FEATURE

THE INFLUENCE OF CULTURE AND ACCESS TO HEALTH CARE DELIVERY AS PREDICTORS OF HEALTH BEHAVIOURS AMONG MALAYSIANS OF DIFFERENT CULTURAL BACKGROUNDS

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Abstract. *Changing a person's health behavior is a daunting task. This cross-sectional study aimed at finding the influence of culture and delivery of health care as predictors of health behavior (such as diet, physical activity, sleeping and smoking) among Malaysians. A questionnaire survey was conducted among 459 respondents consisting of Chinese, Malays, and Indians. Data were analyzed using descriptive statistics such as mean and standard deviation as well as multiple regression. Results show that culture predicted diet (unstandardized coefficient of 0.39, a t-value of 8.81) and sleeping (unstandardized coefficient of 0.41, a t-value of 5.30). Accessibility to health care delivery had a negative influence on diet (unstandardized coefficient of -0.07, a t-value of -2.31) and sleeping (unstandardized coefficient of -0.10, a t-value of -0.08). However, access to health care had a positive influence on physical activity ($p < 0.05 < 0.01$). Findings suggest that health promotion is a complex undertaking, one that requires understanding of the culture of the population.*

Keywords: health behavior, primary health care, culture, health promotion, access to health care, Malaysia, survey

Introduction

Many health promoters find that changing a person's health behavior is a daunting task as it requires interplay of understanding the individuals (Huff & Kline, 2015). As the majority of the world's population are not dying from

infectious diseases anymore, there is a greater need for a heightened, culturally-relevant health promotion and health education activities. The onslaught of urbanization, globalization, and modernization, coupled with the population's differences in culture, belief system, as well as environmental factors, has led to the spread of abnormal health conditions. A person's ability to enjoy health or to develop disease is a result of three groups of risk factors: genetics, behavior, and environment (Trovato, 2012). Health behaviors play a pivotal role in influencing the future incidence of chronic diseases, which can impact the health status of an individual.

Bandura's social cognitive theory posits that life is heavily influenced by health habits and behaviors (Bandura & Simon, 1977). Many studies have shown that up to 80% of heart disease, stroke, and type II diabetes and over a third of cancers could be prevented by eliminating shared risk factors, mainly tobacco use, unhealthy diet, physical inactivity, and the harmful use of alcohol (Ezzati & Riboli, 2012; Golubic, 2013).

Thus, this study aimed to determine on what extent culture and access to health care influence achieving positive lifestyle behaviors such as having a heathy diet, engaging in regular exercise, not smoking and having quality sleep. In addition, it sought to investigate the prevailing culture, access to delivery of health care and lifestyle behavior of Malaysians, and finally, to compare the lifestyle behavior of Malays, Chinese, and Indians.

Review of Related Literature

The rapid change in modernization and urbanization is influencing the health behavior of most people, which in turn heightens the occurrence of chronic diseases. The National Health and Morbidity Survey (NHMS, 2015) revealed that among Malaysian adults (18 years old and above), 3.5 million (17.5%) are known to have diabetes, 6.1 million (30.3%) are suffering from Hypertension, and 22.8% are current smokers. Moreover, non-communicable diseases (NCDs) account for an estimated 73% of total deaths in Malaysia, with cardiovascular diseases that include heart attacks and strokes as the biggest contributor; overweight and obesity are at 30% and 3.6% respectively, with an increase by 0.6% and 2.6% as compared to 2011 (Ministry of Health, 2015a, 2015b).

In terms of health, culture plays a major role, and it may be right to say that in Asia, Malaysia has the most diverse culture. Malays, Chinese, Indians, and other ethnic groups have lived together in Malaysia for many generations, each with their own cultural uniqueness. They have influenced each other in creating a unique country that is Malaysia—a truly Asian country (Malaysia Tourism Board, 2011). Cultural differences have a significant impact on health. In the United States, cultural competency is becoming one of the most important health

initiatives by the government, encouraging healthcare providers to have ethno-cultural knowledge in dealing with clients in order to deliver better care (Purnell, 2013). Understanding the ethno-cultural background of Southeast Asians in the United States was found to be important in helping them quit smoking (Mukherjea & Modayil, 2013).

Studies on smoking have also shown that white women are more likely to smoke and to smoke more heavily than Black or Hispanic women, especially Mexican-American women (Patel, Phillips-Caesar, & Boutin-Foster, 2012). Authors also observed that the subject has a misconception on physical activity and dietary habits. Another study found that adult Asian Indians have poor health status especially on lack of physical activity and unhealthy dietary patters (Balasubramanyam, Rao, Misra, Sekhar, & Ballantyne, 2008); and in examining the relationships between culture and the health status of older Chinese in Canada, result showed that having a stronger level of identification with traditional Chinese culture was significant in predicting physical health status (Lai, Tsang, Chappell, Lai, & Chau, 2007). Similarly, a literature review showed that Chinese culture has a significant effect on the overall health status among Chinese migrants in Canada (Xiang, Chiu, & Ungvari, 2010).

There is no better way to gain understanding of a community than by looking at the lives of the people living within that particular community. By gaining understanding of the culture of the population and how these affect their lives, especially with regards to their health, one is able to determine the population's health behavior and health status; and with such knowledge, a better health program can be developed (EuroMed Info, 2008).

Malaysia is a multicultural society and a secular state with Islam as the official religion (Mohamad & Jaafar, 2011). It is a melting pot of different cultures with their specific customs and traditions. Yadav and Ghani (2001) observe that with differences in traditions, inequalities are common among different ethnic groups, including health disparity and because of this; newer programs and review of the older ones are being done in order to address the needs of the community in the 21st Century.

Culture affects the health status of a population. For example, in a study about the association of cultural tradition among African-Americans and their attitude towards health behaviors, the data of Rovner, Casten, and Harris (2013) revealed that there is indeed a positive correlation between the population's culture and their health status.

Wilson (2012) found that culture is significantly related to high body mass index (BMI) among second generation immigrants as compared to first-generation immigrants in Canada. Thompson (2011) observed that among Black adolescent girls, physical activity is not a common activity as compared to their

white counterparts and that there is a need for culturally-relevant effective strategies in order to heighten their response to physical activity which is based on their own tradition and custom. This was echoed by Harvey (2010) when he noted that culturally sensitive health interventions have proven to be vitally important for the elimination of the health disparities that Black Americans face. Similarly, Kreuter, Lukwago, Bucholtz, Clark, and Sanders-Thomson (2003) believe that health programs and interventions will be more effective when they are culturally appropriate for the populations they serve.

Health systems deliberately affect human behavior, thus affecting the health of an individual or a community (WHO Publications, 2008). Health systems can have a positive impact on the equality of human health and that one of the key issues is the development of primary health care in order to serve as the frontlines in delivering health care services to the general population (World Health Organization [WHO], 2007). Starfield (2012) observed that proper delivery of health care system results in improved health status within the individual and the community, and that it may be responsible in preventing illness and death. For example, in a 2-year randomized clinical trial of a Primary Health Care (PHC) integrated behavioral intervention designed to improve family diabetes management practices showed that it was effective in preventing the deterioration in glycemic control evident during adolescence (Nansel, Iannotti, & Liu, 2012). Delivering services and interventions to the individuals at community or primary levels results in change on health-related behaviors reduce risk morbidity and thereby increase health status of the population (WHO, 2007).

Delivery of health care is not without its challenge. Evidence shows that racial and ethnic minorities tend to receive a lower quality of healthcare than non-minorities. For example, McDonald and Neily (2011) revealed that migrants living in the United are less likely to be diagnosed with breast cancer and showed lower use of basic health services as compared to US-born citizens. In Malaysia, the concept of delivering the health care system through PHC started in the 1970s with a start-up number of 47 PHCs and 722 in 1998. The primary health care approach is a natural progress of Malaysian government in order to address the social determinants of health which then serve as a vehicle for social justice to reduce health inequalities (Mohamad & Jaafar, 2011).

By 1974, health or lifestyle behavior was already considered a leading factor that greatly contributed to the development of chronic diseases. Lalonde (1974), the then-Minister of Health in Canada, released a working paper report which stressed that the health care system was but one factor in ensuring health of the people. In the report, he emphasized the fact that in disease progression, there was a link between human biology, consisting 15-20%, environmental factors (20-25%), health care organization (15-20%), and lifestyle behaviour, which consist of 55-60% (Lalonde, 1974). Today, chronic diseases such as cancer, diabetes,

heart disease, and respiratory problems are responsible for about two-thirds of deaths worldwide and most of these are preventable through healthy lifestyle choices or behavior (Ezzati & Riboli, 2012).

Up to 80% of heart disease, stroke, and Type 2 diabetes and over a third of cancers could be prevented by eliminating shared risk factors, mainly tobacco use, unhealthy diet, physical inactivity, and the harmful use of alcohol (Ezzati & Riboli, 2012; Golubic, 2013). However, despite the increasing number of the above conditions, reduction in the incidences of some chronic diseases is now possible (Unwin & Alberti, 2006). They observe that up to 80% of all cases of cardiovascular disease or Type-2 diabetes and 40% of all cases of cancer are probably preventable. Lee (2013) reaffirmed this observation in his study on 15,801 men and women, aged 20 to 89 years. After observing the lifestyle profile which include never smoking, being physically active, and eating a healthy diet, result showed a total of 2,393 deaths due to poor health status (306 CVD, 653 cancer, 292 respiratory disease, 195 diabetes mellitus) during an average of 13.7 years of follow-up. The study concluded that being physically active, never smoking, and having a healthy diet are associated with normal blood pressure, BMI, WHR, blood glucose, and cholesterol.

It is obvious that culture and the people's attitude towards access to health care delivery do influence health behaviors as revealed in this literature review. It was the objective of this paper to answer the question: What is the effect of culture and access to health care delivery in terms of the respondents' health behavior such as diet, physical activity, sleeping and smoking habit?

Methodology

The study utilized a cross-sectional questionnaire study design. It was conducted as part of a nationwide health screening program targeting risk factors in chronic diseases. The researchers conducted this study in tandem with Adventist Health System, a not-for-profit organization. The program was conducted in October to November 2014 by a team of researchers consisting of four trained nurses and a nutritionist. Activities conducted during this screening program focused on health status and included BMI, waist-to-hip ratio, resting heart rate, and blood pressure measurement. Participants who were determined to be at high risk were given free personalized counselling and patient education at the study site. Educational materials such as pamphlets, booklets, and video demonstrations in the form of DVDs were also given freely.

The program site was centered in major shopping complexes in three major cities in Peninsular Malaysia, namely Penang, Kuala Lumpur, and Johor. The inclusion criteria for this study was a minimum age of 18 years and Malaysian nationality. The basis of selection for the study setting was made in order to best

target urban young adults given the early, preventive focus of this program. Respondents who attended the free screening program were inducted into the study if they gave their consent.

Study Instrument

This study adapted the *Health Risk Appraisal Questionnaire* from the American College of Cardiology (see www.cardiosmart.org). The tool employs a five-point Likert scale (1 - *Never*, 2 - *Seldom*, 3 - *Sometimes*, 4 - *Often*, 5 - *Always*), which included lifestyle behavior questions such as diet, exercise, sleeping, and smoking habits.

In addition, the researchers added two constructs. An expert panel was established and a joint meeting was held to discuss and develop questionnaire items based on the two constructs considered pertinent to the variables under study. The first examined 16 items which focused on cultural beliefs traditionally associated with health practices (e.g., importance of health, sleep practices, acceptance of male smoking, perception of overweight as being healthy, use of traditional healer). The second construct contained nine items which examined access to health care (e.g., the presence of community health center helps me to become confident with my health, the health programs in the community help me to prevent disease).

The questionnaire underwent a backward-forward translation process by linguistic and technical experts. Preliminary testing through a pilot study was conducted prior to actual data collection; it yielded an alpha of 0.811 ($n = 70$).

Data Analysis

This study adopted the Statistical Package for the Social Sciences (SPSS) software version #19.0. Frequencies and percentages were used to compute demographic data. To describe the independent and dependent variables, means and standard deviations were used. Enter-method was employed to determine existing relationships between the independent, dependent and moderator variables.

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Results

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Overall response rate of this study was good at 98% *(n = 468)*. Incomplete questionnaires were excluded from the analysis specifically those with more than five items missing; exclusion rate was at two percent. Most of the respondents were female ($n = 279, 60.8\%$). The majority of participants were clustered in the 18-39 age bracket ($n = 276, 60.1\%$) and were of Chinese origin ($n = 236, 51.4\%$).

Table 1 reflects the distribution of the respondents in terms of gender, age, and cultural background, measured against the lifestyle behavior such as diet, physical activity, sleeping, and smoking. The result revealed that females have an overall better lifestyle behavior in terms of diet (M = 3.16, SD = .42), physical activity (M = 2.60, SD = 0.48), sleeping (M = 3.12, SD = 0.69), and smoking (M = 2.11, SD = 0.72), all significant at 0.036, 0.001, 0.046 and 0.001 respectively.

In terms of age, those belonging to 60 years old and above displayed good lifestyle behavior in terms of Diet (M = 3.29, SD = 3.29), Physical Activity (M = 2.65, SD = .74), and Sleeping (M = 3.34, SD = .69) as compared to their younger counterparts, except for smoking where they were in the highest category (M = 2.28, SD = .78). Those in the age bracket of 18 to 39 displayed the worst dietary habit ((M = 2.97, SD = 2.98) and lack of sleep (M = 2.78, SD = .64), whereas those in the ages of 40-59 revealed to be the least smokers in the group (M = 2.18, SD = .73). Result of age showed significant difference in lifestyle behavior such as diet (.000), physical activity (.010), and sleeping (.000); however, the result did not show significant difference in smoking (.542).

Cultural background revealed that Chinese (M = 3.19, SD = .42) and Indians (M = 3.17, SD = .43) seem to have better dietary habit than their Malay counterpart (M = 2.95, SD = .31). Indians showed doing better in terms of physical activity (M = 2.70, SD = .85), followed by Malays (M = 2.49, SD = .65), and Chinese being the least active (M = 2.41, SD = .71). As far as sleeping habit is concerned, result showed that Chinese have the best sleeping habit (M = 3.15, SD = .72) and Indians having the worst sleeping habit (M = 2.95, SD = .61). Furthermore, there were more Malay smokers (M = 2.51, SD = .82) than their Indian (M = 2.29, SD = .77) and Chinese counterparts (M = 2.05, SD = .67).

Table 1

Frequency Distribution of Respondents in terms of Gender, Age, Cultural Background and Lifestyle Behavior

Demographics	Diet		PA		Sleeping		Smoking		
	p	M	p	M	p	M	p	M	N
Gender	0.04		.000		.046		.000		
Female	0.42	3.16	.48	2.60	.69	3.12	.72	2.11	279 (60.8)
Male	0.39	3.07	.45	2.55	.64	2.99	.79	2.39	180 (39.2)
Age	0.01		.010		.000		.542		
18-39	2.98	2.97	.69	2.49	.64	2.78	.77	2.22	276 (60.1)
40-59	3.16	3.16	.74	2.39	.59	3.15	.73	2.18	159 (34.6)
60 & above	3.29	3.29	.74	2.65	.69	3.34	.78	2.28	24 (5.2)
Cultural Background	0.01		.006		.023		.000		
Chinese	0.42	3.19	.71	2.41	.72	3.15	.67	2.05	236 (51.4)
Malay	0.31	2.95	.65	2.49	.61	2.99	.82	2.51	128 (27.9)
Indian	0.43	3.17	.85	2.70	.61	2.95	.77	2.29	87 (19.0)

In determining the predictors of lifestyle behavior, the study utilized the enter-method. Table 2 shows the variables that entered the regression which are considered statistically significant. The highest predictor of diet was *culture* with an unstandardized coefficient of 0.39, a *t*-value of 8.81 with a significance value of .000. This means that the more the respondents stick to their culture, the more likely they are to practice good dietary behavior. *Access to health care* showed a negative unstandardized coefficient of -0.07, a *t*-value of -2.31, significance value of .002, which is also significant at .01 level.

The best predictor of physical activity was *access to health care* with an unstandardized value of 0.31, a *t*-value of 5.11 and a significance level of .000. This shows that as the respondents' access to health care is increased, the more likely they are to engage in physical activity. Culture, on the other hand, showed no significance in the respondents' physical activity.

Table 2

Predictors of Lifestyle Behavior

Variables		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
Diet	(Constant)	1.91	0.16		11.67	0.00
	Culture	0.39	0.04	0.40	8.81	0.00
	Access	-0.07	0.03	-0.10	-2.31	0.02
Physical Activity	(Constant)	1.55	0.30		5.06	0.00
	Culture	-0.02	0.08	-0.01	-0.28	0.77
	Access	0.31	0.06	0.24	5.11	0.00
Sleeping	(Constant)	1.88	0.28		6.63	0.00
	Culture	0.41	0.07	0.25	5.30	0.00
	Access	-0.10	0.05	-0.08	-1.78	0.03
Smoking	(Constant)	2.06	0.31		6.50	0.00
	Culture	0.50	0.08	0.28	5.80	0.00
	Access	-0.04	0.06	-0.03	-0.68	0.49

The highest predictor of sleeping is *culture*, with an unstandardized coefficient of 0.41, a *t*-value of 6.63 and a significant value of .000, which reflects the fact that the more the respondents stick to their culture, the more likely they are to practice good sleeping behavior. Furthermore, *Access to health care* has a negative unstandardized coefficient of -0.10, a *t*-value of -1.78 and a significant value of .003. The result implies that the less accessible the health care is, the more likely they are to have good sleeping behavior. Smoking has a significant relationship on culture, with an unstandardized coefficient of 0.50, a *t*-value of 5.80, significant at 0.000. It did not show any significant relationship with access to health care.

Discussion

The findings of this study gave reason to predict the influence of culture in the lifestyle behavior of Malaysians. Eating habit is considered to be a social norm, and culture plays a part in this practice. People's dietary patterns are affected by their cultural surroundings, on what is perceived to be a social norm as a result of the individual's desire to fit in (Robinson, Thomas, Aveyard, & Higgs, 2013). In other words, food is something cultural; it is hard to modify. In Malaysia, over the last 2 decades, Malaysians' consumption of calories, sugar, and fats has increased (*The Star*, 2014), and most Malaysians eat outside their homes, in a hawker stall, at least once a week (Che, Omar, & Ishak, 2016). The current study showed that Malaysians have a tendency to eat more fruits and

vegetables. Yu et al. (2011) observed that Asian diets are high in fruits, vegetables, and fiber-containing foods. In carrying out dietary health programs in the community, it is important to understand the habits of the population in question. Race, ethnicity, and culture play a massive role in the dietary patterns; therefore, health care providers should be sensitive to the cultural background of the population (Ebenegger et al., 2011).

There were seven items in the question regarding physical activity, most of which yielded a poor response. The mean score for physical activity was 2.49, with a verbal interpretation of *poor PA*. Examples of the statements on physical activity include "I walk at least 30 minutes" and "I have a regular exercise regime." According to report, the general level of physical activity in Malaysia has declined due to increasing urbanization and industrialization, where machines now do most of the work previously done by human hands, with only 15% of Malaysians exercising correctly (The Star, 2011). Similarly, Mohamud et al. (2011) surveyed adult Malaysians and found that Chinese were considerably less active while Indians recorded the highest physical activity level, a result consistent with this study.

The respondents' reply on the question about sleep yielded *sometimes* which fell on the verbal interpretation of *fair* and with an overall mean score of 3.07, which further shows that Malaysians neither had good nor bad sleep. There is a price to pay by not sleeping enough and not sleeping well (Breus, 2012). According to Harvard School of Public Health, consequences of sleep deprivation include long term health risks such as high blood pressure, heart failure, Stroke, or even obesity (Harvard University, 2013). According to the report by Malaysian newspaper, based on the Philips Index for Health and Well-being published in November 2010, 81% out of the 800 Malaysian adults interviewed said that they did not get enough sleep at night (The Star, 2011).

The overall mean score on smoking was 2.22, with a verbal interpretation of *low*. Some of the statements include "I avoid places with people who smoke" and "I smoke 10 cigarettes per day". The American Heart Association (2011) reports that cigarette smoking resulted in an estimated 443,000 premature deaths each year due to smoking-related illnesses. According to the NHMS Report (2015), in 2015, there are approximately 22.8% Malaysians aged 15 years old and above who smoke.

The findings of the current study suggest that culture had a positive influence on three lifestyle behaviors—diet, sleep, and smoking. It, however, did not show any relationship with physical activity. The respondents' accessibility to health care, on the other hand, showed a negative influence on diet and sleep and a positive influence on physical activity. Bahammam (2011) confirmed that sleep is an important topic in Islamic literature and that a mid-day nap is encouraged and is beneficial for health purposes; even the Qur'an promotes good sleep habits.

It was reported that wellbeing and health are associated with adequate sleep (Bahammam & Gozal, 2012) and that sleep varies among cultures and traditions of society, as in previous studies, Asians tend to sleep less for substantially less than 8 hours.

Access to health care delivery showed a positive relationship with the respondents' physical activity. This was consistent with the result of a national cohort study in which authors found that those residential areas with lower health facilities displayed lower incidence of physical activity, as compared to areas with enhanced healthcare facilities (Boone-Heinonen et al., 2011). Moreover, Kwarteng, Schulz, Mentz, Zenk, and Opperman (2013) observed that neighborhoods with better health facilities showed improved physical activities, especially among younger generations, much more prominent to benefit middle-aged and older adults by enabling them to maintain physical activity (Ranchod, Roux, Evenson, Sanchez, & Moore, 2014).

The surprise in the current study is the fact that access to the delivery of health care services yielded a negative relationship to the respondents' dietary and sleep habits. Eckersley (2013) asked a question: "Is modernization a health hazard in itself?" (p. 1) The author posits that maybe, it is; especially if the stakeholders do not consider the strong culture of the population when modernizing health facilities—it may create anxiety in the population. In a report created by public health experts for WHO, Blendon, Kim, and Benson (2016) noted that there was inconsistency in public opinion regarding a country's health care and the experts; what may be perceived by the experts as good health care system do not necessarily translate as positive among the population. Similarly, in a cross-sectional survey among 1,435 adults in Liberia, Svoronos, Macauley, and Kruk (2015) concluded that despite the government's innovative health care delivery programs in the country, the respondents have less confidence that the health system can meet their health needs. In a qualitative study among diabetic adults in Australia, McDonald, Jayasuriya, and Harris (2012) concluded that due to lack of shared decision-making between the client and the health provider, it has affected the client's level of trust in health care in general.

Furthermore, Shippee, Schafer, and Ferraro (2012) found that differing patterns of trust in components of health care system according to race reflect divergent cultural experiences of the different races as well as differences in expectations for care. Moreover, Black et al (2011) noted that there is a large gap between the assumed and empirically demonstrated benefits of health technologies and client health outcomes. The question was, "Is this the same thing happening in Malaysia?" The study revealed that each culture differs in their health behaviors; creating health promotion programs suitable for each culture is a formidable task, but one that cannot be ignored if health-related behavior change is to be achieved (Huff & Kline, 2015).

Conclusion

This study confirms how multicultural Malaysia is and how Malaysians differ in their health behaviors. The findings of this study showcase the fact that health promotion and health education activities are a complex undertaking, one that requires an organized effort in understanding the culture of the population if someone wants to see positive results in their health behaviors. Needless to say, health promotion activities in a multicultural community require community involvement, one that will address the cultural issues of each individual. It is imperative therefore that awareness and sensitivity to cultural diversity be reflected in planning, design, and implementation of any community health-related programs.

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