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Culture of Origin and Illness Attribution: The Implications of Cross-Cultural Awareness for Health Care Professionals

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The project and manuscript have been successfully completed and meet the standards of the School of Nursing at San Jose State University. The project demonstrates the application of professional knowledge, clinical expertise, and scholarly thinking. An abstract of the project and two copies of the manuscript are attached.

ADVISOR SIGNATURE

Colleen K. Taylor

DATE

5/15/00

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Elizabeth Ann Harkins

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Please submit this form to the Graduate Coordinator. Attach the abstract, two copies of the manuscript, and documentation of submission to the journal.

**CULTURE OF ORIGIN AND ILLNESS ATTRIBUTION:
THE IMPLICATIONS OF CROSS-CULTURAL AWARENESS
FOR HEALTH CARE PROFESSIONALS**

A Research Project

Presented to

The Faculty of the School of Nursing

San Jose State University

In Partial Fulfillment

of the Requirements for the Degree

Master of Science

by

Eri Matsumoto-Lyons

May 17, 2000

Abstract

People from different cultural backgrounds have different beliefs and perceptions concerning health and illness. Differing illness beliefs between health professionals and patients may result in conflicting expectations regarding treatment choice and outcome. This non-experimental research was designed to explore illness attribution among Caucasian, Hispanics, and Asians with chronic or acute illness. The results suggest that there was no significant difference in illness attribution beliefs between the three ethnic groups; however, primary language, years spent in U.S., and educational backgrounds were associated with differences in illness attribution. Health care providers must think of culture in a broader spectrum than just race and ethnic backgrounds. Further study with a larger sample size and in different languages is necessary to provide more information on patients' perception of illness attribution.

Culture of Origin and Illness Attribution:

Implications of Cross-Cultural Awareness for Health Care Professionals

The purpose of the study was to explore the relationship between culture of origin and illness attribution among patients with acute or chronic illness. People from different cultural backgrounds have different beliefs and perceptions concerning health and illness. These different perceptions of the causes of illness influence health-seeking activity, the patient's choice of treatment, and compliance with recommended treatment regimens (Kleinman, 1980). Therefore, perceived causes of illness provide an extremely important area of study.

Health professionals and patients may have different perceptions of illness, and their differing illness beliefs may result in conflicting expectations regarding treatment choice and outcome. Furthermore, lack of congruence between patient's and health professional's perceptions may take the form of patient non-adherence, mutual dissatisfaction, and inappropriate treatment and care on the part of the health care professional (McSweeney, Allan, & Mayo, 1997). Nurse practitioners (NPs) are trained to treat patients with consideration and respect for the multitude of factors that make each person a whole, complex entity. Understanding the patient's cultural background is an essential part of assessment and care planning from a patient-centered, holistic approach (Leininger, 1997). Exploring the link between a person's illness beliefs and culture of origin will help NPs understand the clients' perception of illness, a potentially crucial factor in planning mutually satisfying and effective treatment options.

Background

Patients may attribute their illness to events or factors that are not typically

associated with illness from a conventional Western medical perspective. For instance, individuals reared in traditional Chinese values and culture may attribute their illness to an imbalance of hot and cold elements, such as might result from an excessive intake of hot or cold food (Purnell & Paulanka, 1998). Mexican clients, in contrast, may attribute the cause of disease to “susto” or “sudden fright” in Spanish (Finkler, 1998). Other illness attributions may include extreme warm or cold climates, unhealthy lifestyles, emotional upset, fate, karma, witchcraft, curses, spiritual loss, lack of faith, punishment for a wrong deed, poverty, dreams, and so on. In every major culture there are idioms, phrases, and stories concerning illness and health (Kirmayer & Young, 1998), the practice of traditional folk remedies, and common knowledge passed on across generations (Turton, 1997). All of these factors play a part in constructing an individual’s culture-based perception of illness.

By understanding and acknowledging a patient’s culture-based perception of illness attribution, NPs can modify treatment according to the patient’s unique lifestyle and beliefs, and perhaps modify their own behavior to meet patient expectations. By understanding the patient’s cultural worldview, NPs can also appropriately discourage certain traditional practices that are clearly harmful to the patients while encouraging the many elements of traditional treatment that may be beneficial or at least harmless (Pachter, 1994). Culturally appropriate care may enhance recovery because of a tendency for greater patient compliance (Pachter, 1994), positive attitude associated with being understood, overall satisfaction with treatment, and a possible placebo effect (having faith in the treatment they receive) (Watson, 1979). Satisfying, culturally sensitive care can result when more non-Western, empathetic approaches are combined with

conventional care (Pachter, 1994). This is especially important for people who may not share U.S. mainstream cultural values, such as ethnic minority groups and/or low socioeconomic populations.

Research Question

The research question is: What is the relationship between culture of origin and illness attribution? Culture is defined as “the totality of socially transmitted behavioral patterns, arts, beliefs, values, customs, lifeways, and all other products of human work and thought characteristics of a population of people that guide their worldview and decision making” (Purnell & Paulanka, 1998, p. 2). Culture of origin is defined as the single culture the individual identifies as his or her own; it is the culture with which the individual feels most comfortable, most familiar, and from which he or she derives most of his or her worldview, lifestyle choices, and values. Culture of origin may or may not be concordant with a respondent’s physical characteristics, place of birth, or nationality. In this study, it is whatever the subject identifies under culture of origin in the demographic survey.

Illness attribution is defined as the beliefs, knowledge, and attitudes that the person has regarding his or her perception of illness causation. Illness attributions are categorized in several different ways. For example, Foster (1998) suggests categorizing illness etiology into Western and non-Western frames and further divides non-Western etiology into personalistic and naturalistic models. Based on Fabrega’s (1974) information-processing schemata, Cook (1994) uses two illness belief systems or models, biomedical and psychosocial. He adds a phenomenological model to his instrument to include an extra spiritual component of illness beliefs and behavior. However, illness

attribution patterns are most commonly divided into the following three categories: biomedical, traditional or folk medicine, and magicoreligious (Geissler, 1994; Lipson, Dibble, & Minarik, 1996; Purnell & Paulanka, 1998; Spector, 1996). The biomedical model can be understood to correspond to the conventional Western medical model. The traditional or folk medicine orientation reflects both the naturalistic and the psychosocial system. The magicoreligious model encompasses essential aspects of the personalistic and phenomenological views. In this study, biomedical, traditional, and magicoreligious referents were used as they seemed to be the most commonly cited and capture most, if not all, the essential qualities of the optional frameworks presented (Purnell & Paulanka, 1998).

The biomedical model is the conventional Western approach to medicine based on physical science, such as biology, chemistry, and physiology. Illness is attributed to a mechanical failure of bodily function, invasion of pathogen, hereditary or environmental factors, and lifestyle, such as inadequate diet, smoking, drinking, and stress (Finkler, 1998, Purnell & Paulanka, 1998).

The second model is the traditional model which represents branches of knowledge that have been carefully preserved by people in a society over many generations, often through spoken transmission. In particular, this model attributes illness to natural forces or conditions such as cold, heat, winds, emotional upset, change in energy flow, and an imbalance of the body elements as represented in natural forces. An example of the traditional model is the Yin and Yang theory commonly found in Eastern cultures (Purnell & Paulanka, 1998).

Thirdly, within the parameters of the magicoreligious model, supernatural powers

or mystical beliefs are said to influence human health and illness. Perceived causes may be mortal in origin, as with witchcraft or curse, punishment, or they can be brought about through some nonhuman agent, such as a ghost or evil spirit, or through the supernatural power of a deity or some other powerful being (Foster, 1998).

Literature Review

Illness beliefs and treatment preferences have been studied among three cultural groups (Indian, Chinese, and Angloceltics) in Canada (Cook, 1994). The research indicated the existence of culturally specific belief patterns among these three cultural groups and an identifiable linkage between a person's illness beliefs and the treatment choice. The study also indicated that the subjects' illness beliefs and treatment preferences were not only influenced by their culture of origin, but they were also influenced by their age and educational backgrounds. For example, younger subjects preferred to use folk healing while people with advanced age preferred to use biomedical treatment, most likely because their physical status required ongoing medical attention (Cook, 1994).

Turton (1997) conducted an ethnographic study of the health beliefs and illness behavior of a Native American tribe, the Ojibwe. Their health beliefs and traditions were derived from oral traditions, the intergenerational knowledge of elders, "commonsense" among the tribe, and spiritual and self-knowledge. The illness attribution beliefs of the Ojibwe included many traditional and magicoreligious models such as sorcery, breach of taboo, disease object intrusion, spirit intrusion, and soul loss. This was an in-depth qualitative study, and the method of exploring health beliefs can be expanded and applied to larger populations.

Although not linked to cultural factors, the meaning of breast cancer and its relation to patient outcome has been studied (Luker, Beaver, Leinster, & Owens, 1996). The perceived meaning of the illness appeared to influence patients' course of coping, both negatively and positively (Luker et al., 1996). Consequently, Luker, Beaver, Leinster, and Owens (1996) suggested that health care professionals should explore the meanings of illness from the patient's viewpoint in order to find ways to promote effective coping and prompt recovery both physically and psychologically. This study linked the perception of illness to coping and recovery; however, it did not give the demographics of the subjects nor did it take cultural context into consideration.

The perceived causes of a myocardial infarction (MI) and the influence of these perceptions on the patient's behavior after the MI were the subject of a study by McSweeney (1993). This author suggested that nurses should explore the illness beliefs of patients in order to plan effective rehabilitation by promoting behavior changes in patients which incorporate personal perceptions. This study demonstrated the link between health beliefs and health-seeking behavior. Consideration of illness attribution, however, appeared to be limited to conventional biomedical practices and beliefs, such as underlying medical conditions, diet, and obesity.

Luyas' study (1991) compared the explanatory models for Type II non-insulin-dependent diabetes (NIDDM) used by low-income Mexican-American women with the biomedical model. The explanatory models of Mexican-American women appeared to differ greatly from those associated with the biomedical model. Because of the essential differences in perceptions of the causes of illness, biomedical treatments recommended by health care providers did not appear to be understood or followed by the patients

studied. Luyas (1991) also indicated that the explanatory models of more affluent, educated persons in U.S. had been found to be more congruent with the biomedical model of disease. This study explored in detail illness attribution and treatment choices of Mexican-American women with diabetes and indicated that nurses must act as cultural brokers to assess patients' culturally specific needs so that patients could achieve biomedically desired treatment goals.

Most research that examined patients' perceptions of illness are qualitative in nature and rather narrow, usually conducted with interviews and carried out within one or two cultural contexts or perspectives. Little research has been done in the area of illness attribution using quantitative research methods or targeting more than two cultural groups at the same time. The research reported here was modeled on the illness attribution component of Cook's research (1994). In addition, this study was conducted in an acute and sub-acute care setting with Caucasian, Asian, and Hispanic populations.

Conceptual framework

An explanatory model, as proposed by Kleinman (1980), is a framework that facilitates the understanding of an individual's cognitive explanation of the illness in the context of his or her culture. Explanatory models for an illness are subjective and personal, and they help people make sense of and cope with the illness experience (McSweeney et al., 1997). Explanations for illness are also influenced by social environment, past experiences, and knowledge, and they can change over time. These explanations include beliefs concerning the etiology, time of onset of symptoms, course of sickness, the meaning of sickness, and treatment expectation (Kleinman, 1980). Explanatory models are widely utilized in nursing and medical studies (McSweeney,

1993, McSweeney et al., 1997, Luyas, 1991, Lloyd et al., 1998) and, as organizing concepts, have demonstrated great versatility and usefulness (McSweeney et al., 1997).

McSweeney et al. (1997) suggest that by studying a client's explanatory models as part of routine nursing care, it is possible to identify the following: (a) the similarities and differences between the client's perceptions regarding health and illness and those of the health care providers; (b) potential sources of conflict that may hinder mutually-acceptable care planning; and (c) a history of health-seeking behaviors and use of resources which may increase treatment options for patients. Careful history taking is an essential part of the nurse practitioner's role. In order to provide culturally sensitive care, NPs should incorporate patients' explanatory models of illness as a part of routine history taking such as past and present medical history, family history, and psychosocial history.

Methodology

This study used a descriptive design with a survey questionnaire. The questionnaire was designed to answer the research question about the relationship of culture of origin and illness attribution.

Sample

The subjects ($N = 60$) were patients with acute or chronic illness in an acute care hospital ($n = 31$) or at an urgent care center ($n = 29$) in an urban area of northern California. All participants were in stable condition and able to speak and understand English. Convenience sampling was used, and patients from different cultural backgrounds were recruited to complete the questionnaire until the sample number reached 20 from each cultural group (i.e., 20 Caucasians, 20 Asians, and 20 Hispanics). These three cultural groups represent the most typical cultural groups in this area.

Instrument

A questionnaire was developed to represent the essential elements of each of the three cultural worldviews concerning illness (biomedical, traditional, and magicoreligious) with five close-ended items from each of the three cultural categories. To assure consistency with the conceptual framework, the 15 closed-ended items were reviewed by two doctoral-prepared nurses who have experience in transcultural nursing. Minor corrections were made according to the reviewers' suggestions. The questionnaire was pilot-tested on seven subjects for clarity and ease of answering, and additional corrections were made according to their feedback.

The language used in this instrument was simple and did not presuppose any medical or technical knowledge on the part of respondents. Consequently, people whose primary language was not English, yet who have a functional level of English acquisition, were able to read and understand the statements. An example of a biomedical questionnaire item was, "Illness is caused by germs." An example of each traditional and magicoreligious questionnaire items were, "People become sick because of an imbalance of hot and cold elements" and "Illness is due to something beyond human power." The Likert scale was used and each item had five possible responses: "never," "rarely," "sometimes," "usually," and "always," where 1 = never and 5 = always.

A final open-ended questionnaire item asked the subjects to write their perception of illness in general in their own terms and voice. This question was created with the intention of soliciting any illness attribution that may not be covered in the closed-ended questions and to provide an opportunity for the patient to emphasize and elaborate upon any illness causation he or she may feel is particularly noteworthy. The instrument also

included a list of demographic questions to determine background information regarding age, gender, culture of origin, primary language, place of birth, years living in U.S., and educational level.

Results

Description of Sample

Table 1 shows the description of the sample. The sample was selected to be evenly distributed between the three ethnic groups with $n = 20$ in each. The sample consisted of 60 subjects, 31 subjects from the hospital and 29 from the urgent care, 24 men and 36 women aged 22 to 94 years ($M = 49.1$ years, $SD = 18.6$). The largest primary language group was English ($n = 32$, 53%). The bilingual group ($n = 11$, 18.3%) marked both English and another language as their primary languages, while the non-English group ($n = 17$, 28.3%) marked language(s) other than English as their primary tongue. More than half of the respondents had been in U.S. for lifetime ($n = 32$, 53%). Most of the respondents had either some college education ($n = 18$, 30%) or high school education ($n = 18$, 30%).

(Table 1 about here)

Quantitative Illness Attribution

Three ANOVA analyses were done to compare the mean scores for illness attribution among the ethnic groups for each of the categories (biomedical, traditional, and magicoreligious). The three ethnic groups, Caucasian, Hispanic, and Asian, showed no statistically significant differences among their illness attribution for the biomedical, traditional, or the magicoreligious categories (Table 2). That is, ethnicity showed no

relationship to whether a person held biomedical explanations for illness. The same lack of relationship was demonstrated for traditional and magicoreligious explanations.

(Table 2 about here)

Three ANOVA analyses were done to compare the mean scores for illness attribution among the language groups for each of the categories (biomedical, traditional, and magicoreligious) (Table 3). The result for the traditional category ($F = 2.690$) approached statistical significance with $p = .077$, when statistical significance is set at $p = 0.05$. A Fisher LSD post hoc comparison was performed to determine if any of the mean comparisons reached statistical significance among the three language groups. Data suggest that the English-as-primary-language group had a statistically significantly ($p = .034$) lower traditional attribution ($M = 10.75$) than the bilingual language group ($M = 12.27$). The non-English group had a traditional attribution mean of 12.23. That is, those patients who spoke English as primary language were less likely to use traditional explanations than those who reported two primary languages.

(Table 3 about here)

Three ANOVA analyses were done to compare the mean scores for illness attribution among the years in U.S. groups for each of the categories (biomedical, traditional, and magicoreligious) (Table 4). The result for the traditional category ($F = 2.981$) approached statistical significance with $p = .059$. A Fisher LSD post hoc comparison was performed to determine if any of the mean comparisons reached statistical significance among the years in U.S. groups. It was noted that the respondents who have lived in U.S. for life reported a statistically significantly ($p = .025$) lower traditional attribution ($M = 10.86$) than the respondents who were born outside of U.S.

and have lived in U.S. less than 30 years ($M = 12.88$). The foreign-born respondents who had lived in U.S. 30 years or over had a traditional attribution mean of 11.18. That is, those patients who were born in U.S. were less likely to use traditional explanations than those who were born outside of U.S. and had lived in U.S. less than 30 years.

(Table 4 about here)

Three ANOVA analyses were done to compare the mean scores for illness attribution among the four education groups for each of the categories (biomedical, traditional, and magicoreligious) (Table 5). The result for the traditional category ($F = 2.247$) was the only one to approach statistical significance with $p = .093$. A Fisher LSD post hoc comparison was done to determine if any of the mean comparisons reached statistical significance among the four education groups. The respondents with high school education reported a statistically significantly ($p = .014$) lower traditional attribution ($M = 10.61$) than those with no high school education ($M = 13.6$). The respondents with some college education also reported a statistically significantly ($p = .043$) lower traditional attribution ($M = 11.11$) than those with no high school education. The college graduate group had a traditional attribution mean of 11.44. That is, these results suggest that patients who have some college or high school education were less likely to use traditional explanations than those who have no high school education.

(Table 5 about here)

Qualitative Illness Attribution

The open-ended questionnaire item, "Please explain in your own words what you think has caused your illness," was answered by 60 respondents in an effort to expand upon quantitative data and enrich the study with respondent statements. One hundred and

ten statements from 60 respondents were coded into themes that emerged from the data. These themes represent different attributions for illness in the respondents' words. The biomedical category themes were germs, lifestyle, predisposition and preexisting conditions, situational, and health-care-related illness attributions. The traditional and magicoreligious categories each had a theme identified as spiritual.

Germs. Germ categories include illness attributions such as virus, bacteria, flu, flu season, and exposure to infection. Thirteen respondents identified the cause of illness as virus, bacteria, or flu, seven as the flu season, and another seven stated that the causes of their illness were exposure to infection/ sick people at work or at home. Consistent with the quantitative data, germ theory was the most common attribution of all three ethnic groups. Specifically, people with more education were more likely to believe in this illness causation.

Some examples of statements are: "Generally when I get sick, it's usually a cold or the flu. So I think it's mainly a virus." "Exposure to the flu virus, probably at work." "My husband got over bronchitis, so I think he passed it on to me."

Lifestyle. Illness-causing factors listed in this section were ones that can be controlled by patients themselves, such as eating habits, smoking, drinking, and stress. No respondents referred to exercise or sedentary lifestyle. Unhealthy eating habits were identified as the cause of illness by nine respondents. Some stated they were not eating the right food such as vegetables or eating too much sweet, rich, or fatty food. Three respondents noted that insufficient fluid intake might be the cause of illness, while ten people identified smoking, drinking, and/or consumption of recreational drugs. Some described the consequences of these habits to their health after many years. Stress was

identified as illness causation by ten subjects, and the stress they described included that from work, family, and other people.

Examples of responses in this category are: "My diabetes is, in my opinion, caused by eating too much sweet dessert and foods." "Not eating the right foods, too much lard, oil, Spanish food, refried foods, meat, pork, and not enough vegetables. Some Asian foods are healthy. If I just ate rice and vegetables, I would be healthy." "Lots of illness I believe is caused from stress. Taking care of my 93-year-old mother... Taking care of my grandson. I worry about everybody else but myself." "My resistance was low because I was working too much. I did not have enough rest."

Predisposition and preexisting conditions. Predisposition includes illness-attribution factors that are generally predetermined, physiological, and uncontrollable, such as gender, age, hereditary, and race. However, respondents in this study only mentioned hereditary and age. Six people noted hereditary factors, and three of them had diabetes, two had coronary artery disease, and one had an intestinal problem. Four stated that the illness was due to old age. Nine stated pre-existing conditions, such as diabetes, heart disease, hypertension, allergy, and asthma, as the cause of their present illness.

The examples respondents stated were: "Due to heart disease. I was diagnosed with murmur in the Navy. I had it for a long time." "Allergic to pollen in the air. Every year at this time, I start to sneeze and get itchy eyes when the plants turn green." "Family history of diabetes, my sister and my cousin had diabetes and kidney problem, my grandmother had an amputation."

Situational. Thirteen people identified one or a series of event that has changed their status of health dramatically. For example, respondents identified motor vehicle

accidents, work-related accidents, and surgery as the cause of complications such as whiplash, paraplegia back injuries, and general poor health.

Some respondents stated: "Motor vehicle accident caused my blood sugar to go up." "Drinking and driving. I had a motor vehicle accident in '73. Had a major surgery. I'm paralyzed waist down...I was depressed for a while after the accident. Felt sorry for myself for a long time. Thought about killing myself." "Work related explosion with heavy impact on lower front abdomen. My health has not been the same since then." "My illness began after bypass surgery."

Health-care related. Eight people commented on the health care treatments they had received that had direct influence on their physical or mental health. Seven of the responses described health care with negative effects such as unsuccessful surgical procedures, repeated surgeries, mistreatment, misdiagnosis, medication reaction, and miscommunication with health care professionals. Only two respondents described positive effects of health care. The events that occurred may be similar to those in "situational" explanation; however, these comments are significant in that they resulted in mistrust or frustration towards health care providers.

Respondents described these events as follows: "I saw my doctor regularly. He treated me with antibiotics, but it didn't get better. Now I have to have an amputation." "Doctors don't tell me anything, so I have no idea." "I have a big tonsil. My doctor wanted to operate and remove it. I talked to my boss and she told me to get a second opinion. I did so and he just observed it. And it didn't grow or anything. I'm so glad I didn't have to have the operation." The two positive comments were: "With the help that

I am receiving from the doctor and good therapy, I'm almost ready to go back to work."

"Having good rapport with doctors helps healing."

Spiritual explanation. Spiritual explanation encompasses traditional, mythical explanations to magicoreligious illness attribution. Some respondents noted the use of traditional healing methods, such as folk healers (curandero), chiropractor, and mind power. Four respondents identified mythical and traditional explanations of illness such as emotional upset, bad luck, and loss of spirit. Five people identified magical or religious causes of their illness, such as lack of faith and curse. Two expressed their strong beliefs in the existence of a spiritual force and its influence on people's health. Two patients noted magical thinking as possible cause of illness if people believed in it, but they denied that they believed in it themselves.

Examples of statements of spiritual explanations of illness included: "My culture has many 'myths' and 'wives tales' to explain some illness, some of which had been done to me as a child. My mother and grandmother believe in spiritual cure and many traditional healings like prayer, curandero, but I don't believe in it." "Cancer is caused by anger, stress, and resentment. My wife has cancer and she is going through chemo right now. I think she has a lot of anger and resentment, some of which towards me." "My children's spirits are calling me. They are around me and causing me to get sick. Especially the one who died a year and a half ago, the one in jail, and the one in my home country." "Spiritual force is causing more and more evil and good. Epidemic like AIDS and plague will occur because of spiritual force. Need to believe in Jesus and develop personal relationship with God. Nothing is coincidence. There is a meaning to every sickness, every encounter. No such thing as luck."

Other Causes. Other causes of illness included environmental factors, such as weather and dust, and failure of bodily function. Five respondents commented that they did not know what caused their illness.

Discussion

Contrary to Cook's finding (1994), the results showed no significant differences in illness attribution between three ethnic groups. Cook's research indicated the existence of culturally specific belief patterns among Chinese, Indian, and Angloceltic groups and the influence of age and educational backgrounds on illness attribution. In this study, primary language, years in U.S., and educational backgrounds were associated with differences in illness attribution. Primary language, years spent in U.S., and educational backgrounds reflect the subject's level of acculturation and other various cultural influences. According to the results, these components of culture more strongly influence clients' illness beliefs than ethnic or racial background by itself. Providers must take a broader look at clients and think of culture in terms of these three variables as well.

In the qualitative data analyses, some patients expressed their mistrust and concerns in the treatments they were receiving, and some actually identified some of the treatments they received as the cause of their present illness. Others expressed concerns and uncertainty related to miscommunication or non-communication with health care professionals. It is important to listen and explore what patients perceive as cause of illness; but it is also important that NPs educate patients regarding medically accepted explanations for illness. When NPs show that they are willing to communicate, open conversation with patients can result. Good communication will help reduce anxiety and frustration among patients as well as health care providers.

Limitations

The findings of this study may have been related to a number of factors, such as language factors and the setting in which the questionnaire was given. First, all subjects spoke, read, and understood English either as their primary or second language, which means these subjects have spent time acquiring English language and acculturating into mainstream Western culture. It is possible that the immigrants to U.S. are eager to acculturate and try to think and respond to the questionnaire as they think may be appropriate in mainstream American culture.

In addition, the subjects were either in the acute care hospital or at urgent care center seeking treatment for their illness, and this may predispose them to be compliant with biomedical beliefs. The combination of the biomedical setting and the questionnaire being given by a health care provider (RN) may have influenced their high score in the biomedical model.

Due to time constraints, the instrument was not translated into the primary language of each of the three target populations or any of the subgroups which might exist among Asian respondents. Research instruments in a subject's primary language, especially first generation immigrants, may elicit different results. Additionally, this instrument may lack reliability or validity as psychometric testing was not done. Post hoc analysis of this study data was conducted in an attempt to further elucidate the quantitative findings. It is acknowledged that such analyses may result in findings that are artifactual and may not be reproducible. Therefore, further study using a larger sample is recommended to clarify the finding reported in this study.

Conclusion

As the study indicated, cultural influence is not confined to the clients' ethnic or racial backgrounds, but is influenced by the level of acculturation and education. The degree of acculturation to Western culture may be reflected in their primary language, years lived in U.S., and educational level. Further study with a larger sample size and using subjects' primary language is necessary to provide more information on the perception of illness attribution among various cultural groups. Further study on the relationship between socio-economic backgrounds and illness beliefs, comparison between first and second-generation immigrants, and illness beliefs among health care professionals from various cultural backgrounds may be useful.

As Luker et al. (1996) suggested, health care professionals should explore the illness beliefs and the meanings of illness from the patient's viewpoint in order to promote effective coping and recovery. By understanding and acknowledging a patient's culture-based perception of illness attribution, NPs can formulate and modify treatment plans according to the patient's illness beliefs and health seeking behaviors. Nurse practitioners can also appropriately discourage certain traditional practices that may be harmful to the patients while incorporating many elements of traditional treatment that may be beneficial to patients. Culturally appropriate care will help promote better communication, compliance to prescribed medical regimen, positive attitudes, improved recovery time, and overall satisfaction with health care provided.

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Appendix

Table 1

Demographics of the Sample

Category	Frequency	Percentage
Ethnicity		
Caucasian	20	33%
Hispanic	20	33%
Asian	20	33%
Primary Language		
English	32	53%
Bilingual	11	18%
Non- English	17	28%
Years in U.S.		
Less than 30 years	16	27%
30 years and over	12	20%
Life time	32	53%
Education		
No high school	10	17%
High school	18	30%
Some college	18	30%
College graduate	14	23%

Note. Groups may not add to 100% due to rounding.

Table 2

Differences in Illness Attribution among Caucasian, Hispanic, and Asian Groups

Scale	<u>SS</u>	<u>df</u>	<u>MS</u>	<u>F</u>
Biomedical				
Between groups	.549	2	.275	.753
Within	20.784	57	.365	
Total	21.333	59		
Traditional				
Between groups	.825	2	.413	1.251
Within	18.798	57	.330	
Total	19.623	59		
Magicoreligious				
Between groups	.257	2	.128	.311
Within	22.316	54	.413	
Total	22.573	56		

Note. All three ANOVA analyses were NS.

Table 3

Differences in Illness Attribution among English, Bilingual, Non-EnglishGroups

Scale	SS	Df	MS	F
Biomedical				
Between groups	.194	2	9.683E-02	.261
Within	21.140	57	.371	
Total	21.333	59		
Traditional				
Between groups	1.692	2	.846	2.690
Within	17.931	57	.315	
Total	19.623	59		
Magicoreligious				
Between groups	.395	2	.197	.480
Within	22.178	54	.411	
Total	22.573	56		

Note. The ANOVA analysis for traditional category was $p = .077$. Other ANOVA analyses did not approach statistical significance. Fisher LSD post hoc comparison showed English speakers had significantly ($p = .034$) lower use of traditional attributions than bilingual speakers.

Table 4

Illness Attribution among Years in U.S. Groups

Scale	<u>SS</u>	<u>df</u>	<u>MS</u>	<u>F</u>
Biomedical				
Between groups	9.792E-02	2	4.896E-02	.131
Within	21.235	57	.373	
Total	21.333	59		
Traditional				
Between groups	1.858	2	.929	2.981
Within	17.765	57	.312	
Total	19.623	59		
Magicoreligious				
Between groups	1.507	2	.753	1.931
Within	21.066	54	.390	
Total	22.573	56		

Note. The ANOVA analysis for traditional category was $p = .059$. Other ANOVA analyses did not approach statistical significance. Fisher LSD post hoc comparison showed life in U.S. group had significantly ($p = .025$) lower use of traditional attributions than less than 30 years in U.S. group.

Table 5

Illness Attribution among Education Groups

Scale	<u>SS</u>	<u>df</u>	<u>MS</u>	<u>F</u>
Biomedical				
Between groups	1.074	3	.358	.990
Within	20.259	56	.362	
Total	21.333	59		
Traditional				
Between groups	2.108	3	.703	2.247
Within	17.515	56	.313	
Total	19.623	59		
Magicoreligious				
Between groups	1.153	3	.384	.951
Within	21.419	53	.404	
Total	22.573	56		

Note. The ANOVA analysis for traditional category was $p = .093$. Other ANOVA analyses did not approach statistical significance. Fisher LSD post hoc comparison showed that those with some college education had significantly ($p = .043$) lower use of traditional attributions than those with no high school education. Another Fisher LSD post hoc comparison showed that those with high school education had significantly ($p = .014$) lower traditional attributions than those with no high school education.