

THE IMPACT OF CULTURAL IDENTIFICATION ON
HEALTH BELIEFS AMONG AMERICAN INDIAN
AND CAUCASIAN COLLEGE STUDENTS

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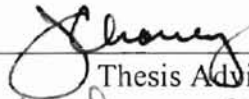
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TABLE OF CONTENTS

Introduction.....	1
Literature Review.....	3
The Health of American Indians.....	3
American India Health Beliefs.....	5
Health Behaviors & the Health Belief Model.....	7
Summary.....	13
The Present Study.....	14
Method.....	15
Participants.....	15
Measures.....	15
Procedure.....	19
Results.....	20
Discussion.....	24
References.....	31
Appendices.....	35
Appendix A: Tables.....	35
Appendix B: Demographics Questionnaire and Health Awareness Survey.....	39
Appendix C: Institutional Review Board Approval.....	63

LIST OF TABLES

Correlation Matrix for Dean's Disorder.....	36
Means for AIDS and Mononucleosis.....	36
Correlation Matrix for AIDS and Mononucleosis	37
Primary Analyses	37
Comparisons of Cultural Identification between Races.....	38

The Impact of Cultural Identity on Health Beliefs in
American Indian and Caucasian College Students

American Indians have the poorest health of any racial group in the United States (Goldberg et al., 1991). These authors specifically identify tobacco use, alcohol consumption, obesity, high blood pressure, and lack of seat-belt use as high risk factors for injury and illness among American Indians. In addition, infectious and chronic diseases such as hepatitis, sexually transmitted diseases, cancer, and diabetes are common threats to the health of American Indians (for a detailed review, see Young, 1994). Interestingly, prevention and treatment of these health problems are to some extent dependent on an individual's self-management of his or her own health behaviors. A health behavior has been defined as any activity performed by a healthy person to prevent or detect disease (Kasl & Cobb, 1966a). It is generally believed that poor health behaviors lead to poor health.

Diabetes provides a good illustration of the health crisis faced by the American Indian population. If not managed correctly, the illness can lead to visual impairment, vascular and renal disease, or lower extremity amputation. American Indians are at high risk for such complications, and death resulting from diabetes is higher among American Indians than any other group in the U.S. (Young, 1994). Because at-risk persons can reduce their chances for developing diabetes (or at least decrease its severity and the risk for complications) through self-management behaviors such as proper diet, exercise, and weight control, one may be inclined to wonder why diabetes constitutes such a problem for this particular population. It is reasonable to assume that part of the problem may be the result of poor health behaviors by American Indians.

Perhaps the most extensively used model for the study of health behaviors that can be found in the literature is the Health Belief Model (HBM; Rosenstock, 1966, 1974). The HBM has been used in a wide variety of settings with a large number of health behaviors. The HBM holds that perceptions of illness susceptibility and severity and the perceived barriers to and benefits of appropriate actions influence the decision to engage in health behaviors. Assuming that the health behaviors of American Indians may be poorly managed, the case can be made that their HBM related perceptions differ from those of other, healthier populations. Perhaps healthcare providers are not effectively communicating to their American Indian patients the degree of illness susceptibility and severity and the importance of related health behaviors with regard to diabetes and other such health problems. As pointed out by Young (1994), a problem exists in the adaptation of treatment and health education programs developed by Western science to account for cultural differences of American Indians.

If differences in health beliefs between American Indian patients and non-native health service providers exist, they would create difficulty in treating both mental and medical illnesses. There is evidence from the literature that such differences do exist, particularly in regards to what makes an individual susceptible to an illness and what actions are beneficial in illness prevention and cure. For example, Locust (1985) reports that traditional American Indians hold that wellness is maintained by the harmony of one's spirit, mind, and body. Unwellness is caused by disharmony (often resulting from immoral behavior) and is cured when an individual returns to a state of harmony. Similarly, keeping in harmony can prevent unwellness. Additionally, American Indian culture values a focus on the present while discounting the need to plan for future (Clark

& Kelly, 1992). This view is in stark contrast to the biology-based disease model common to Western culture in which illness is caused by a biological phenomenon and is cured by biological interventions or behavioral interventions that directly influence biology.

Given these differences in health beliefs, it is reasonable to assume that American Indians may view the very nature of diseases (such as diabetes) in a different way than do their non-American Indian physicians. Such differences may result in a lack of understanding about the need to comply with physicians' instructions on disease prevention and management. Speaking more generally, American Indians may perceive the utility of certain health behaviors differently than the rest of the U.S. population. This text reviews the literature on the health crisis faced by American Indians, the nature of their health beliefs, and the literature concerning the HBM; it then summarizes and integrates these areas of research. Finally, a study is presented that explored the influences of cultural self-identification and the perceived variables of the HBM on preventative health behaviors (PHBs).

The Health of American Indians. In recent years, a growing body of literature on the health status of American Indians has pointed to several key issues and problems. Goldberg et al. (1991) report that the health of American Indians is poorer than any other group. Specifically, they identify tobacco use, alcohol consumption, obesity, high blood pressure, and lack of seat-belt use as high risk factors for injury and illness among American Indians. In addition, infectious and chronic diseases such as hepatitis, sexually transmitted diseases, cancer, heart disease, and diabetes are common threats to the health

of American Indians (Young, 1994). Among these illnesses, heart disease and diabetes emerge as major health threats to American Indian people.

Campos-Outcalt et al. (1995) report that coronary heart disease is the leading cause of death among American Indians. These authors identify five risk factors in the development of heart disease in native populations: diabetes, hypertension, high cholesterol levels, obesity, and smoking. Furthermore, 52 percent of patients surveyed had two or more of these risk factors with obesity and diabetes being the most prevalent. The importance of diabetes as a risk factor has been corroborated by Howard et al. (1995) who report a high prevalence ratio (4.6 to 1.8) of diabetes among American Indians with coronary heart disease.

In addition to being a risk factor for heart disease, diabetes is in and of itself a major threat to American Indians. If not managed correctly, the illness can lead to visual impairment, vascular and renal disease, and lower extremity amputation. American Indians are at higher risk for complications and death resulting from diabetes than any other group in the U.S. This pattern especially holds true for diabetic end-stage renal disease (Dyck & Tan, 1994). Quiggins and Farrell (1993) found that 88 percent of cases of end-stage renal disease were attributable to diabetes in a study conducted among the Eastern Band of Cherokee Indians. These facts should be considered in light of the fact that American Indians, unlike any other group, have access to free medical care through the Indian Health Service (IHS), a division of the United States Public Health Service. The question may be asked why that despite the availability of healthcare services, do American Indians have such poor health.

American Indian Health Beliefs. One noteworthy explanation for the dilemma has been put forth by Schmidt (1988), who suggests that problems may emerge when cultural factors prevent physicians and their American Indian patients from communicating effectively. As she points out, physicians are taught to focus on particular responses in their patients. When these responses are not as expected, physicians tend to make certain assumptions (often negative) about the patient. Non-native physicians may also have divergent views on basic things such as eye-to eye contact, timeliness, and family involvement in treatment. Schmidt also explains that the very concept of illness found in Western medicine differs from that of American Indians. Indians view illness as being in disharmony with nature and as having a strong spiritual component. The literature provides other evidence for this viewpoint as well. As pointed out by Young (1994), a problem exists in the adaptation of treatment and health education programs developed by Western science to account for cultural differences of American Indians.

If differences in health beliefs between American Indian patients and non-native health service providers exist, they would create difficulty in treating both mental and medical illnesses. There is evidence from the literature that such differences do exist, particularly in regards to what makes an individual susceptible to an illness and what actions are beneficial in illness prevention and cure. Locust (1985) reports that traditional American Indians hold that wellness is maintained by the harmony of one's spirit, mind, and body (similar to the views expressed by Schmidt above). Unwellness is caused by disharmony (often resulting from immoral behavior) and is cured when an individual returns to a state of harmony. Similarly, keeping in harmony can prevent

unwellness. Additionally, there is a tendency among American Indians to focus on the present while discounting the future (Clark & Kelly, 1992). Kim & Kwok (1998) found that 62% of Navajo Indians have used native healers at least once and that 39% use them on a regular basis. Traditional healers were consulted for everything from arthritis to depression to “bad luck”. These findings add further support to the argument that the American Indian view of medicine is in stark contrast to the biology-based disease model common to Western culture in which illness is caused by a biological phenomenon and is cured by biological interventions or behavioral interventions that directly influence biology. Further evidence for the opposing nature of Western medicine to traditional American Indian healing is provided by Berman et al. (1998). These authors report that in a survey of primary care physicians’ attitudes towards complementary –alternative medicine, Native American medicine was found to be one of the least accepted and least often used methods by physicians.

Given these differences in health beliefs, it is reasonable to assume that American Indians may view the very nature of diseases (such as diabetes) in a different way than do their non-American Indian physicians. Such differences may result in a lack of understanding about the need to comply with physicians’ instructions on disease prevention and management. Speaking more generally, American Indians may perceive the utility of certain health behaviors differently than the rest of the U.S. population. Despite a few good articles (such as the ones discussed here), the literature on American Indian health beliefs is unfortunately lacking, especially with regards to empirical investigations. Numerous models have been advanced by western medicine and psychology to explain health beliefs and their relationships to health behaviors, but the

applicability of these models to American Indian populations has not been demonstrated. Additionally, no culture-specific models about American Indian health have been put forth.

Health Behaviors and the Health Belief Model. For the purposes of this discussion, health behavior will be defined as any self-maintenance behavior undertaken by an individual for the purposes of preventing illness during a state of healthiness, identifying illness in the presence of one or more symptoms, or curing an illness that has been identified. This paper will discuss three types of health behaviors: preventive health behavior, illness behavior, and sick role behavior.

Generally speaking a preventative health behavior (PHB) is an action taken to avoid illness. Kasl and Cobb (1966a, 1966b) provided a definition for what they called “health behavior”. Their definition of such behavior is “any activity undertaken by a person believing himself to be healthy, for the purpose of preventing disease or detecting it in an asymptomatic stage” (1966a, p. 246). Examples include regular physical and dental check-ups, brushing ones teeth, and mammograms and prostate exams. Given that the above definition implies an effort to avoid illness the more specific term “preventative health behavior” is more precise when conceptualizing such activities. In this paper, “preventative health behavior” and “PHB” will refer to the behaviors in this definition.

Kasl and Cobb also go on to contrast PHBs with two other types of health related activities. These other two are undertaken by people who are sick as opposed to those who are healthy. The first of these, illness behavior (ILB), they define as actions taken by a person who feels ill that are meant to determine the state of personal health and

discover remedies. Examples of illness behavior include health complaints and consultation seeking. The second kind of activity is sick role behavior (SRB). SRBs are actions taken by an ill person in order to get well. Examples include undergoing treatment and associated dependent behaviors (e.g., taking time off from work).

Perhaps the most extensively used model in the study of health behaviors is the Health Belief Model (HBM; Rosenstock, 1966, 1974). According to the HBM, people's health behaviors are largely dependent on a set of perceptual variables. There are two classes of these variables representing (1) the state of psychological readiness to take action and (2) the extent to which the action is effective in reducing threat. Each class contains two variables for a total of four.

The first variable, perceived susceptibility, is a readiness variable that refers to the degree to which an individual believes he or she is likely to develop a health problem. The second variable, perceived severity, is also a readiness variable and refers to how serious the health problem is or would be if the individual were to develop it. The third variable, perceived benefit, is an effectiveness variable that refers to the degree to which a health related behavior would help an individual prevent or eliminate a health problem. The fourth variable, perceived barriers, is the other effectiveness variable and refers to the degree to which an individual believes that internal or external forces will hamper the effectiveness of a health-related behavior. It should be noted that these variables are all based on individual perceptions, and are therefore variable from one person to another. The HBM predicts that health behaviors are most likely to occur under conditions where perceived severity, susceptibility, and benefit are high and perceived barriers are low.

In addition to the four perceptual variables listed above, the model makes two other assumptions. First, some internal or external factor serves as a cue to action, and second, motivation is a driving factor and an individual must be concerned with the related aspects of his or her own health before acting on such cues. The health belief model has been used to study SRBs and ILBs, but it has been used most extensively for the study of PHBs. Rosenstock himself (1974) points out that the HBM was formulated to examine PHBs as per the Kasl and Cobb definition above.

Millar and Millar (1995) conceptualized the model as a two-part decision making process. The first part is driven by a desire to avoid or alleviate illness and includes the readiness variables of perceived susceptibility and severity. The second part is driven by a belief that a health behavior will prevent or reduce the illness and includes the effectiveness variables of perceived benefit and barriers. In other words, an individual must consider first the health problem, and then the related health behavior

Praise for the utility of the HBM's focus on individual psychological variables has come from critics of the medical model approach to explaining health behaviors. Becker and Maiman (1975) particularly criticize the medical model for failing to provide insight into patient noncompliance with both preventative and curative measures prescribed by health care providers. A specific shortcoming that has been pointed out in the literature are that the medical model focuses on aspects of the patient, treatment regimen, and illness that are ascribed and immutable and that are unrelated to individual motivations and perceptions of the patient (Becker, 1974; Becker & Maiman, 1975). Examples of such aspects are patient demographic information (age, income, etc.), type

of regimen, and medically defined (as opposed to patient defined) seriousness or disability.

The HBM has been used in a wide variety of contexts to study many illnesses and other health related issues. Areas of research that have utilized the HBM include influenza, polio, and cholera vaccinations, tuberculosis screenings, heart disease, mammograms and breast self-exams, cervical cancer prevention, and genetic screening for Tay-Sachs disease. In addition to specific illnesses, the HBM has also been employed in the study of seat-belt use, exercise, nutrition, smoking, dental hygiene, and general health care service utilization. Adherence to hypertension, diabetes, and renal disease regimens, as well as mothers' compliance with children's medical regimens has also been researched. Please see Rosenstock (1974) and Janz & Becker (1984) for complete reviews of HBM research.

In reviewing the 29 HBM studies from the years 1974 to 1984, Janz and Becker (1984) found only three studies that contradicted the predictions of the model. These authors also report a number of trends in the findings of these studies. With regards to PHB, perceived susceptibility, benefits, and barriers are consistently predictive of the PHB under study. These authors suggest that perceived severity may not be strongly associated with PHB because healthy individuals have difficulty conceptualizing the severity of an illness they have not experienced. With regards to SRB, they report that all four variables have a significant effect. They suggest that perceived severity comes back into play because the individuals in these studies are experiencing symptoms. Interestingly, perceived susceptibility is less important in SRB than in PHB, presumably because susceptibility is moot with sick individuals.

Janz and Becker also note that prospective studies tend to be more supportive of the model than do retrospective studies. The exact meaning of this phenomenon (if any) is yet to be determined. Finally, these authors note that survey-research has dominated the HBM literature and that further research of this type is unlikely to yield any new findings. They do suggest, however, that more experimental research of the HBM may have some merit.

Harrison, Mullen, and Green (1992) reiterated the lack of sophisticated research of the HBM in their meta-analysis of the HBM literature. Overall, the authors found significant positive effect sizes for HBM dimensions and health behaviors. This finding should be qualified by pointing out that of 147 original publications of HBM research with adults that were found in the literature, only 16 could be included in the analysis. This was due to the fact that these 16 were the only studies that met inclusion criteria for establishing validity and reliability of measures used. What this suggests is that there are relatively few scientifically sound studies of the HBM. In other words, the model is still in vital need of thorough testing, particularly in the way of basic experiments as per the suggestions of Janz and Becker (1984). The experimental literature regarding the HBM is indeed sparse. A thorough review of the literature yields very little in the way of basic empirical tests of the model.

Two experimental studies that have been published are reviewed here. The first of these studies, conducted by Ronis (1992), asked participants to assume the existence of a fictional disease and related health behavior in a study of subjective expected utility and the HBM. The author was able to experimentally manipulate the information the participants received about the illness and therefore manipulate their perceived HBM

variables. The results indicated that the perceived benefit of an action was greatly increased when perceived susceptibility and severity were high. In addition, the author demonstrated that a health behavior was more likely to occur when the lowering of susceptibility and severity was conditional upon its occurrence.

The second experimental study was conducted by Millar and Millar (1995). These authors attempted demonstrate that the HBM variables would relate differently to different types of PHBs. PHBs were conceptualized as coming in two different types: disease detection (e.g., medical checkups) and health promotion (e.g., exercise, flossing, eating healthy). Participants were given a list of health behaviors and asked to write down what came to mind when thinking about each one. The results indicated that thinking about detection behaviors elicited more statements about severity and susceptibility, whereas promotion behaviors elicited more statements about benefits and barriers. Overall, it would appear that the nature of the health behavior in question might effect the importance of individual HBM variables.

Clearly, further experimental research is needed to determine the validity of the HBM. The model itself is over three decades old and is perhaps the most extensively used for the explanation of individual differences in health behaviors (particularly PHBs). Despite the vast body of literature on the HBM, very few scientifically sound studies can be found in the literature. Studies must be done that tests the predictive validity of the model as a whole and that test the predictive power of each individual variable. In addition, the degree to which variables might interact through mediation, moderation, or in a path-wise manner.

The HBM holds that an individual's psychological readiness to take action and the utility of that action affect the decision to engage in a health behavior. These factors play out via perceptions of (1) susceptibility to illness, (2) illness severity, (3) benefits of the behavior, and (4) barriers to engaging in the behavior. Cues to action and personal motivation are also important. The HBM can be invoked in the study of any type of health behavior, but was particularly formulated for the study of PHBs. Although the HBM literature is extensive, relatively few scientifically valid studies of the model have been conducted. The need for solid research in this area, particularly basic experimental studies that demonstrate the validity of the model is great. Such studies are a must if the model is to be used in the generation of intervention methods for increasing appropriate health behaviors among patients.

Summary. The health of American Indians is poorer than that of any other group, despite access to free healthcare. Many of the diseases they face have important behavioral components to their prevention and treatment and their prevalence may be due to poor health behaviors on the part of American Indian patients. It has been suggested in the literature that American Indians may have difficulty understanding the meaning or utility medical advice offered up by physicians. This phenomena may be the result of differences in basic health beliefs between the Western medical model and traditional native views on health and wellness.

The Health Belief Model (HBM) has been used to study health behavior in a wide variety of contexts. It assumes that an individual's perceptions about illnesses and related health behaviors influence whether or not he or she will engage in a given health related activity. If American Indians enter the medical arena with different basic beliefs about

health, their perceptions (via the HBM) may be different from those of their physicians. If a American Indian patient does not perceive an illness with as much severity or a health behavior with as much utility as does his or her physician, the patient may not understand the importance of recommended health behaviors.

The Present Study

Given the hypothesis that American Indians may perceive their physical health and health behaviors differently than members of the majority Caucasian society, it is reasonable to assume that such differences are amenable to empirical study. A test incorporating the HBM may reveal differences between the two populations. The HBM has been shown to be valid for predominantly Caucasian samples (e.g., Millar & Millar, 1995; Ronis, 1992), but it has yet to be explicitly tested with American Indian populations. If the model holds true for American Indians, it could provide a framework for understanding how this at-risk group of people makes decisions involving health behaviors. If the model does not hold for American Indians, this would indicate that we need to rethink the way in which healthcare services are provided to such populations.

The present study examined the utility of the HBM with American Indian populations. Specifically, the study made use of experimental methods to test the HBM's ability to predict the endorsement of preventative health behavior (PHB) in American Indian and Caucasian samples. The study also examined if identification with American Indian culture has any mediation on the relationship between HBM variables and PHB.

Method

Participants

Participants were undergraduates recruited from the campus of Oklahoma State University in Stillwater, OK. Only students identifying their ethnicity as American Indian or Caucasian were used. They were recruited from classes, student organizations and across campus. Participants were offered extra credit for the class they were recruited from or a chance to have their name entered into a drawing for cash prizes as incentive to participate. In all, 68 American Indian and 134 Caucasian participants were recruited. The American Indian sample consisted of fifteen (15) males and 53 females, and had a mean age of 20.38 years. The Caucasian sample consisted of 46 males and 88 females, and had a mean age of 19.96 years. Half of each sample was pseudo-randomly assigned to one of two experimental conditions (see below).

Measures Used

Demographics Questionnaire. The Demographics Questionnaire for this study was a one-page inventory used during initial recruitment for participation in the study. Potential participants were asked to fill out questionnaire and told that they would be contacted if they met inclusion criteria for the study. The experimenter would not comment on what the inclusion criteria were during recruitment. If asked, the experimenter explained that the criteria were being kept secret to preserve research validity. The questionnaire consisted of two sections separated by a perforated line. The upper portion asked participants to provide their age, sex, ethnic background, socioeconomic status, academic major, and year in college. No specifically identifying information (i.e., name, student ID number, etc.) was asked for. The lower portion asked

for participants' name and telephone number and explained that they will be contacted later if they meet inclusion criteria for the study. Only those who specified Caucasian or American Indian ethnic backgrounds were contacted. After data collection, the lower portion of the questionnaire was removed and destroyed to preserve participant anonymity.

Cultural Identification Scale. The Cultural Identification Scale (CIS) is a 7-item questionnaire designed to assess the degree to which an individual identifies with the traditions of a given culture. The CIS was developed by Oetting and Beauvais (1991) based on their orthogonal cultural identification theory. This theory holds that an individual's identification with one culture is independent of his or her identification with another culture. Many people who identify themselves as American Indian may be highly acculturated to Western society and may or may not also hold to traditional tribal values and beliefs independently of acculturation. Internal consistency reliability of the CIS has been reported in the upper .80s (Oetting and Beauvais, 1991).

Participants are asked to rate a series of statements regarding the extent to which they identify with the values and beliefs of several ethnic groups and rate themselves on a 4 point Likert scale (1 = not at all, 2 = a little, 3 = mostly, 4 = all or nearly all). The CIS allows for the assessment of values and belief factors related each culture separately, and was included to test for mediation effects for cultural identity on HBM perceptions.

Health Awareness Survey. The Health Awareness Survey (HAS) is a two-part questionnaire for measuring the four HBM variables of perceived susceptibility, severity, benefit, and barriers. It is based on the methodology of Brouwers and Sorrentino (1993)

and Ronis (1992) and was developed specifically for this study. The first page contains the following statement:

“Given the extensive media coverage given to HIV/AIDS and cancer, the researchers in this study are interested in how informed college students are about illnesses that are given little or no attention in the media.”

Following this statement, the participant was given instructions for completing both parts of the survey.

Part I consists of a list of ten medical illnesses with blanks after each item on the list. Participants were instructed to fill in the number of people he or she knows who suffer from each illness. They were also informed that in Part II of the survey they would be provided with specific information on two of the illnesses and asked to respond to the information given. Unbeknownst to the participants, three of the illnesses on the list were fictional. The fictional illnesses were embedded in a list of actual ones in order to give them credibility. It was assumed that because participants had been informed that the survey is about diseases that are given little or no media attention, they would believe these were simply rare diseases of which they had not heard.

In Part II, participants received a set of fictional symptoms assigned to one of the fictional illnesses. They were instructed to read four paragraphs describing the illness. These paragraphs were written in one of two forms (see below). The first of these paragraphs describes the typical age of onset, risk factors, and prevalence of the illness. Borrowing the methods of Brouwers and Sorrentino (1993; see below), one version of the paragraph is written so as to suggest that typical college students (people similar to the participant) are highly susceptible to the illness. Specifically, they were told that the age

of onset is typically between seventeen and twenty-five years and that regular alcohol consumption and regular exposure to cigarette smoke are known to increase the likelihood of the disease. The other version contains a similar format that suggests only senior citizens are susceptible to the illness.

Below the paragraph is the following statement followed by a 10 point Likert scale (1 = not at all...10 = very): "On the scale below, please circle the number corresponding to how susceptible you perceive yourself to be to the illness described above." This item is designed to measure the participant's perceived susceptibility to the illness. The second paragraph is of similar format and was designed to measure the participant's perceived severity to the illness. The third and fourth paragraphs describe a PHB that eliminates the risk of contracting the illness and the costs involved. These were designed to measure the participant's perceived benefit of and perceived barriers to engaging in the PHB. Like the first paragraph, the second, third and fourth have two alternate versions that imply either high or low severity, benefit, barriers. Finally, a fifth paragraph asks the participant to consider all the information that has been given on the illness and the related PHB and to give an overall rating of how likely it is that he or she will engage in the PHB.

Imaginative diseases have been used in previous health psychology research. Ronis (1992) asked participants to assume the existence of a fictional disease and beneficial dietary supplement in a study of subjective expected utility and the HBM. The author was able to experimentally manipulate the information the participants received about the illness and therefore manipulate their perceived HBM variables. Another use of a fictional disease that involved deception was employed by Brouwers and Sorrentino

(1993). In a study on the effects of individual differences on uncertainty and protection motivation, the authors led participants to believe in a fictional disease to see how many would request more information about the disease. As these authors point out, the use of a fictional disease and related PHBs has two benefits: (1) the participants have no previous exposure or preconceived ideas about the disease, and (2) it eliminates ethical concerns regarding the supply of false information about a real disease. The methodology employed in this HAS combines that of the two studies cited above. Participants are led to believe in a fictional disease and then given information regarding the disease and an available PHB. The experimenters control what information any given participant had about the illness and PHB and can thereby manipulate the participant's perceived HBM variables.

To further the deception, participants were asked to provide similar responses along the HBM variables about to two real illnesses. One of them was a second disease from the list in Part I, taken from the seven items that are actual illnesses – mononucleosis. The other illness they are asked to respond to is HIV/AIDS.

Procedure

Participants were brought into the Behavioral Health Laboratory at Oklahoma State University. Once informed consent was obtained, participants were given the HAS packet containing the CIS and the HAS itself. The experimenter read aloud the general instructions and asked if participants had any questions. Once any questions had been answered, the participants were instructed to begin filling out the HAS.

A group of American Indian participants and a group of Caucasians were placed into one of two experimental conditions. The first condition was referred to as being in

the “high” condition. Participants in this condition received information in Part II of the HAS that conveyed high susceptibility, severity, and benefit with low costs. The second condition was referred to as being in the “low” condition. Participants in this condition were given information that conveyed low susceptibility, severity, and benefit with high costs. According to the HBM, participants in the first condition should have endorsed the PHB to a greater degree than those in the second.

Once the HAS was completed, the experimenter collected the form from the participants and debriefed them about the deception involved in the experiment and the hypothesis under study. Participants were thanked again for their participation and given information on how to contact the primary investigators if they desired to know the results of the study. Participants were then allowed to leave.

Results

Manipulation Checks

Analyses were performed to examine the validity of the experimental manipulation. First, a series of independent samples t-tests calculated on the entire sample revealed mean differences across all four HBM dimensions as a function of “high/low” condition based on the scenarios presented for the fictional illness (Dean’s Disorder). Participants in the “high” HBM condition endorsed greater perceived susceptibility ($t = 6.45$), greater perceived severity ($t = 5.35$), and greater perceived benefits ($t = 7.244$), and lower perceived barriers ($t = -7.617$) than those in the “low” HBM condition (df for all = 200; all p 's < 0.001). Next, zero-order correlations indicated that higher perceived susceptibility, severity, and benefits, as well as lower perceived barriers were all significantly associated with greater endorsement of PHBs (see Table 1).

Similar analyses were conducted on participants' responses to the AIDS and mononucleosis portions of the HAS. First, because no high-low manipulation of HBM dimensions was performed, means for each HBM dimension were calculated within the two illnesses and were categorized as "high" or "low" based on a median split of the 10-point Likert scale used to measure each dimension (e.g., high = 6-10, low = 1-5). As shown in Table 2, participants perceived AIDS as being associated with high susceptibility, severity, and benefits and low barriers. Conversely, participants perceived and mononucleosis as being associated with low susceptibility, severity, and benefits and high barriers.

Next, correlations were calculated to determine if the HBM dimensions predicted PHBs for AIDS and mononucleosis. As Table 3 indicates, the four HBM dimensions were significantly associated with PHB endorsement as predicted, with one exception. Contrary to prediction, perceived severity did not significantly predict PHBs for AIDS. This observation will be revisited in the discussion section. In sum, these data indicate that the experimental manipulation was generally successful on all fronts.

Preliminary Analyses

Preliminary analyses were conducted to ensure equivalency on basic demographic variables across both condition (high vs. low) and race (American Indian vs. Caucasian). Independent samples t-tests revealed no significant age differences by race, $t(200) = 0.50$, $p = 0.608$, or by condition, $t(200) = -0.44$, $p = 0.660$. Given the overrepresentation of females in both samples, analyses were also performed to rule out potential effects of gender differences. Chi-square analyses revealed no significant differences for gender across conditions, $\chi^2(1) = 1.58$, $p = 0.208$, or racial groups, $\chi^2(1) = 3.22$, $p = 0.073$.

Additionally, independent samples t-tests revealed no difference between males and females on the mean PHB outcome variables for Dean's Disorder, $t(200) = -1.79$, $p = 0.075$; AIDS, $t(200) = -1.75$, $p = 0.084$; or mononucleosis $t(200) = -0.46$, $p = 0.643$. In sum, these data indicate equivalency of age and gender across both races and conditions.

Primary Analyses

A 2x2 (race x condition) analysis of variance (ANOVA) was conducted for the fictional illness to determine if the level of PHBs endorsed differed as a function of race or condition. In addition, an effect size was calculated using the eta-squared statistic. Because participants in both conditions received the same information on AIDS and mononucleosis, independent samples t-tests race were performed for these two illnesses. As indicated by Table 4, a main effect was observed for condition by which participants in the high condition endorsed significantly more Dean's Disorder PHBs than those in the low condition. However, no significant main effect was observed for race, nor was any race x condition interaction. Similarly, t-tests revealed no significant effect for race with either AIDS or mononucleosis. In sum, these data indicate that the HBM functioned similarly in both American Indian and Caucasian participants.

In order for American Indian cultural identification to function as a mediator between HBM variables and PHB, it must first be established that such identification is significantly related to both predictor (HBM) and outcome (PHB) variables. To establish grounds for a test of mediation, zero-order correlations were performed to determine if American Indian identification was significantly correlated with any of the three PHBs. This analysis was first conducted for all subjects, Caucasian and American Indian, combined. Results indicated that the correlations were not statistically significant

between American Indian identification and the PHB for the fictional illness ($r = 0.095$, $p = 0.177$), AIDS ($r = 0.079$, $p = 0.266$), or mononucleosis ($r = -0.005$, $p = 0.948$). The analysis was then repeated on the American Indian sample only. Results were equivocal, indicating no significant correlations for the fictional illness ($r = 0.194$, $p = 0.114$), AIDS ($r = -0.016$, $p = 0.896$), or mononucleosis ($r = 0.019$, $p = 0.877$). Because these data indicated no significant relationships between American Indian identification and PHB, no further tests related to mediation were conducted. As a result, it was concluded that no mediation relationship existed.

Exploratory Analyses

Because no race effects were observed, it was hypothesized that the American Indian sample might have been highly acculturated and therefore responding to HAS items from a cultural perspective typical of Caucasian Americans rather than from a traditional American Indian perspective. To test this hypothesis, independent samples *t*-tests were performed to determine if the American Indian and Caucasian samples were in fact different on CIS-measured American Indian and Caucasian identity. As indicated in Table 5, the American Indian sample showed significantly greater American Indian cultural identification and significantly less Caucasian identification than the Caucasian sample. These data suggest that the two samples were not equivalent in terms of either type of cultural identification. However, the American Indian sample endorsed significantly higher levels of Caucasian identity than American Indian identity. Although greater Caucasian identification does not necessarily detract from American Indian identity (Oetting & Beauvais, 1991), these findings do indicate that the American Indian sample was highly acculturated into Caucasian culture.

Finally, it is possible that the sheer size of the Caucasian sample as compared to the American Indian sample may have been sufficiently large enough to produce a group (high vs. low) main effect on Dean's Disorder PHBs even if no such effect was present in the American Indian sample alone. To address this, an independent samples t-test was conducted on the American Indian sample alone to test for significant differences between the high and low conditions. Results were consistent with the primary findings, indicating a significant group effect for Dean's Disorder, $t(66) = 2.222, p. = 0.030$.

Discussion

Test of the Health Belief Model

In general, results of this study indicate a valid test of the Health Belief Model (HBM). Specifically, for all three diseases (Dean's Disorder, AIDS, and mononucleosis), the four HBM dimensions of perceived severity, perceived susceptibility, perceived benefits, and perceived barriers were predictive of PHBs (preventative health behaviors) in accordance with the model. The data collected regarding mononucleosis and AIDS, intended as a general test of the HBM, were consistent with the overall body of HBM research (e.g., Harrison, Mullen, & Green, 1992; Janz & Becker, 1984). Participants rated the likelihood of PHBs as low for mononucleosis, which was presented as an illness with low severity, susceptibility, and benefits and high barriers. Likelihood of engaging in PHBs was rated as high for AIDS, which was presented with high severity, susceptibility, and benefits and low barriers.

Further, for both of these real illnesses, the four HBM dimensions were significantly correlated with PHBs, with one notable exception: perceived severity was not predictive of AIDS-related PHBs. However, the perceived severity dimension is often

not strongly associated with PHBs because healthy individuals have difficulty conceptualizing the severity of an illness they have not experienced (Hayman & Baker, 1992; Janz & Becker, 1984). Interestingly, severity was predictive of PHBs for mononucleosis. Although no data were collected on illness history, several participants noted during the debriefing that they had previously suffered from mononucleosis, which may have influenced the perceived severity-PHB relationship.

Likewise, all four HBM dimensions were significantly correlated with PHBs regarding the fictional illness (Dean's Disorder). Further, participants responded to the fictional illness as predicted by the HBM, indicating that the experimental manipulation was effective. This is consistent with the small number of other studies that employ experimental tests of the HBM (Brouwers and Sorrentino, 1993; Millar & Millar, 1995; Ronis, 1992). For the fictional illness, individuals endorsed significantly more PHBs when presented with an illness characterized by high susceptibility, severity, and benefits and low barriers (i.e., the "high" condition) than for an illness characterized by low susceptibility, severity, and benefits and high barriers (i.e., the "low" condition).

Examination of Cultural Factors

In addition to providing further validation of the HBM in general, the present study examined the application of this model to a previously unexplored population (American Indians), particularly with respect to the role of cultural factors in health behaviors. This is important because, although individual variability exists, traditional American Indian conceptualizations of susceptibility to illness are generally inconsistent with those of Western medicine. For example, the tendency among American Indians to focus on the present while discounting the future (Clark & Kelly, 1992) and to view

wellness as personal harmony with the environment and the community in both physical and spiritual domains (Clark & Kelly, 1992; Locust 1985) are often cited as running contrary to mainstream ideas on health, which focus on prevention of future health problems, and de-emphasize non-physical causes of illness.

Based on this, one might expect American Indians to be more responsive to a model that emphasizes the importance of PHBs to their present state of health, relates PHBs to more global states of harmony with their environment, and explains the nature of illnesses in terms of spiritual as well as physical causes and remedies. In terms of the specific HBM dimensions, describing an illness in terms of how personal disharmony leads to susceptibility, the severity of both physical and spiritual symptoms, the present-time benefits of PHBs to both the individual and his or her community, and barriers in terms of cost to physical, spiritual, and community resources would seem to be indicated for American Indians. Consequently, one would expect American Indian participants' perceptions of severity, susceptibility, benefits, and barriers, as well as their endorsement of PHBs, to be independent of the type of information presented to them in this study, which was more consistent with Western views of health. However, this was not the case. Indeed, findings indicated that American Indian participants responded in a manner similar to their Caucasian counterparts to the set of risk factors typically associated with the HBM.

One possible explanation for the similar findings between American Indian and Caucasian participants may be found in the similarities of cultural identification observed across the two groups. An examination of the cultural identification data revealed that the American Indian sample was highly acculturated toward the mainstream culture,

which may have resulted in illness conceptualizations similar to Caucasian participants. As a function of this acculturation, it is possible that the American Indian participants have been raised in or otherwise exposed to an environment that emphasizes the tenets of Western medicine, resulting in an understanding and appreciation of the type of risk factors and PHBs presented in this study. This is consistent with the major tenets of the orthogonal theory of cultural identity put forth by Oetting and Beauvais (1991). These authors state that when minority group individuals (e.g., American Indians) identify more with the majority culture (e.g., Caucasian) than their minority culture, they tend to behave according to the beliefs, customs, and values of this prevailing view. Thus, findings of the present study limit conclusions about the HBM as a valid predictor of PHBs to those American Indians who are more highly acculturated into the mainstream Caucasian culture. Caution should be taken against generalizing these findings to American Indians who endorse higher levels of identification with their traditional American Indian culture.

Limitations and Future Directions

Although the findings of this study suggest that the HBM shows promise with American Indian populations, a more thorough examination of this relationship under varying levels of cultural identification seem warranted. Perhaps the most notable weakness of the present study was the absence of more traditional American Indian participants in the sample, which may have resulted in functionally indistinguishable groups of participants. In essence, despite that fact that the study included racially dissimilar groups, because the American Indian participants were highly acculturated, this may have rendered little variability across the HBM dimensions assessed in this study. Another related limitation of the study was the exclusive reliance on a college

sample. Given that American Indians are generally underrepresented in higher education and have extremely high attrition rates (Sanders, 1987; Young, 1994), it is possible that a selection bias was introduced into the sample, resulting in an unusually homogeneous group that is not representative of the majority of American Indians. A third limitation is that the American Indian sample included only a moderate number of participants. It should be noted, however, that relatively small sample sizes are to be expected when conducting research with American Indian populations (McDonald, 2000). Furthermore, the consistency in results across both the American Indian and Caucasian samples suggest that the methodology was valid and, to some extent, attenuate the concern over sample size. Finally, it must be acknowledged that the present study did not assess actual health behaviors; rather, it assessed self-reported attitudes and perceptions regarding health behaviors. As with all research based on self-report measures, these data are subject to the influence of social desirability (Kazdin, 1998), by which participants may have endorsed items in a way that they felt was socially appropriate, but may not reflect their actual behaviors outside the laboratory setting. Without such behavioral data, external validity of the study is limited.

Despite these limitations, the present study represents an important first step in the search for applicable models of healthcare for American Indians. Future directions should include samples of American Indians who possess greater degrees of American Indian identification (e.g., tribal elders, reservation populations). It may be that the type of HBM information presented to the participants in this study may have less relevance to the illness experience in more traditional groups of American Indians. Additionally, the use of culturally relevant versions of the HBM dimensions may point to ways of

conceptualizing illness that are applicable to such groups. The study of both acculturated and more traditional American Indians is needed based on the fact that they often represent distinct subgroups within the larger population and great care must be taken to avoid generalizing findings from one group to the other (McDonald, 2000). For example, whereas the HBM appears to be applicable for acculturated American Indians, other cognitive appraisal models based on well-established psychological constructs (i.e., attributional style) have been shown to operate quite differently in similarly acculturated groups of American Indians and, in some cases, not to apply at all, regardless of acculturation (e.g., Boyd, 2000; Duda & Allison, 1988; Robertson, 1998). Thus, careful consideration must be given to the influence of cultural identification when conducting research with American Indian populations. Future research in this area should also include measures of actual health history or concomitant rates of PHBs among participants as a supplement to self-report measures.

Summary

The purpose of the present study was to examine the potential utility of the Health Belief Model (HBM) with an American Indian population. Results replicated previous HBM findings in the literature and indicated that the model functioned similarly for Caucasian and American Indian participants in the sample. The four HBM dimensions – perceived susceptibility of illness, perceived severity of illness, perceived benefits of preventative health behaviors, and perceived barriers to preventative health behaviors – were generally predictive of preventative health behavior endorsement among samples of both Caucasian and American Indian college students. Notably, level of acculturation

appeared to play a significant role in the results, limiting the generalizability of the findings to more traditional American Indian populations.

Although the present results are tempered by the absence of more traditional American Indians in the study, they represent an important first step in understanding predictors of health behaviors in American Indian populations and suggest that the HBM is applicable to acculturated American Indian groups. In light of aggressive efforts to recruit and retain greater numbers of American Indian students in higher education (e.g., House, 1997; Levin & Levin, 1993), this is a population that is likely to experience substantial growth over the next decade. Increased knowledge about the unique needs of this population, including those related to health and healthcare utilization, will serve a valuable function.

The current research also emphasizes the need for more empirical research examining the relevance of illness models to individuals with varying degrees of cultural identification. Further investigation into the HBM's utility may result in the development of more culturally relevant dimensions and, ultimately, more effective interventions targeting health problems prevalent among American Indian populations. Given the overwhelming health crisis faced by American Indians today (Goldberg et al., 1991; Young, 1994), further research leading to the development of effective interventions is of critical importance.

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APPENDIX A:

TABLES

Table 1. Correlation Matrix for Dean's Disorder

	Susceptibility	Severity	Benefits	Barriers	PHB
Susceptibility	-	0.315*	0.242*	-0.198*	0.192*
Severity	-	-	0.427*	-0.251*	0.233*
Benefits	-	-	-	-0.356*	0.332*
Barriers	-	-	-	-	-0.288*
PHB	-	-	-	-	-

* p. < 0.01

Table 2. Means for AIDS and Mononucleosis

HBM variable Category	AIDS	Category	Mononucleosis	
Susceptibility	6.50	High	5.57	Low
Severity	9.42	High	5.42	Low
Benefits	9.69	High	4.75	Low
Barriers	1.49	Low	6.84	High
PHB	9.45	High	4.03	Low

Table 3. Correlation Matrix for AIDS and Mononucleosis**

	Susceptibility	Severity	Benefits	Barriers	PHB
Susceptibility	-	0.183*	0.119	-0.110	0.299*
Severity	0.284*	-	0.142*	-0.158*	0.075
Benefits	0.230*	0.273*	-	-0.137	0.298*
Barriers	-0.004	0.006	-0.465*	-	-0.188*
PHB	0.169*	0.224*	0.633*	-0.509*	-

* p. < 0.01

** Correlations above the diagonal represent AIDS, those below represent mononucleosis.

Table 4. Primary Analyses

ANOVA (Dean's Disorder)

Source	SS	df	MS	F	p.	effect size*
Race	6.087	1	6.087	0.734	0.393	0.137
Condition	4.204	1	4.204	5.133	0.025	0.614
Race x Condition	17.253	1	17.253	2.080	0.151	0.300

* Eta-Squared

Independent samples t-tests

Illness	t	df	p.	mean diff.	std. error diff.
AIDS	0.995	200	0.321	0.2520	0.2534
Mononucleosis	-0.463	200	0.644	-0.2074	0.4483

Table 5. Comparisons of Cultural Identification between Races

Cultural Identity	Am. Indian	Caucasian	t
Am. Indian ID	8.5995	1.7463	12.738*
Caucasian ID	16.3529	19.3881	-5.350 *

* p. < 0.001

APPENDIX B:
DEMOGRAPHICS QUESTIONNAIRE
AND HEALTH AWARENESS SURVEY

The Health Behavior Research Lab in the OSU Psychology Department is conducting a study on student perceptions of health and wellness. We are specifically interested in students who fit certain demographics. For purposes of research validity, we cannot say explicitly what these criteria are.

Those who participate will be given the choice of extra credit for courses or having their name entered in a drawing for cash prizes. Students whose instructors do not allow extra credit will automatically be placed in the drawing. If you are interested in this study, please fill out the form below and return it to our laboratory in 230 North Murray Hall or give it to a lab member.

Demographics Questionnaire

Please provide us with the following information...

Age _____ Sex _____

Ethnic background (circle one):

Caucasian Black HispanicAsian Other
American Indian/Alaskan Native Native Hawaiian/Pacific Islander

What is your family's annual income? \$ _____

What is your major? _____

What year are you in school (circle one)?

Freshman Sophomore Junior Senior Other

Name _____

Telephone Number _____

If you don't have an answering machine, what is the best time to call? _____

Thanks for filling out this form; someone from our laboratory will contact you if you meet our inclusion criteria.

Health Awareness Survey

Given the extensive media coverage given to HIV/AIDS and cancer, the researchers in this study are interested in how informed college students are about illnesses that are given little or no attention in the media. In Part I of the survey, you will be asked to provide information about the number of people you know that suffer from certain illnesses. In Part II of the survey you will be given information about a specific illnesses and asked to respond to that information. In the interest of conserving time and paper goods, you will be asked about only three illnesses in Part II.

Part I

In the blanks provided, please list the number of people you know that suffer from or have suffered from the corresponding illness. If you do not know anyone with a given illness, please leave the blank empty. In Part II, you will be asked to respond to information about two of the illnesses listed below.

1. Alzheimer's Disease _____
2. Asthma _____
3. Cerebral Palsy _____
4. Dean's Disorder _____
5. Aten's Disorder _____
6. Epilepsy _____
7. Hefley's Syndrome _____
8. Lou Gherig's Disease _____
9. Mononucleosis _____
10. Rheumatoid Arthritis _____

Part II

In this part of the survey, you will be provided with information regarding two of the diseases from the list in Part I, as well as AIDS for comparative purposes. In the interest of conserving time and paper goods, you will be asked about only three illnesses. Each Health Awareness Survey packet has been randomly assigned two illnesses for Part II. Please read the paragraphs on the following pages carefully and respond as honestly as you can.

The Impact of Cultural Identification

(THIS VERSION USED IN THE HIGH CONDITION)

Dean's Disorder is disease of the immune system that afflicts a considerable proportion of the U.S. population. It afflicts both men and women equally. It is a chronic condition, meaning that once developed, it is irreversible. The disease usually has onset during or just after the individual suffers from a cold or flu virus, when the immune system is weakened. The age of onset is typically between seventeen and twenty-five years. Regular alcohol consumption (two or three drinks a week or more) and/or regular exposure to cigarette smoke, either firsthand or secondhand, are known to increase the likelihood of the disease.

On the scale below, please circle the number corresponding to how susceptible you perceive yourself to be to the illness described above:

1-----2-----3-----4-----5-----6-----7-----8-----9-----10

Not At All
Susceptible

Very
Susceptible

The Impact of Cultural Identification

(THIS VERSION USED IN THE HIGH CONDITION)

The major symptoms of Dean's Disorder result from impairment of the immune system. Cold and flu infections are difficult to fight off, and injuries heal very slowly leading to prolonged periods of bone, joint, and muscle pain. Chronic fatigue is also common. Associated features of the illness include headaches, nausea, and frequent nosebleeds.

On the scale below, please circle the number corresponding to how severe you perceive that the illness described above would be if you contracted it:

1-----2-----3-----4-----5-----6-----7-----8-----9-----10

Not At All
Severe

Very
Severe

The Impact of Cultural Identification

(THIS VERSION USED IN THE HIGH CONDITION)

The causes of Dean's Disorder are fairly well understood. Research has pointed to deficiencies in a certain blood protein that predispose an individual for the disorder. This deficiency only comes into play when the immune system is overtaxed as mentioned on the previous page. An individual's chances of developing Dean's Disorder can be determined by a type of blood testing that has been developed over the last ten years. Fortunately for individuals susceptible to the illness, a synthetic version of the deficient protein is available in tablet form. Supplementing one's diet with these tablets almost eliminate the chances of developing the illness.

On the scale below, please circle the number corresponding to how beneficial you perceive it would be to take synthetic proteins if a blood test revealed you were susceptible to the illness:

1-----2-----3-----4-----5-----6-----7-----8-----9-----10

Not At All
Beneficial

Very
Beneficial

The Impact of Cultural Identification

(THIS VERSION USED IN THE HIGH CONDITION)

On the previous page, two different measures were described for preventing the development of Dean's Disorder. First, an individual must have a blood test done to determine if he or she is at risk for the illness. The blood test typically costs around \$50 because the test procedure is inexpensive and can be conducted at most hospitals and medical centers. Most insurance companies cover the costs of the test. Second, any individual who is predisposed to the illness can prevent it by taking synthetic protein tablets. Most insurance plans will pay for the tablets, but for those who do not, tablets usually cost between \$10 and \$15 and per month.

On the scale below, please circle the number corresponding to how much the cost of the blood test and protein tablets would interfere with your decision to take preventative measures regarding the illness:

1-----2-----3-----4-----5-----6-----7-----8-----9-----10

Not At All
Interfering

Very
Interfering

The Impact of Cultural Identification

(THIS VERSION USED IN THE LOW CONDITION)

Dean's Disorder is disease of the immune system that afflicts a considerable proportion of the U.S. population. It afflicts both men and women equally. It is a chronic condition, meaning that once developed, it is irreversible. The disease usually has onset during or just after the individual suffers from a cold or flu virus, when the immune system is weakened. The age of onset is typically between sixty and sixty-five years. Regular consumption of certain geriatric medications are known to increase the likelihood of the disease.

On the scale below, please circle the number corresponding to how susceptible you perceive yourself to be to the illness described above:

1-----2-----3-----4-----5-----6-----7-----8-----9-----10

Not At All
Susceptible

Very
Susceptible

The Impact of Cultural Identification

(THIS VERSION USED IN THE LOW CONDITION)

The major symptoms of Dean's Disorder result from impairment of the immune system. Cold and flu infections are difficult to fight off, but this problem can usually be eliminated with over the counter drugs. Associated features of the illness include mild headaches and heartburn that can also be treated with over the counter medications (aspirin, antacids, etc.).

On the scale below, please circle the number corresponding to how severe you perceive that the illness described above would be if you contracted it:

1-----2-----3-----4-----5-----6-----7-----8-----9-----10

Not At All
Severe

Very
Severe

The Impact of Cultural Identification

(THIS VERSION USED IN THE LOW CONDITION)

The causes of Dean's Disorder are only vaguely understood. Research findings are inconclusive, but have generally pointed to deficiencies in a certain blood protein that predispose an individual for the disorder. This deficiency only comes into play when the immune system is overtaxed as mentioned on the previous page. An individual's chances of developing Dean's Disorder can be sometimes be determined by a type of blood testing that has been developed over the last ten years. However, the test is only accurate about 13% of the time. For individuals susceptible to the illness, a synthetic version of the deficient protein is available in tablet form. Supplementing one's diet with these tablets can reduce the chances of developing the illness by about 8%.

On the scale below, please circle the number corresponding to how beneficial you perceive it would be to take synthetic proteins if a blood test revealed you were susceptible to the illness:

1-----2-----3-----4-----5-----6-----7-----8-----9-----10

Not At All
Beneficial

Very
Beneficial

The Impact of Cultural Identification

(THIS VERSION USED IN THE LOW CONDITION)

On the previous page, two different measures were described for preventing the development of Dean's Syndrome. First, an individual must have a blood test done to determine if he or she is at risk for the illness. The blood test typically costs around \$350 because the test procedure is expensive and blood samples must be sent to one of a few health sciences center across the country that have the necessary equipment. Most insurance companies do not cover the costs of the test. Second, any individual who is predisposed to the illness can prevent it by taking synthetic protein tablets. These tablets usually cost between \$65 and \$75 per month.

On the scale below, please circle the number corresponding to how much the cost of the blood test and protein tablets would interfere with your decision to take preventative measures regarding the illness:

1-----2-----3-----4-----5-----6-----7-----8-----9-----10

Not At All
Interfering

Very
Interfering

Please consider all the information you have been given on Dean's Disorder and the preventative measures described in the previous paragraphs – i.e., the blood test and the synthetic protein tablets.

Given all of the information presented in this survey, please circle the number on the scale below corresponding to how likely you are to take the preventative measures described here:

1-----2-----3-----4-----5-----6-----7-----8-----9-----10
Not at all Very
Likely Likely

Acquired Immune Deficiency Syndrome (AIDS) is a disease that results from infection by the HIV virus. In the past, AIDS was viewed as a disease effecting primarily homosexual and bisexual men or intravenous drug abusers. Current epidemiological research indicates that the chances of being exposed to the HIV virus through sexual contact is significant for all people, regardless of gender, sexual orientation, or race. Most people who contract HIV develop AIDS. There is currently no known cure.

On the scale below, please circle the number corresponding to how susceptible you would perceive yourself to be to the illness described above if you were to engage in unprotected sexual intercourse:

1-----2-----3-----4-----5-----6-----7-----8-----9-----10

Not At All
Susceptible

Very
Susceptible

AIDS is a disease which effects the body's immune system, rendering it unable to fight off other infections, repair tissue damage, and destroy cancer cells. People do not die of AIDS directly. Rather, they die from other diseases that there body can no longer resist. Some causes of death among AIDS sufferers include pneumonia, anemia, and cancer. People with advanced AIDS are often fatigued, nauseated, or in pain because of complications related to the disease. As stated before, there is no cure for AIDS. All persons who contract the disease eventually die.

On the scale below, please circle the number corresponding to how severe you perceive that the illness described above would be if you contracted it:

1-----2-----3-----4-----5-----6-----7-----8-----9-----10

Not At All
Severe

Very
Severe

The cause of AIDS (i.e., HIV infection) is fairly well understood. The HIV virus attacks the white blood cells of the immune system, rendering it ineffective against other types of illness. Although AIDS cannot be cured, it can be prevented by following a few guidelines with regards to sexual behaviors. The most effective way to prevent AIDS is to remain celibate or to only have sex in the context of a monogamous relationship with someone who is not HIV positive. Another method is the use of a condom during intercourse to prevent direct genital contact.

On the scale below, please circle the number corresponding to how beneficial you perceive it would be to engage in one or more of the preventative measures described above:

1-----2-----3-----4-----5-----6-----7-----8-----9-----10

Not At All
Beneficial

Very
Beneficial

On the previous page, several methods for preventing AIDS were described. Celibacy and monogamy have no real financial costs for those who might choose these methods for AIDS prevention. For those who do not desire these alternatives, condoms are relatively cheap (\$.50-1.00 singly, cheaper still when purchased in bulk).

On the scale below, please circle the number corresponding to how much the cost of the preventative measure described above would interfere with your decision to use them:

1-----2-----3-----4-----5-----6-----7-----8-----9-----10

Not At All
Interfering

Very
Interfering

Please consider all the information you have been given on AIDS and the preventative measures described in the previous paragraphs.

Given all of the information presented in this survey, please circle the number on the scale below corresponding to how likely you are to take the preventative measures described here:

1-----2-----3-----4-----5-----6-----7-----8-----9-----10
Not at all Very
Likely Likely

Mononucleosis (commonly known as “mono”) is a viral infection that greatly impacts a persons daily functioning. It can affect both men and women. The illness is not chronic, and can be treated by medical care. The disease has a fairly low prevalence rate in the general population, and can usually only be contracted by exchanging bodily fluids (such as saliva) with an infected person, most often by open-mouth kissing or by sharing beverages and food. Since most people who are contagious know they have the infection, friends and relatives usually have ample warning to take the necessary precautions.

On the scale below, please circle the number corresponding to how susceptible you perceive yourself to be to the illness described above:

1-----2-----3-----4-----5-----6-----7-----8-----9-----10

Not At All
Susceptible

Very
Susceptible

The major symptom of Mononucleosis are chronic fatigue, including exhaustion and soreness. Most people with the illness are able to engage in regular activities (i.e., reading, homework, watching TV) so long as they do not over exert themselves. With proper amounts of rest and medication, the illness is easily managed and cured.

On the scale below, please circle the number corresponding to how severe you perceive that the illness described above would be if you contracted it:

1-----2-----3-----4-----5-----6-----7-----8-----9-----10

Not At All
Severe

Very
Severe

As stated before, Mononucleosis is caused by a viral infection. Most people who are contagious are aware of the fact and are able to keep from passing it on to others. The only conceivable preventative step would be to take preemptive vaccinations. However, given the low prevalence rate of Mononucleosis, it is unlikely that such steps would significantly decrease the base probability of contracting the illness anyway, so this is not a standard medical practice

On the scale below, please circle the number corresponding to how beneficial you perceive it would be to take vaccinations to prevent contracting the illness:

1-----2-----3-----4-----5-----6-----7-----8-----9-----10

Not At All
Beneficial

Very
Beneficial

Should a person choose to take vaccinations to prevent contracting Mononucleosis, the cost would fall entirely on them (as stated before, it is not a standard medical practice and would not be covered by most insurance plans). Vaccinations are very expensive and difficult, of not impossible, to get without a doctor's order. Additionally, taking any vaccination means that there is some risk of developing the illness as a result of the injection.

On the scale below, please circle the number corresponding to how much the costs (financial and otherwise) of vaccinations would interfere with your using them to prevent the illness:

1-----2-----3-----4-----5-----6-----7-----8-----9-----10

Not At All
Interfering

Very
Interfering

Please consider all the information you have been given on Mononucleosis and the preventative measures described in the previous paragraphs.

Given all of the information presented in this survey, please circle the number on the scale below corresponding to how likely you are to take the preventative measures described here:

1-----2-----3-----4-----5-----6-----7-----8-----9-----10
Not at all Very
Likely Likely

APPENDIX C:
INSTITUTIONAL REVIEW BOARD
APPROVAL

OKLAHOMA STATE UNIVERSITY
INSTITUTIONAL REVIEW BOARD

Date: September 29, 1999 IRB #: AS-00-088
Proposal Title: "THE IMPACT OF CULTURAL IDENTITY ON HEALTH BELIEFS IN
AMERICAN INDIAN AND CAUCASIAN COLLEGE STUDENTS"
Principal Investigator(s): John Chaney
Billy Joe Boyd, III
Reviewed and Processed as: Expedited
Approval Status Recommended by Reviewer(s): Approved

Signature:



Carol Olson, Director of University Research Compliance

September 29, 1999
Date

Approvals are valid for one calendar year, after which time a request for continuation must be submitted. Any modification to the research project approved by the IRB must be submitted for approval. Approved projects are subject to monitoring by the IRB. Expedited and exempt projects may be reviewed by the full Institutional Review Board.

VITA

Billy Joe Boyd, III

Candidate for the Degree of

Master of Science

Thesis: THE IMPACT OF CULTURAL IDENTIFICATION ON HEALTH BELIEFS
AMONG AMERICAN INDIAN AND CAUCASIAN COLLEGE STUDENTS

Major Field: Psychology

Biographical:

Education: Graduated Valedictorian from Gore High School, Gore, Oklahoma in May 1993; received Bachelor of Science degree with Honors in Psychology from Oklahoma State University, Stillwater, Oklahoma in May 1998; Completed the requirements for the Master of Science degree with a major in Psychology at Oklahoma State University in December 2000.

Experience: Grew up in Gore, Oklahoma; employed part time at a resort on Nearby Lake Tenkiller as a waiter, busboy, and cashier; while an undergraduate at Oklahoma State University, employed part-time as a cashier at a local convenience store and as an undergraduate research assistant in the Department of Psychology. Employed by the Department of Psychology as a graduate research assistant, teaching assistant, and course instructor, 1998 to present.

Professional Memberships: Oklahoma Psychological Association, Southwest Psychological Association, American Psychological Association, Society for the Psychological Study of Minority Issues (APA Div. 45), Society of Indian Psychologists, Association for the Advancement of Behavior Therapy.