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Cultural Belief and Self-Management of Type 2 Diabetes Among Black Africans in Liverpool

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Abstract
This study assesses the relationship between cultural belief and self-management of type 2 diabetes among Black Africans (BAs) in Liverpool. Data were collected using questionnaires and oral interview while the Pearson Chi-square technique was adopted in the validation of hypothesis stated in the study. The result of the analysis revealed that there is no significant relationship between culture and belief and self-management of type 2 diabetes(T2DM) among Black Africans in Liverpool. Though surprising that culture and belief are independent of respondents' perspective about type 2 diabetes and its management, it is perceived that this might beas a result of the integration of Black Africans to their present society and environment; and also their level of exposure to adequate health care facilities which include health education, diet and exercise**.** It was however concluded that despite insignificant relationship between cultural belief and self-management of type 2 diabetes, culture and belief still plays an important role in the management of illnesses and diseases especially among BlackAfricans.

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I. IINTRODUCTION

The occurrence of diabetes in human is embedded in history but the prevalence of diabetes has been on the increase in recent years. Type 2 diabetes is characterised by insulin resistance and relative insulin deficiency, either of which may be present at the time that diabetes becomes clinically manifested. Type 2 diabetes is the fourth most common cause of death in most developed countries (UK Prospective Diabetes Study Group, 1998). Type 2 diabetes accounts for about 90% to 95% of all diagnosed cases of diabetes. In type 2 diabetes, the pancreas continues to secret insulin, but the body cannot use insulin properly; this condition is called insulin resistance. As the need for insulin rises, the pancreas gradually loses its ability to produce insulin. Type 2 diabetes is associated with older age, obesity, family history of diabetes, history of gestational diabetes, impaired glucose metabolism, physical inactivity, and race/ethnicity (Centers for Disease Control and Prevention 2008).

Most health experts agree that the UK is facing a huge increase in the number of people with diabetes. Since 1996 the number of people diagnosed with diabetes has increased from 1.4 million to 2.9 million. By 2025 it is estimated that five million people will have diabetes. Most of these cases will be Type 2 diabetes, because of ageing population and rapidly rising numbers of overweight and obese people (Diabetes UK, 2012). In addition to the personal cost to individuals, families and communities, diabetes is estimated to account for at least 5% of UK healthcare expenditure. For example, up to 10% of hospital budgets are spent on the condition – it is estimated that drug costs alone for people with type 2 diabetes account for about 7% of the total NHS drugs budget (Waugh,Scotland, McNamee, Gillett, Brennan, Goyder, Williams, & John, 2007).

In a world where the public is facing a growing diabetes epidemic of potentially devastating proportions, there is a need to initiates effective and efficient programmes to intensify diabetes self-management that will prevent and reduce diabetes complications. Effective self-management of type 2 diabetes typically involves a complex regimen including healthy eating, weight control, medications, blood glucose monitoring, exercise, and stress management over long periods (Gould, Kelly, Goldstone, & Gammon, 2001; van Tilburg, McCaskill, Lane, Edwards, Bethel, Feinglos, Surwit, 2001). Interventions that combine counseling for dietary management, weight reduction, and physical activity are pivotal in reducing morbidity associated with T2DM (Gregg et al., 2001).

Cultural beliefs and attitudes about health and illness play an important role in how individuals perceive, experience, and manage health (Santos, Hurtado-Ortiz &Sneed, 2009). In Mexican culture, health tends to be viewed as holistic, interconnected with mind, body and spirit (Ward-Murray, 1997) which is similar to African culture. Treatment delivery among BA communities often entails addressing psychological, spiritual and physical realms related to the perceived notions of illness aetiology (Landrine&Klonoff, 1992). In a study

by Cha, Yan, Lee, Min, Kin, Dumbar, and Jennings (2012) to explore potential factors affecting the self-management behaviours of Korean immigrants with type 2 diabetes mellitus (KIT2Ds), it was suggested that important cultural nuances need to be addressed to better prepare the KIT2Ds to manage their diabetes more effectively. A culture-specific programme should extend beyond a diabetes self-management education delivered in Korean language. Rather, content and education methods need to consider acculturation effects on diabetes management behaviours. As such, cultural beliefs regarding illness play an important role in health behaviour for treatment among BAs and some other ethnic minority groups, as well as the type of health treatment chosen (Kleinman,Eisenberg, & Good, 1978; Spector, 2000; Schwab,Meyer & Merrell, 1994). Depending on the ailment, remedies may include the use of holy oils, candles and saints to protect or ward off negative influences. Herbs are also often given in the form of teas and ointments or prepared into capsules (Davidow, 1999).Choi and Rush (2012) conducted a pilot study that assess the effectiveness, feasibility, and acceptability of a short-duration, culturally tailored, community-based diabetes self-management program (CTCDSP) for Korean immigrants with type 2 diabetes delivered at a non-clinic-affiliated community Centre. The report shows that short-duration CTCDSP may be an effective, feasible, and favourably received approach to improving diabetes outcomes in Korean and potentially other underserved ethnic minority immigrants who have limited access to mainstream clinic-based diabetes self-management programs.

II. LITERATURE REVIEW

According to Helman (2007), an American medical anthropologist, culture is '… a set of guidelines (both explicit and implicit) which an individual inherits as a member of a particular society, and which tells him how to view the world, and how to behave in it in relation to other people, to supernatural forces or gods, and to the natural environment. It also provides him with a way of transmitting these guidelines to the next generation - by the use of symbols, language art and ritual' (Kittler &Sucher, 1989). The BAs in Liverpool with type 2 diabetes has always exhibited their cultural values in the management of their condition. For example, dining together is the most significant social activity in Taiwan to interact with others, and this makes diet behaviour highly vulnerable to social influence (Sharma & Cruickshank, 2001; Gregory, Whalley, Olson, Bain, Harper, Roberts & Russell, 1999). Furthermore, it is common to the people who possess a culture different from nurses and this may result in problems if they have a taboo or ritual regarding their particular disease (Gregory et al., 1999). As a nurse, to respect the patient's culture is a way to establish rapport and requires that care is managed individually, not collectively. The influence of culture can be visible, invisible, or even in the subconscious/unconscious (Helman, 2007); therefore, sometimes it is hard to identify if the factors of culture come into play. Many researchers argue that a chronically ill person that is subject to physical discomfort tends to be vulnerable to cultural influence (Goenka, Dobson, Patel, & O'Hare, 2004; Wood, Athwal, &Panahloo, 2004). Higginbottom (2006) described how issues of ethnicity, cultural adaptation, racism, and discrimination had an impact on the chronic illness experience in African–Caribbean people with hypertension (Higginbottom, 2006).

Prescribed medications are often required to manage diabetes and must be taken routinely and on a long-term basis. Loss of control and helplessness is often felt among patients who find management of T2DM overwhelming (Hunt, Valenzuela & Pugh,1998). Cultural health beliefs play a significant role in the negotiation of health decisions and health related behaviours (Hunt et al., 1998; Hernandez, 1995). For chronic diseases such as T2DM, these health behaviours are of particular importance as they are likely to be carried out over a lifetime and for a variety of related comorbidities.

Two investigators attempted to improve self-management behaviours through acceptance, relaxation therapy, and mindfulness skills to cope with diabetes. These coping strategies have been reported to be associated with improved glycaemic control (Gregg, Callaghan, Hayes & Glenn-Lawson, 2007; Rosenzweig,Reibel, Greeson, Edman, Jasser, McMearty& Goldstein, 2007). One intervention study reported that mindfulness meditation had a hypoglycemic effect and slightly lowered blood pressure in a Thai sample of T2DM (Chaiopanont, 2008).The cultural construction of illness then is frequently a personally and socially adaptive response (Kleinman 1980;Kleinman,Eisenberg &Good, 2006) created by human beings in particular social settings and at particular times (Lindenbaum and Lock 1993:3). This study thus aimed at evaluating the impact of cultural belief of Black African in Liverpool on diabetes self-management

III. MATERIALSANDMETHODS

This study employed both quantitative and qualitative techniques in the collection of data from the selected population. Non-probabilistic, snowball sampling techniques was employed for choosing participants for this study. The participants of this research were Black Africans ages forty to seventy-nine years with a self-reported diagnosis of type 2 diabetes.

Questionnaires were distributed to thirty black Africans between the age forty to seventy-nine living in Liverpool with the diagnosis of diabetes ranged from three months to thirty years and above. Five participants

were in their forties, eight participants were in their fifties, ten participants were in their sixties, seven participants were in their seventies. Six of the participants were married, four of the participants were widowed, five were divorced, three were separated, and two never married. Self-identified religious affiliation revealed that twenty-one (70%) were Christian, six (20%) were Muslim and three (10%) were not religious. Twenty-three ($\simeq$ 80%) of the participants reported being overweight at the time of diagnosis.Naeem (2003) shows that although a large majority of the men studied had been told by health professionals that they were overweight, a majority of them did not believe themselves to be so. This belief seems to have been influenced by cultural norms in which the overweight figures tend to project prosperity and well-being in the community. This is an indication of cultural values dominating the behaviour of the sample population. All of the participants have had a diabetes self-management health talk at least once since being diagnosed. Because some people of African origin living in the United Kingdom migrated from different African countries, all participants self-identified their country of origin. For this study all participants were referred to as Black Africans. The Pearson's chi-square statistic was adopted for the purpose of validating the hypothesis. This is given as:

$$X^2 = \sum\sum \frac{(n_{ij} - \hat{\mu}_{ij})^2}{\hat{\mu}_{ij}}$$

wheren_{ij} represents the observed frequency of the ith row and jth column of the contingency table, and $\hat{\mu}_{ij}$ is the corresponding expected frequency for the (ij)th cell.

IV. PRESENTATION OF RESULTS AND DISCUSSION

Demographic Information	Frequency	Percentage of total
Sex		
Male	17	56.7%
Female	13	43.3%
Age		
40-44	5	16.7%
50-54	10	33.3%
60-64	7	23.3%
65-69	1	3.3%
70-74	6	20.0%
75-79	1	3.3%
Marital Status		
Divorced	4	13.3%
Married	19	63.3%
Never Married	2	6.7%
Separated	2	6.7%
Widowed	3	10.0%
African Country of Origin	6	20.0%
Ghana	4	13.3%
Kenyan	15	50.0%
Nigerian	5	16.7%
Sierra Leone		
Diagnoses		
1-2 years		
11-15 years	5	16.7%
16-20 years	6	20.0%
26-30 years	3	10.0%
3-5 years	1	3.3%
6-10 years	8	26.7%
7-11 months	5	16.7%
More than 30 years	1	3.3%
	1	3.3

The table above revealed the demographic information of the respondents selected for this study.

Distributional percentage frequencies of the respondents by sex shows that 56.7% (17) were male, 43.3% (13) were female.

The data presented in table above reveals that there are 5(16.7%) of age range 40-44, 10(33.3%) of range 50-54, 7(23.3%) of age range 60-64, 1(3.3%) of age range 65-69, 6(20.0%)of age range 70-74 and 1(3.3%) of age range 75-79.

The percentage frequency distribution of the respondents in respect of their marital status shows that 4(13.3%) respondents were divorced; 19(63.3%) were married; 2(6.7%) were never married; 2(6.7%) respondents were separated while 3(10.0%) have lost their spouse (widowed). It means that the people's culture is influenced by many other factors at one point in time and should not be seen in isolation. An individual's age, gender, size, body image and experience, educational, socio-economic and social class, economic stability, social support network and environmental factors may influence health beliefs, all of which have important implications for health and health care.(Pawa, 2003; Helman, 2007).

The percentage frequency distribution of the respondents in respect of the participants' country of origin shows that 6(20.0%) respondents were Ghanaians; 4(13.3%) were from Kenya; 15(50.0%) were Nigerians; 5(16.7%) respondents were from Sierra Leone. This indicates that there are more people of Nigerian origin living in Liverpool, who have also participated in the research project.

The above table revealed that 5(16.5%) have been diagnosed of T2DM between one-two years; 1(3.3%) was diagnoses more than 30 years; 6(20.0%) had been diagnosed between 11-15years; 3(10.0%) between 16-20years as presented by the analysis above.

Research Hypothesis: Culture and beliefs has no significant relationship with diabetes self-management among the Black Africans in Liverpool

Remarks: Chi square test of independence – Culture and beliefs and diabetes self-management among the Black Africans in Liverpool

Culture and beliefs about diabetes self-management Crosstabulation

			Culture and beliefs about diabetes self-management	
			Disagree	Total
Experience of Diabetes self-management	Mildly Experienced	Expected Count	24.0	24.0
		% within Experience of Diabetes self-management	100.0%	100.0%
		% within Culture and beliefs about diabetes self-management	80.0%	80.0%
	Very Experienced	Expected Count	6.0	6.0
		% within Experience of Diabetes self-management	100.0%	100.0%
		% within Culture and beliefs about diabetes self-management	20.0%	20.0%
Total		Expected Count	30.0	30.0
		% within Experience of Diabetes self-management	100.0%	100.0%
		% within Culture and beliefs about diabetes self-management	100.0%	100.0%

Chi-Square Tests

	Value
Pearson Chi-Square	.[a]
N of Valid Cases	30

a. No statistics are computed because Culture and beliefs about diabetes self-management is a constant.

Interpretation:

There was only one category as all the respondents, independent of their experience, disagreed with four or more of the beliefs about diabetes self-management. There was thus little agreement of the respondents with the beliefs among Black Africans about diabetes self-management. The outcome of this result is surprising. The culture and beliefs of the study participants appear not to have affected the self-management of their T2DM. This could be as a result of their level of integration to their present society and environment; and also, their exposure to adequate health care facilities which include health education, diet and exercise.

Factor Analysis of Culture and Belief and Diabetes Self-Management

The factor analysis covered three factors. They were identified as: (1) Caused by evil spirit; (2) Country of birth; and (3) Inherited. Cronbach alphas were calculated for the resulting sub-scales, based on selected variables. The three sub-cluster solution was consistent with previous findings (Langford et al., 2007; Heisler, 2007) on the effects of culture and belief system on the management of diabetes mellitus. According to Heisler (2007), Culture (theme) has three sub-themes: perception; socio-cultural interpretation of type 2 diabetes mellitus; and whether country of birth has any implication on aetiology of type 2 diabetes mellitus. In this study, the participants' perception differs in terms of cultural interpretation of T2DM. Some of the response categories are as follows:

'Haaaaa.....type 2 diabetes? I don't think it can be caused by evil spirit, I see it as a lifestyle problem or perhaps it might be due to genetic problem' (Participant 6).

'I have been trying, though not easy to stabilise the disease, I have a different opinion about life since my diagnosis, I don't think diabetes has anything to do with evil spirit'(Participant 21).

Other Participants said:

'I feel that I have to be more careful about how I handle my diet and be careful with my weight as well' (Participant 13; 19; and 30).

'Yes, I believe that I have to be conscious of my food. I can't just eat sweet things like chocolate or add sugar to my coffee' (Participant 15 and 19).

Many of the participants opined that:

'There was nothing to indicate whether type 2 diabetes was hereditary or caused by evil spirit' (Participant 26).

In the same manner, some participants also described type 2 diabetes stating that:

'It is a long-term condition caused by too much sugar in the body blood when there is no enough insulin' (Participant 19 and 22).

To corroborate the insignificant relationship between culture and belief system and self-management of type 2 diabetes among black African living in Liverpool, none of the respondents attached having type 2 diabetes to evil spirit, although, when asked the question 'what makes it easy for you to manage your condition?', some responded by saying:

'My religion and belief'(Participant 6; 21 and 27).

When further asked if any of their cultural beliefs contradict their diabetes management in any way, some participants stated as follow:

'I am on top of it so I can reconcile my culture with my condition' (Participant 12).

Similarly, other participants' responses were:

'Well I am going to say yes, because with my culture we are used to eating anything. I don't have preference for any particular food'(Participant 13 and 20).

'Yes, because with some of the food in my cultural background. I am used to them although not sure what they contain. I must say I was born with them…. I mean African food' (Participant 24).

A participant does not know if any of their cultural beliefs contradict diabetes managementby making the following statement:

'All I know is that there are many African diets that are very good. I like unripe plantain because they are not sweet and not too starchy'(Participant 25).

Some other participants also opined:

'My culture does not affect my own condition, because we normally prepare various types of vegetables although we are not totally vegetarians. We eat most of the vegetables raw, especially fruits. It keeps me alive, well and healthy' (Participant 14, 19, 25 and 27).

V. DISCUSSION AND CONCLUSION

This study evaluates the relationship between culture and belief of Black African in Liverpool and diabetes self-management. The influence of culture and belief on the self-management of illness and diseases has long position in Black African historical background. Culture and belief are believed to have a significant influence on the perspective of individual on diseases and illness which affect treatment and self-management such illness and diseases especially among Africans.

The result of the analysis revealed that there is no significant relationship between culture and belief and self-management of diabetes among Black African in Liverpool. This implies that the perspective of respondents on diabetes is not related to their culture and belief and self-management of diabetes is independent of cultural belief. This is supported by the oral interview responses that were given by some selected respondents as revealed above.

However, the inability to validate the significant relationship between culture and beliefs about Diabetes Self-Management among Black Africans sufferers in Liverpool differs from previous studies (Santos et al., 2009; Ward-Murray, 1997; Landrine&Klonoff, 1992; Kleinmanet al., 1978; Schwab et al., 1994). According to Santos et al. (2009), cultural beliefs and attitudes about health and illness play an important role in how individuals perceive, experience, and manage health. In Mexican culture, health tends to be viewed as holistic, interconnected with mind, body and spirit (Ward-Murray, 1997) which is similar to African culture. Treatment delivery among BA communities often entails addressing psychological, spiritual and physical realms related to the perceived notions of illness aetiology (Landrine&Klonoff, 1992). As such, cultural beliefs regarding illness play an important role in health behaviour for treatment among BAs and some other ethnic minority groups, as well as the type of health treatment chosen (Kleinmanet al., 1978; Schwabet al, 1994). Depending on the ailment, remedies may include the use of holy oils, candles and saints to protect or ward off negative influences. Herbs are also often given in the form of teas and ointments or prepared into capsules (Davidow, 1999).

Conclusively, while it seems to be insignificant relationship between cultural belief and self-management of diabetes 2, culture and belief still play an important role in the management of illness and diseases especially among African. Though surprising that culture and belief are independent of respondents perspective about diabetes 2 and its management it is perceived that this might as a result of the integration of Black African to their present society and environment; and also their level of exposure to adequate health care facilities which include health education, diet and exercise. Thus, one limiting factor of this paper is that it was carried out in overseas currently which might have a different outcome when conducted in African country.

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