Research Article

Health Literacy and Health Behavior among Young Adult Children of Type II Diabetic Patients in the Urban District of Lilongwe, Malawi

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Abstract

Background: Limited heath literacy, health risk behaviors, family history, and overweight have been closely linked to the rise in diabetes mellitus prevalence globally; the situation in Malawi reflects these broader trends. Little work has been done on preventing diabetes in Malawi, especially with focus on young adult children with family history of the disease. The study explored factors that affect health literacy and health behaviors among young adult children of type II diabetes mellitus patients.

Methods: This predictive correlational study was conducted from August to September 2019 with 132 young adult children of parents with a confirmed diagnosis of type II diabetes mellitus age 18 years and above. Respondents were chosen using convenient sampling. The study used a health literacy questionnaire and the WHO STEP instrument for data collection.

Results: The mean scores on health literacy was 54.14 ± 8.52. Health literacy was associated with smoking behavior and positively correlated with diet. Alcohol consumption was influenced by age, Gender and the employment status of respondents. Predictors of health literacy included education level, marital and employment status, in addition to the duration a child lived with a diabetic parent and the number of people 18 years and above per household.

Conclusion: To encourage healthier behaviors that are crucial for preventing diabetes, government and health professionals need to focus on increasing health literacy among young adults with a family history of the disease. A similar study should be conducted in rural areas.

Keywords: Adult children; Diabetes; Family history; Health behavior; Health literacy

Introduction

Diabetes mellitus has proven to be a threat to the public worldwide; its prevalence continues increasing, affecting people of all ages. It is estimated that the number of patients with type II diabetes worldwide will grow from 463 million in 2019 to 700 million by 2045 [1]. Diabetic patients are at risk of developing a number of serious and life-threatening complications that may result in a greater need for medical care, reduced quality of life, increased patient and family stress, and premature death.

High prevalence of infectious diseases, HIV/AIDS, and extreme poverty have for a long time dominated the African continent, however non communicable diseases are an emerging priority. The World Health Organization [WHO] predicts that if little is done to address risk factors and control Non Communicable Diseases (NCDs) in Africa, NCDs will quickly become the leading cause of mortality and morbidity in the region [2]. By 2045, the population of people living with diabetes in Africa is expected to increase by 143%, the highest increment compared to all regions globally [1]. Worrisome enough, most African countries are low and middle income and have developing health systems, as a result, diabetes patients in the region usually receive inadequate

treatment, a situation which exposes them to multiple preventable complications of the disease and premature death [3].

The prevalence of diabetes in Malawi is growing exponentially, accounting for an ever-increasing economic and psychological burden on patients and their families. It has increased from less than 0.5% to 5.6% over a period of 45 years from 1964 to 2009 [4-6]. Reasons for the current increase in diabetes mellitus prevalence in Malawi include increasing urbanization, changes in lifestyles, physical inactivity, unhealthy diet, increased life expectancy, and HIV/AIDS [7]. Furthermore, 30% of Malawians are overweight and 9% percent are obese, with urban women and the most educated taking the lead [5,8,9]. The problem of overweight among Malawians may also be linked to cultural beliefs like a tendency in African societies to view being overweight or obese as a sign of prestige, social status, wellness, and prosperity.

Infectious diseases have long been the focus of the medical system; combined with a rise in non- communicable diseases, the implications for the country's health system and economy are enormous [10]. Public health efforts in Malawi have generally focused on infectious diseases like malaria, sexually transmitted infections including HIV/AIDS, pneumonia among children under five, tuberculosis, diarrheal diseases, as well as malnutrition and maternal and neonatal heath [5,11,12]. As it is a developing country, Malawi's health care system is also in development and faces many challenges including a shortage of human and material resources, a situation which subjects patients to inadequate care [13]. The burden of diseases is not confined to the country's economy and health system, it also profoundly affects patients' lives financially and psychologically. Most diabetic clients in Malawi fail to comply with medication and diet recommendations due to their financial difficulties [14,15]. Improving health literacy is an effective strategy for reducing the burden of disease on both patients and the health care system.

Health literacy is a foundation of healthy behavior [16]. Health Literacy in general refers to a person's ability to obtain, understand, and make use of health information to enhance and maintain good health [17]. An individual with adequate health literacy is more likely to engage in health promoting behaviors that can lower the risk of developing diabetes [18]. Literacy is an essential requirement for health literacy and consists of a set of skills that includes reading, writing, numeracy, and comprehension of information [19]. Literacy improves the utilization of health services and health information to promote the health of the individual [20]. Poor literacy skills result in limited health literacy which further leads to increased risk of developing chronic conditions due to unhealthy behaviors [21,22].

Diabetes risk is related to family health habits. Family members share genes, behaviors, lifestyles, and environments that can influence their health and their risk for diabetes [23]. The genetic risk combined with lifestyle behaviors can speed up or worsen the development of the disease. The likelihood of particular family members developing the condition increases with age, characteristics such as overweight or obesity, and individual lifestyle behaviors like exercise habits and food preferences. Despite non modified risk factors togetherness with a positive family history of the disease, with adequate health literacy and healthier behaviors, diabetes is preventable [24,25].

One prevention strategy for diabetes mellitus that is under-used is the targeting of individuals with a positive family history of disease. The strategy has potential to raise awareness and reinforce healthy eating, weight control, and physical activity, to lower their risk of developing diabetes [26]. Most studies in Malawi have concentrated on addressing treatment of diabetes and documenting its prevalence in the country. Little research has been done on diabetes mellitus prevention, especially among young adults with a family history of the disease. Assessing health literacy and determining health behaviors among young adults born in families with a history of diabetes is one promising approach to preventively reduce the prevalence and burden of the disease in Malawi.

Methods

Study Design and Data Collection

This study used a cross-sectional predictive correlation design. A total of 132 young adult children of type 2 diabetics were included in the study through convenience sampling. Respondents were identified through their type 2 diabetic parents attending a diabetes clinic at Kamuzu Central Hospital. Parents provided contact details of respondents who were later followed up in their respective homes for the interview. Data were collected from August 1, 2019 to September 14, 2019. The inclusion criteria were: (1) biological sons and daughters of parents with a confirmed diagnosis of type 2 diabetes, (2) age 18 years and above, (3) who could understand English or Chichewa, and (4) who were willing to take part in the study. The study excluded young adult children of diabetic parents who were deaf, blind, very ill, demented, or psychotic. The researcher interviewed only the oldest young adult child per household.

Instruments

Health Literacy

The researchers developed a questionnaire based on prior research for the purpose of evaluating health literacy among young adult children of parents with type 2 diabetes mellitus. In total, the questionnaire had 27 items divided into two sections. Section A consisted 19 Yes or No questions, while section B had 8 questions answered on a 5-point Likert scale, where 1 meant "Strongly

Disagree," 2 meant "Disagree," 3 meant "Undecided," 4 meant "Agree," and lastly 5 meant "Strongly Agree." This health literacy scale assessed participants' access to, reading, understanding, judgment, and use of health information to promote their health. This tool also evaluated the numeracy skills of respondents. The instrument was tested for content validity by six diabetes experts and their comments were incorporated accordingly. Using the universal agreement approach, the questionnaire had a content validity index of 1. Reliability was tested using the Scientific Package for the Social Sciences software v. 22 and the instrument achieved a Cronbach's alpha of 0.831. Health literacy of respondents was determined based on their mean scores. A higher mean score indicated better health literacy.

Health Behavior

The study used the WHO STEP-wise Survey Questionnaire to assess the respondents' risk behaviors for diabetes. Such behaviors included tobacco use, alcohol consumption, diet (fruit and vegetable consumption), and physical activity. Young adults who have ever used any tobacco products, smoked or smokeless, were considered as smokers. In addition to reporting the tobacco use behavior, respondents also reported their alcohol consumption in the last 30 days. Excessive or harmful use of alcohol was defined as drinking of a least five standard units of alcohol per day for men and at least four standard units of alcohol per day for women. Diet was evaluated based on young adult's self-reported number of days of fruit and vegetable consumption in a typical week and number of each serving per day. Consumptions of less than five servings of fruits and vegetables per day was considered as unhealthy diet. Respondents were also assessed on their degree of physical activity in a typical week, with moderate-intensity physical activity defined as activity that cause a small increase in breathing or heart rate for at least 150-300 minutes per week while vigorous-intensity activity was considered as aerobic vigorous physical activities that cause a large increase in breathing or heart rate for at least 75-150 minutes per week. For marital status, young adult children of diabetic patients that have never been married were classified as single while those legally or customary living together with their spouses were classified as Married. Furthermore, young adults who have obtained a legal divorce and have not remarried were categorized as divorced. Body Mass Index (BMI) was calculated by dividing weight in kg by height in m^2 (kg/m^2). A BMI between 18.5 and 24.9 was classified as normal weight, while a BMI of 25.0 and above was considered overweight.

Ethics

Clearance to conduct this study was obtained from the Malawi National Health Sciences Research Committee (clearance number 19/07/2365). Furthermore, the research committee of Kamuzu Central Hospital approved identification of respondents through diabetes patients attending a clinic at the institution (approval number KCH/RESEARCH/07/19). Young adult children willing to take part in the study were asked to provide both verbal and written consent before the interview.

Results

A total of 132 young adult children of diabetic parents were included in the study with an average age of 29.54 (SD =± 5.92) years. The average number of people 18 years and above living in one household (NP ≥ 18H) was 2.7 (SD =± 1.81), while the mean Duration a Child Lived with Parents (DCLP) was 15.98 (SD =± 8.80) years. A majority of respondents were male, single, and in school. Graduates and those who were employed also dominated the survey. Tobacco use was low among respondents, at 17.4%, compared to alcohol consumption, at 42.4% (Table 1).

Variable		M ± SD/N(%)
Age		29.54 ± 5.92
NP ≥ 18H		2.71 ± 1.81
DCLP		15.98 ± 8.80
Gender	Male	72(54.5)
	Female	60(45.5)
Ethnicity	Chewa	37(28.0)
	Tumbuka	39(29.5)
	Ngoni	21(15.9)
	Yao	12(9.1)
	Other	23(17.4)
Marital Status	Single	73(55.3)
	Married	48(36.4)
	Divorced	11(8.3)
Educational Level	Primary	15(11.4)
	Secondary	49(37.1)
	Graduate	68(51.5)
Employment Status	Employed	63(47.7)
	Self-employed	26(19.7)
	Unemployed	20(15.2)
	Student	23(17.4)
Religion	Christian	112(84.8)
	Muslim	14(10.6)
	Other	6(4.5)
Tobacco use	Yes	23(17.4)
	No	109(82.6)
Alcohol consumption	Yes	56(42.4)
	No	76(57.6)
Note: NP ≥ 18H = Number of people older than 18 years per household, DCLP = Duration child lived with parent.		

Table 1: Demographic Characteristics of the Population (N = 132).

Health Literacy in Malawi

Using Pearson's correlation coefficient, this study found a

weak positive correlation between health literacy and the number of people 18 years and above per household (r = .273, p = 0.002). The higher the number of people in a household, the better the level of health literacy among family members. Similarly, the duration a young adult child lived with a diabetic parent was also moderately positively correlated with health literacy (r = .310, p = <.001). The longer young adult children lived with their diabetic parents, the better their scores on the health literacy scale. Marital status is another factor that determines respondents' ability to access, understand, and use health information to prevent diabetes (F = 7.249, P = .001). Post hoc analysis showed no difference in health literacy scores between respondents who were single or married, however, both had higher scores than those who were divorced.

Results of this study further emphasize the essential role education plays in the health literacy of a person (F = 4.116, P = .018). A post hoc comparison indicated that young adult children of diabetic parents who were college graduates or above had the highest mean scores on health literacy compared to those with secondary or primary education. Employment status of young adult children affected their health literacy as well (F = 4.157, P = .008). A multiple comparison showed that young adult children of diabetics who were employed had higher mean scores on health literacy than those who were students, self-employed, or the unemployed, who had the lowest scores. In this study, age, gender and religion were not associated with health literacy among young adult children of diabetic parents (Table 2).

Variable	M ± SD	t /r/F	P value
Age	54.136 ± 8.526	-0.005	0.955
NP ≥ 18H	54.136 ± 8.526	0.273	0.002
DCLP	54.136 ± 8.526	0.31	<.001
Gender			0.579
Male	54.514 ± 8.993	0.556	
Female	53.683 ± 7.982		
Ethnicity		1.962	0.104
Chewa	56.162 ± 8.033		
Tumbuka	51.385 ± 8.515		
Ngoni	56.048 ± 8.297		
Yao	55.167 ± 10.718		
Other	53.261 ± 7.539		
Marital Status		7.249	0.001
Single	54.959 ± 7.026		
Married	54.936 ± 10.045		
Divorced	45.182 ± 5.134		
Education Level		4.116	0.018
Primary	51.533 ± 8.568		
Secondary	52.143 ± 9.220		
Graduate	56.147 ± 7.575		
Employment Status		4.157	0.008
Employed	56.000 ± 9.301		
Self-employed	52.000 ± 8.154		
Unemployed	49.350 ± 5.715		
Student	55.609 ± 6.847		
Religion		0.438	0.646
Christian	53.848 ± 7.962		
Muslim	55.500 ± 11.264		
Other	56.333 ± 12.437		
Note: NP ≥ 18H = Number of people 18 years and above per household, DCLP = Duration child lived with parent.			

Table 2: Relationship between Demographic Variables and Health Literacy (N = 132).

Health Behavior in Malawi

Tobacco Use

Encouragingly, most young adult children of diabetics did not use any form of tobacco (82.6%). Gender was associated with smoking behavior among respondents ($X^2 = 11.801$, P <.05). The majority of those who had ever smoked or were currently using tobacco products were male (87.0%) rather than female (13.0%). Lower health literacy was also associates with Smoking behavior (t = -2.47, p <.05). Smokers had lower mean scores on health literacy compared to non-smokers. No association was found between tobacco use behavior and young adult children age, education level, employment and marital status, religion and ethnicity (Table 3).

Variable	Tobacco Use			Alcohol Consumption			Diet	
	Yes(%)	No(%)	t/X^2	Yes(%)	No(%)	t/X^2	M ± SD	t/F/r
NP ≥ 18H	23(17.4)	109(82.6)	-2.24*	56(42.4)	76(57.6)	-1.26	10.86 ± 4.24	0.92
DCLP	23(17.4)	109(82.6)	-2.24*	56(42.4)	76(57.6)	-2.55*	10.86 ± 4.24	0.73
Age			3.12			9.72*		-0.44
Age less than 29	8(34.8)	60(55.0)		20(35.7)	48(63.2)		10.71 ± 3.77	
Age above 29	15(65.2)	49(45.0)		36(64.3)	28(36.8)		11.03 ± 4.71	
Gender			11.80*			11.18*		-1.42
Male	20(87.0)	52(47.7)		40(71.4)	32(42.1)		10.39 ± 4.29	
Female	3(13.0)	57(52.3)		16(28.6)	44(57.9)		11.43 ± 4.13	
Marital status			3.01			2.88		-2.01*
Not married	11(47.8)	73(67.0)		31(55.4)	53(69.7)		10.31 ± 4.09	
Married	12(52.2)	36(33.0)		25(44.6)	23(30.3)		11.83 ± 4.36	
Ethnicity			0.34			1.8		3.99*
Chewa	6(26.1)	31(28.4)		14(25.0)	23(30.3)		10.97 ± 4.75	
Tumbuka	6(26.1)	33(30.3)		20(35.7)	19(25.0)		9.38 ± 3.27	
Other	11(47.8)	45(41.3)		22(39.3)	34(44.7)		11.82 ± 4.26	
Education status			0.28			0.09		-2.31*
Not educated	10(43.5)	54(49.5)		28(50.0)	36(47.4)		10.00 ± 4.45	
Educated	13(56.5)	55(50.5)		28(50.0)	40(52.6)		11.68 ± 3.88	
Employment Status			1.49			3.88*		0.71
Not employed	5(21.7)	38(34.9)		13(23.2)	30(39.5)		10.49 ± 4.19	
Employed	18(78.3)	71(65.1)		43(76.8)	46(60.5)		11.04 ± 4.27	
Religion			0.1			1.49		-1.36
Christian	20(87.0)	92(84.4)		50(89.3)	62(81.6)		10.65 ± 4.03	
Other	3(13.0)	17(15.6)		6(10.7)	14(18.4)		12.05 ± 5.22	
Health literacy	50.22 ± 8.16	54.96 ± 8.40	-2.47*	52.75 ± 8.88	55.16 ± 8.17	-1.61	10.86 ± 4.24	.39***
Note: *p<0.05; ***p<0.001, NP ≥ 18H = Number of people 18 years and above per household, DCLP = Duration child lived with parent.								

Table 3: Relationship between Demographic Variables, Tobacco Use, Alcohol Consumption and Diet (N = 132).

Alcohol Consumption

In total, 57.6% of the study population did not use alcohol. Respondents' age ($X^2 = 9.722$, P<.05), gender ($X^2 = 11.182$, P<.05) and employment status ($X^2 = 3.881$, P<.05) were found to be associated with drinking behavior. Alcohol consumption was mostly prevalent among young adults who were male, employed, and 29 years of age and above. This study found no association between alcohol use and marital and education status, ethnicity, religion, and the number of people age 18 or older per household (Table 3).

Diet

Fruit consumption was critically below the recommended five servings per day. The mean number of days' young adults ate fruit in a typical week was 2.69 and on average they ate 1.40 servings per day. As expected, they scored better on vegetable consumption. In a typical week, the mean number of days' respondents reported consuming vegetables was 5.15, with a mean number of 1.62 servings per day. Fruit and vegetable consumption was associated with marital status, (t = -2.01, p = .046), education status (t = -2.31, p = .023), ethnicity (F = 3.99, p = . 021) and health literacy (r = .39, p< .001). Married respondents ate more fruit and vegetables than those who were single. In addition, respondents who were educated had a higher mean score, indicating a better diet than young adults in the non-educated group. Furthermore, compared to the Chewa and Tumbuka ethnicities, young adult children of diabetic parents belonging to the other ethnicity group had the highest score on diet, with no clear explanation for this finding. Using Pearson's correlation coefficient method, a moderate positive correlation was found between health literacy and diet. Young adult children with higher mean scores on health literacy had better fruit and vegetable consumption. However, no significant differences in consumption of fruit and vegetables were observed by gender, employment status, age group, or religious affiliation (Table 3).

Physical Activity

This study found no relationship between the demographic characteristics of young adult children of diabetic parents and the degree of their involvement in recreational physical activities. However, respondents who were married, educated, and employed had higher mean scores on vigorous sports activity than those who were not married, not educated, and not employed. In addition, health literacy also showed to have no influence on physical activity behavior in this study population.

Body Mass Index (BMI)

Young adult children's gender, marital status, education level, and employment status were not associated with BMI scores.

Predictors of Health Literacy

In order to identify predictors of health literacy, all variables that were significantly associated with health literacy in the univariate analysis were entered in the regression model simultaneously. The model significantly predicted health literacy scores among young adult children of diabetic parents in general F (9,122) = 4.765; P = < .001 and explained 26% of the variance in health literacy scores. At p value <0.05, the model showed that predictors of health literacy among young adults included; marital status, education level, employment status, the number of young adult children 18 years and above in a household, and the duration young adult children lived with their diabetic parents (Table 4).

Variable	B	SE	T	P Value	VIF
(Constant)	48.294	3.145	15.357	<.001	
NP ≥ 18H	0.836	0.403	2.073	0.04	1.209
DCLP	0.214	0.081	2.624	0.01	1.165
Marital Status					
Married vs Single	0.048	1.735	0.028	0.978	1.444
Divorce vs Single	-6.811	2.818	-2.417	0.017	1.257
Education level					
Secondary vs Primary	-0.023	2.441	-0.009	0.993	2.882
Graduate vs Primary	3.824	2.492	1.133	0.029	3.213
Employment status					
Self-employed vs Employed	-2.235	1.963	-1.138	0.257	1.263
Unemployed vs Employed	-4.619	2.207	-2.093	0.038	1.297
Student vs Employed	-0.137	2.217	-0.062	0.951	1.465
Note: NP ≥ 18H = Number of people 18 years and above per household, DCLP = Duration child lived with parent					

Table 4: Multiple Linear Regression Analysis for the Predictors of Health Literacy Scores (N = 132).

Family living arrangements predicted health literacy scores. For example, every additional family member resulted in a 0.836 increase in health literacy score (B = .836, p = . 040). Similarly, every additional year a young adult child lived with a parent with diabetes increased the score on the health literacy scale by 0.214(B = .214, p = .010). On the other hand, living arrangements can also negatively impact health literacy. Specifically, being divorced decreased scores on the health literacy scale by 6.811 compared to those who were single (B = -6.811, p = . 017). Education level also predicted health literacy of young adults, for every one level increase in respondents' education, scores on health literacy increased by 3.824 (B = 3.824, p = .029). Furthermore, employment status was another predictor of health literacy scores among young adult children of diabetic patients. Not being employed results in a decrease of 4.619 on health literacy scores compared to people who are employed (B = -4.619, p = 0. 038).

Discussion

The primary purpose of this study was to explore factors affecting health literacy and health behavior among young adult children of type II Diabetes Mellitus (DM) patients. The study was dominated by graduates and those who were employed as it was done in an urban area where most institutions of higher learning and employers are to be found. Therefore, young adults relocate to these areas for tertiary education or to seek employment.

Health Literacy in Malawi

It is important to identify individual characteristics that may promote or impede access to, comprehension of, and use of health information that could prevent or delay the onset of diabetes mellitus. Results of this study suggests that large families could lead to improved health literacy among family members. Like other African societies, Malawians live in extended families with numerous members who consult each other and exchange knowledge, resources, and support in making health decisions [27,28]. In addition, Health literacy is not just personal abilities but also distributed resources available through a person's social networks. Health literacy is distributed within families, low individual ability to perform health-related activities may be offset by the superior ability of other family members [29]. This survey also showed that the longer the duration young adults lived with their diabetic parents the better their health literacy. Young adults may acquire health information by observing or supporting their diabetic parent, who may also share information about the disease [28,29]. Furthermore, these children partake in their parents' care by accompanying them to clinic consultations now and then, which exposes them to information health professionals provide to their parents, which they may use to promote and maintain their own health [30]. Moreover, sometimes these children witness their parents struggle with complications of the disease and fear of having the same fate motivates them to seek more health information for the purpose of preventing the disease, in the process, this improves their health literacy.

Low scores among divorced young adults may be due to the psychological trauma of the marriage breakup that distracts their attention from their own health or decreases their motivation to make use of health knowledge compared to those who are single or married. These findings differ from a study in Xinjiang, China where the divorced elderly scored higher on health literacy than those who were widowed or unmarried [31,32]. The inconsistency in results may be due to the difference in ages of the study populations and their ability to cope with the effects of divorce. The average age in the Xinjiang study was 77.37 years, while in the present study it was 29.54 years. The effects of divorce may be more overwhelming among young adults due to comparative lack of experience in coping compared with the elderly, and the fact that they are sexually active means they feel a stronger need to have a partner.

College graduates had higher mean scores on health literacy compared to young adults with secondary and primary education level. People with higher education usually have good access to health information, as well as better ability to understand such information [33,34]. Better access and comprehension of health information enables people to make better health decisions and promote their own health. Literacy itself is a fundamental component of health literacy. Better health literacy requires adequate functional, conceptual, and numeracy skills. College graduates have better ability to read and write, and can handle day to day situations that requires mathematical skills, compared to those who are less educated. Conversely, lower education levels have been linked to inadequate health literacy, lower self-reported health status, in addition to poor understanding, appraising, evaluating, and judgment of health information [35,36] Low education leaves the majority less connected to their health system and poor compliance with prescribed health recommendations [36-38].

Higher mean scores on health literacy were also observed among employed young adult children of diabetic parents. Ideally, employment creates better socio-economic status for an individual, and better financial status means access to better health services, as well as wider access to health information, as they can afford to pay for the internet, newspapers and television cable subscriptions [39,13]. Those who are not employed mostly have limited financial and social capital and are more likely to have poor knowledge about health [40,41].

Health Behavior in Malawi

Tobacco Use

There was low usage of tobacco products among respondents. This was predictable result, given that only 1% of Malawian women and 12% of Malawian men use tobacco, in spite of it being the main cash crop among Malawians [42]. Furthermore, in Malawi culture, smoking is considered as an appropriate behavior for men rather than women, hence such a significant difference between them. Similar results were reported in a European study, in which smoking was found to be more associated with the male gender [43]. Smoking was also common among those with lower mean scores on health literacy. Previous studies have reported that lower health literacy is connected to less perception and awareness of the risk of smoking as well as increased nicotine dependence [44,45].

Alcohol Consumption

Alcohol use was more common among men, young adults above the age of 29 and employed. Unlike those below the age of 29, young adult children above the age of 29 generally are done with their studies, perhaps employed, independent and free to spend their money, including on alcohol. Women in Malawi usually avoid drinking behavior in order to maintain their respectability and dignity in the society. These results confirm preceding survey findings in Malawi where alcohol use was observed to be more prevalent among men rather than women and among Malawians above the age of 25 years [46]. The observed difference in alcohol consumption among the employed and not employed could be due to variation in economic status. Different from unemployed, who mostly use the little money they can find to fulfill basic needs, those who are employed usually have disposable income to buy alcohol. Related results were reported in a Malaysian study where employed respondents were more likely to drink alcohol compared to those who were not employed [47].

Diet

The survey findings show that fruit consumption among young adult children of diabetic parents was very low compared to vegetables. This study was conducted in Lilongwe, the capital city of Malawi; as it is an urban area, one must buy almost everything to eat. With the low economic status of most Malawians, fruit is nearly unaffordable for the majority, especially off season. Economic status negatively affects their daily fruit consumption even if they have satisfactory knowledge of the benefits of adequate fruit consumption. On the other hand, vegetables are affordable for most economically disadvantaged Malawians and form part of the main meal, hence the higher rate of consumption. These results confirm the findings of the WHO Step National Survey of 2009 where fruit consumption was very low compared to consumption of vegetables in Malawi [48]. Married respondents ate more fruit and vegetables than those who were single [49]. Those who are not married bear the burden of meeting basic household needs alone. By contrast, in a family, the couple usually share financial responsibility which helps them to have money left over for fruits and vegetables, after purchasing other basic necessities. In addition, respondents who were educated had a higher mean score, indicating a better diet than young adults in the non-educated group [50]. Educated people may be more aware of the benefits of fruit and vegetable consumption, as well as having better financial status to purchase them. Furthermore, young adult children with higher mean scores on health literacy had better fruit and vegetable consumption [51]. Adequate health literacy leads to better knowledge and awareness of diet information including food labels [52].

Body Mass Index (BMI)

Findings of this study showed no association between demographic variables and BMI of respondents. Generally, young adults are concerned about maintaining an attractive body shape through weight control regardless of other personal characteristics and that might explain the lack of significant differences in BMI observed among the respondents.

Conclusions and Recommendations

Although age, gender, and genetic factors cannot be modified to prevent diabetes, this does not mean that diabetes cannot be prevented among people with a positive family history of the disease. To the contrary, with adequate health literacy and healthier behaviors, diabetes mellitus is quite preventable. Therefore, it is important that government and healthcare professionals adopt interventions to improve the health literacy of young adult children of type 2 diabetic parents. Adequate health literacy can ultimately lead to improved health lifestyle critical for preventing or delaying the onset of diabetes. Further studies should explore health literacy and health behavior among young adult children of parents with type 2 diabetes mellitus residing in rural areas.

Declaration of Conflicts of Interest

There are no conflicts of interest with respect to the authorship, research and publication of this article.

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