q25 I am confused with the health system in Australia	*3.00*
Q26 I understand the information printed on the food products	*4.00*
Q27 My cultural background has a strong influence on my view on health	*4.00*
Q28 My educational background has a strong influence on my view on health	*4.00*
Q29 My friends have a strong influence on my view on health	*3.00*
Q30 Living in Australia has a strong influence on my view on health	*4.00*
**Median scores obtained on Q15 to Q30 on Likert scale: 1= Strongly Disagree to 5=Strongly Agree.*	

Suggestions were invited on how to improve health literacy for international students. There were recommendations given to both current and prospective international students and to the University of Tasmania. Most of the participants insisted on the power of media as an education tool which has become an indispensible part of people's life. Therefore, international students should be proactive in using this tool to improve their health status. One Vietnamese student commented:

> We can read books, articles or others reading copies about health care and nutrition. Now, there are tons of information on health available online. (With) Just a click, millions of health information will appeared on screen. This is also a way to improve health literacy. Facebook is also an alternative to improve health literacy because there are a lot of people will share some articles with one another.

It was suggested that universities should pay more attention to international services in different aspects, apart from the academic issues. Care should be given according to international students' needs. Education on health literacy should be promoted by organising suitable and regular activities and events or including more information about health literacy into teaching and learning programs. The following discussions were made by another two students from Asian countries:

> The university should increase the attention on the students' health care as they are weak group to stay in the different place. There should be more seminars or workshop about health issues, I guess.

> There is a tendency to emphasize literacy and numeracy as essential teaching and learning components in Australia. However, the materials and contents for teaching literacy and numeracy do not cover health much. So, in my opinion, the university needs to expand the scope of literacy teaching and learning more related to everyday health practices.

Discussions

The participants showed a high level of awareness of the importance of health literacy, for both individuals and society. This is supported by other literature which highlighted the importance of health literacy and the results of poor health literacy skills. For example, in cases where a high level of care is needed, such as cancer, diabetes, and heart disease, a higher level of health literacy is vital. In addition, miscommunication between the patient and the doctor is one result of inadequate health literacy (Atchison et al. 2005; Chew et al. 2004; Schillinger et al. 2004). A society with low health literacy level may encounter economic ramification (Kickbusch 2008), due to accelerating cost burdens on society (Williams et al. 2002).

The greater differences there are between the home culture and the local culture, the more challenges international students may encounter when living in a new country (Furnham and Bochner 1982). In this study, the participants are international students from Asian and African countries, thus cultural differences are unavoidable. The findings of this study showed that cultural differences, including habit in diet, religion, sexuality and traditional medical treatment, are significantly influential factor on international students' health literacy (Nielsen-Bohlman, Panzer, and Kindig 2004). For example, poor communication may occur between physicians and female patients due to culturally insensitive behaviours which are perceived by the patient to be insulting or frightening (Stewart and Do 2003).

In addition, food is one vital element in protecting people's physical and psychological health (Bidlack 1996; Capra 2007). As majority of the participants in this study come from Asian countries, they find their habit in diet and etiquette of dining significantly different from the host country's culture (Morinaka et al. 2013). Health beliefs and practices are also affected by religious beliefs (Hoang and Erickson 1985). For instance, the Buddhism beliefs about diseases may inhibit patients from seeking medical services. The confusing interference of folk medicine tradition in a Western health discourse may also create conflicts in health access and treatment. This idea is proved by previous research (Toafa, ane, and Guthrie. 1999).

The role of educational systems is significant in forming one's health literacy. In order to improve people's health literacy skills, schools and universities should equip their students with knowledge and skills related to health at an early age (St Leger 2001). In this study, the participants are from different educational backgrounds, thus their health literacy, to some extent, could be achieved through different pathways. Students whose majors are related to health science showed a greater understanding on health literacy. However, health literacy of students from the other faculties also increased along with the time spent in university study in Australia. This may mean that health literacy levels are associated with the level of education a person gained (Raingruber 2013).

Conclusion

Due to the advancement of technologies, human beings are now living in a different world from the past. This "global village" has opened doors for people to live and study in other countries. Therefore, international students have become one of the most energetic groups with tenacious survival abilities and a willingness to face challenges. By studying abroad, international students not only contribute to the economy but also bring their cultures to the host countries. However, due to language, cultural and religious differences, these students may face advantages which affect their health, wellbeing and everyday life. Having adequate health literacy skills becomes vital in order to maintain a healthy life for this particular group. This paper provided an analysis of influential factors on the health literacy level of international students. While most of the participants showed a high level of confidence in their health literacy skills, the male participants held a more positive view in some of the areas. It is recommended in this paper that education systems, such as schools and universities, should play an active role in providing education in

relation to health to children at an early age. For international students in university contexts, they should make effective use of the internet to improve their own health literacy skills.

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APPENDIX 1:

Questionnaire

Section 1: Demographic information

Q1: Gender
Q2: Country of origin
Q3: Academic discipline
Q4: Length of study
Q5: Age
Q6: Length of stay in Australia

Section 2: Likert Scale section

1= Strongly Disagree
2= Disagree
3= Neutral
4= Agree
5= Strongly Agree

Q7 Health literacy should include some basic knowledge of healthy food
Q8 Health literacy should include some basic knowledge of common sickness/disease
Q9 Health literacy depends a great deal on people's ability to read and write.
Q10 Health literacy varies among cultures
Q11 Health literacy should include some basic knowledge of hygiene
Q12 Health literacy should include some basic knowledge of healthy exercise
Q13 People's poor health literacy can lead to their poor health
Q14 Health literacy should include some basic knowledge of a healthy environment
Q15 I feel comfortable to discuss my health condition with university staff
Q16 I have some basic knowledge of healthy food
Q17 I have some basic knowledge of common sickness/disease
Q18 I have some basic knowledge of hygiene
Q19 I feel confident in communicating with my doctors about my health condition
Q20 I have some basic knowledge of healthy exercise
Q21 I adequately understand health insurance policy for international students
Q22 I have some basic knowledge of healthy environment
Q23 I find it difficult to understand health information written in English
Q24 I need support from the university in terms of health information
Q25 I am confused with the health system in Australia
Q26 I understand the information printed on the food products
Q27 My cultural background has a strong influence on my view on health
Q28 My educational background has a strong influence on my view on health
Q29 My friends have a strong influence on my view on health
Q30 Living in Australia has a strong influence on my view on health

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