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EXPLORING THE KNOWLEDGE AND AWARENESS OF DIABETES MELLITUS AMONG INHABITANTS OF HO MUNICIPALITY IN GHANA: A CROSS-SECTIONAL STUDY

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ABSTRACT

One of the fast-growing major non-communicable diseases (NCD) that poses a danger to global public health is Diabetes mellitus (DM). Trends in the incidence of DM indicate a disproportionate increase in developing countries due to current rapid demographic transitions from traditional to more westernized and urbanized lifestyles. Knowledge of DM is vital for curbing or control. The objectives of this study were to evaluate the level of knowledge and awareness of DM among the Ho municipality general population, identify areas of deficiency for targeted health education efforts, and identify respondent characteristics that may be associated with knowledge of diabetes. A survey involving 132 respondents (age over 18 years) was conducted in the Ho municipality of the Volta region of Ghana. A 42-item pre-tested questionnaire was administered to participants to evaluate general and specific knowledge and awareness of DM. The Pairwise Multiple Comparison and Fisher's Exact tests were used to test the hypotheses and associations between the respondents' knowledge level and groups respectively. Of the 132 respondents, 22% were in the age range of 40-46 years; 72.7% were female. Mean over all diabetes knowledge composite score was poor: 32.99% (CI; 27.5, 38.5). Respondents performed best in the symptoms section: mean score was 36.247% (CI; 29.0, 43.4); and worst in the section on complications: mean score was 30.909% (CI; 23.6, 38.2). In multiple linear regression analyses, education level, older age, own self having diabetes, and having a family member/relative/friend with diabetes were significantly associated with knowledge of diabetes. Knowledge of diabetes among the inhabitants of Ho municipality respondents was interpreted as being inadequate 32.99% (CI; 27.5, 38.5). Some deficient portions and factors associated with knowledge of diabetes were identified. Relevant information for targeted health education programs in Ghana and beyond may be considered as one of such benefits of these findings.

Key words*:* Knowledge, awareness, diabetes, attitude, perceptions, Ho, Volta Region, Ghana

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INTRODUCTION

Diabetes mellitus (DM) is a chronic metabolic disorder that affects adequate storage and usage of glucose in the blood, causing hyperglycemia. Diabetes mellitus may lead over time to serious damage to the heart, blood vessels, eyes, kidneys and nerves [1]. Again, the American Diabetes Association [2] describes it as a group of metabolic diseases characterized by hyperglycaemia resulting from defects in insulin secretion, insulin action, or both. The three main forms in which DM occurs are the type 1, type 2 and gestational diabetes (GD). Other sub-classification of DM includes latent autoimmune diabetes of adulthood, maturity-onset diabetes of the young (MODY), diseases of the exocrine pancreas (cystic fibrosis and pancreatitis), neonatal diabetes, and drug or chemical induced diabetes (glucocorticoid use) [3]. Type 1 and Type 2 DM are the major subtypes, each with different pathophysiology, presentation, and management, but both with a potential for hyperglycaemia [4]. Type 1 Diabetes Mellitus (T1DM) is characterized by the destruction of beta cells in the pancreas, typically secondary to an autoimmune process. The result is the absolute destruction of beta cells, and consequentially, insulin is absent or extremely low [4]. Globally, Eight percent of people living with diabetes have T1DM [5]. The causes of Type 1 diabetes, while not known, may be diverse such as autoimmune, genetic or environmental [6]. Symptoms include frequent urination (polyuria), excessive thirst (polydipsia), constant hunger, weight loss, very dry skin, vision changes and fatigue [6].

Type 2 diabetes mellitus (T2DM) is due to a progressive loss of adequate β cell insulin secretion frequently on the background of insulin resistance. Type 2 diabetes mellitus (T2DM) involves a more insidious onset where an imbalance between insulin levels and insulin sensitivity causes a functional deficit of insulin. Insulin resistance is multifactorial but commonly develops from obesity and aging [4]. About 90% of people in the world living with diabetes have T2DM [5]. Risk factors for T2DM are overweight/obesity, family history of T2DM, tobacco use, excess alcohol intake, prior history of gestational diabetes, impaired glucose tolerance and physical inactivity [6]. Some of the symptoms related to T2DM may be similar to those of T1DM, but are often less marked. As a result, the disease may be diagnosed several years after onset, once complications have already arisen. Impaired glucose tolerance and impaired fasting glycaemia are intermediate conditions and risk categories for future development of DM [5]. Gestational diabetes (GD) is usually diagnosed in the second or third trimester of pregnancy in a patient that was not clearly overt diabetic before gestation. It may be characterized by a marked insulin resistance secondary to placental hormonal release [2]. Reported cases of GD range from 2% to 10% of pregnancies in the United States of America [3, 7].

Despite several education and awareness on diabetes in Ghana, previous studies conducted by a handful of researchers [8, 9] on the knowledge and management including health education of the disease suggested an inadequate or low level of knowledge. Hence its effect is apparent on the escalating prevalence of the disease in Ghana [10, 11].

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Information on the level of public knowledge of diabetes will be beneficial in planning an effective educational program. There is also paucity of published data regarding the knowledge of diabetes in Ghana.

MATERIALS AND METHODS

Sample Size Determination

For the period of three months of data collection, the total expected study population was 240. A minimum acceptable sample size of 130 at 95% confidence level, 5% allowable error, and a response distribution of 50% were calculated. The Roasoft online sample size calculator was employed (www.raosoft.com).

Sampling

A cross-sectional survey was conducted on the inhabitants of Ho municipality of Ghana for all classes of people which covered a period of October to December in 2018. This study was conducted to evaluate the knowledge, perception and attitude on diabetes. The instructions of the survey were explained to the respondents before starting to answer the questions. Response options of 'Yes', 'No' or 'Not sure' were answered by the respondents. Questions of the pre-tested modified closed ended questionnaire were used as prescribed by Al-Hussain and Mustafa [12], which consisted of seven main sections and labelled as groups D - J, with each section focusing on different aspects of diabetes mellitus. The groups are: group D: General knowledge about diabetes – consist of eight questions; group D: knowledge of risk factors of diabetes – consist of four questions; group F: knowledge of symptoms – six questions; group G: knowledge on complications – five questions; group H: knowledge about treatment and available medications – two questions; group I: knowledge about lifestyle and non-medical measures – five questions; group J: things diabetics should not do – four questions.

The study included 132 participants (36 males and 96 females) who were selected using the random sampling method. The selected sample of 132 participants was arrived at by using the data sampling command in the XLSTAT software where the list of the target population was inputted in the software. Random sampling without replacement was then executed to randomly select the 132 participants.

Statistical Methods

Statistical analysis was performed using the Statistical Package for Social Sciences, version 22.0 (SPSS Inc., Chicago, USA). Data were presented as frequencies (%) for categorical variables and mean (standard deviation) or median (range) for continuous variables. A total score was calculated by adding the scores for all 34 questions after giving score 1 for correct answer and 0 for wrong or not sure answers. A total of 132 participants were selected. The results presented are for the 132 participants. Scores of <50%, 50% to <80%, and 80% were classified as "poor," "fair," and "good," knowledge and attitude towards diabetes mellitus respectively, according to [12]. Domain scores were also calculated for the 5 domains: general knowledge, risk factors, symptoms and complications, treatment and management, and monitoring. Respondents who had an average composite score of 50% or more were classified as having adequate knowledge about diabetes. Also, respondents with average composite

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scores of less than 50% were classified as having inadequate knowledge about diabetes. Associations were established using Pearson's chi-squared tests.

In order to appraise the differences in level of knowledge of diabetes amongst the different categories of demographic characteristics, the chi-square test of goodness of fit (for composite score percentages) was used [13].

Usually, to compare more than two population means, the Fisher Exact Test was used for normal quantitative data whilst Kruskal-Wallis test is used for non-normal or ranked data. The chi-square test of goodness of fit (for composite score percentages) is used because the data are categorized. The objective of the chi-square test is to test whether the k independent sample proportions (P_i; i = 1, 2 …, k) are statistically the same. That is, the null hypothesis that the composite score percentages for the various (k) independent groups are the same ($P_1 = P_2 = P_3 = \ldots = P_k$) is tested against the alternative hypothesis that at least two of the population proportions are the different [10]

The Pairwise Multiple Comparison

After testing the significance difference in k sample proportions, pairwise tests were performed to test the hypotheses: H_0: $P_i = P_J$ (composite score proportion in a group is statistically the same as another group) versus H_0: $P_i \neq P_J$ (composite score proportion in a group is not statistically the same as another group) where $i \neq j$ using the Marasscuilo method for multiple comparisons. The Marascuilo procedure for multiple comparisons is used as a post-hoc analysis after chi-square test of equality of proportions show significant differences. Groups were identified by alphabets. Groups with the same alphabet signify a non-significant difference between them and with different alphabets representation signifying a significant difference.

Fisher Exact test

The Fisher exact test was conducted to assess if an association exists between respondents' knowledge level about diabetes (Adequate, Inadequate) and the different demographic groups of the respondents.

Ethical issues

Ethical clearance was obtained from the Research and Ethics Committee of University of Health and Allied Sciences (REC-UHAS), Ghana. Subjects 18 years and above signed an informed consent form.

RESULTS AND DISCUSSION

Table 1 shows the socio-demographic results of the respondents Out of a total of 132 participants, a greater majority 96 (72.7%) were females while the rest were males. The age group of 54-60 years with 41(31.1%) constituted most of the participants. Most participants were married 54(41.2%) while only 1(8%) person cohabited with their partner. Majority of the participants are from monogamous families 117 (89.3%) and the family size in the range of 4-7 (55.0%) constituted the majority. The level of education of most of the participants were of the Junior High School (JHS) and Senior

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High School (SHS) levels with 49(37.1%) and 50(37.9%) respectively. Trading was the most dominant 65 (49.2%) form of occupation recorded among the respondents while the minority 7 (5.3%) were students.

Knowledge of the respondents in terms of the socio demographics revealed that there was inadequate knowledge and no associations for all parameters investigated namely gender, age, marital status, family setting, household size, gender of household and occupation and there were no statistical differences ($p>0.050$) observed. However, statistical difference ($p<0.050$) was observed in educational level with regards to knowledge adequacy of diabetes (Table 2).

Table 3 describes the score for diabetes knowledge as influenced by gender. This had a range of 26.39-36.11%. Statistically, knowledge level in all the categories of diabetes questions by each gender was comparable ($p>0.050$). For all the age ranges, knowledge level was in the range of 18.75-63.64% in all the categories and showed some significant difference ($p<0.050$). Educational level also had some effect on the knowledge levels of the respondents. Generally, their scores ranged from 11.43-57.50%. Significant differences ($p<0.050$) was observed in those who had non-formal, senior high and tertiary levels of education. However, junior high school level showed no significant difference ($p<0.050$). For occupation, the general scores were between 15.63-57.14%. Significant differences ($p<0.050$) were recorded for farmers, students, and unemployed. There were no significant differences ($p>0.050$) observed among the traders/artisans. Marital status also influenced knowledge in diabetes. Their scores ranged from 0.00-100%. All the various categories showed significant differences ($p<0.050$) except for the married category. Household size recorded a score range of 21.43-41.82%. There was no statistical difference ($p>0.050$) in the responses given by categories of household size. Lastly for gender of head of household, the score range was between 27.71- 48.89%. Significant differences were observed in the female while non-significant difference was observed in the males. The overall composite score on the knowledge of diabetes among the inhabitants of Ho municipality was 33.0 % C.I. (27.454, 38.544) which is interpreted as inadequate (Table 4). Prevalence of diabetes which was obtained by asking respondents about diabetes status was 9.1% CI (5.3, 15.2) (Table 4).

Figures 1-7 and F group described the knowledge of respondents on various categories of questions asked. On the general knowledge ('D' group) on diabetes, the response 'yes' was the modal response in 1/8 (12.5%) questions (Fig.1). Out of the total of four (4) questions asked on risk factors ('E' group) the response 'yes' was the modal response in 0/4 (0%) of the questions (Fig. 2). Knowledge on symptoms ('F' group) revealed that the response 'yes' was the modal response in 2/6 (33.3%) questions asked (Fig. 3). Complications ('G' group) associated with diabetes was also tested and the response 'yes' was the modal response in 0/5 (0%) questions (Fig. 4). On medications available ('H 'group) 'yes' was the modal response in 0/2 (0%) of the questions (Fig. 5). Lifestyle and non-medical measures and things diabetics should not do corresponding to 'I' and 'J' groups, respectively, recorded 'yes' as the modal response in 0/5 and 0/4 questions, respectively.

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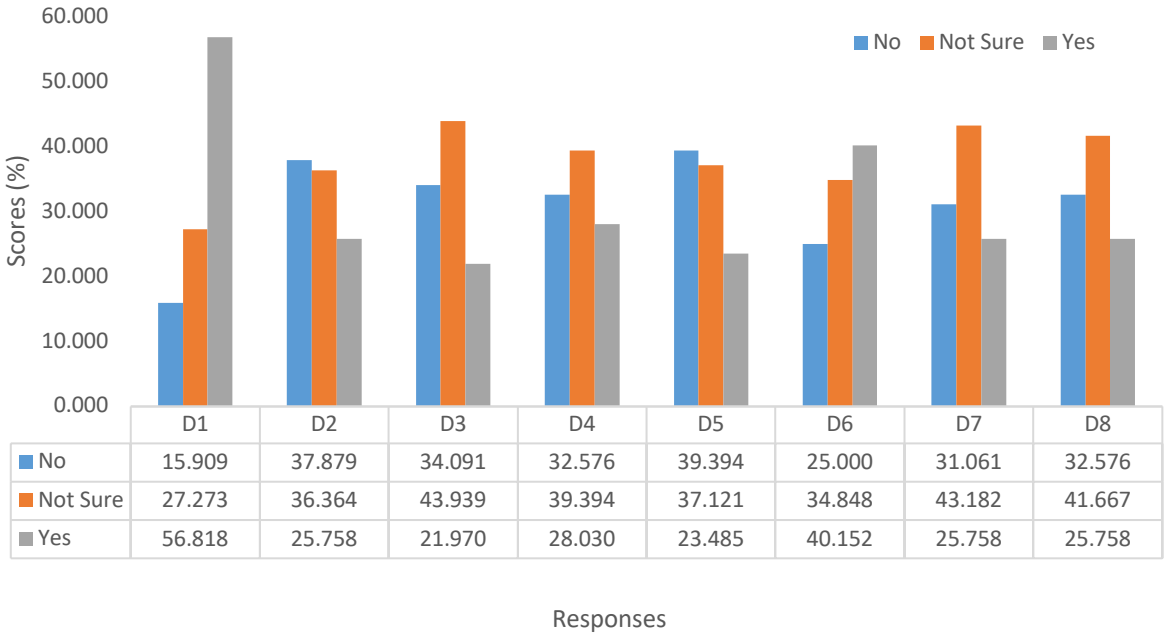
Associations of the composite scores of the categories of knowledge on diabetes as analyzed by Spearman's correlation test revealed that there were significant ($p<0.050$) associations for all groupings tested (Table 6).

Prevalence of diabetes and its accompanying cardiovascular diseases such as hypertension is an increasing problem, particularly in sub-Saharan Africa [9].

Aikins [14] observed a steady increase from the earliest studies in the 1960s and recorded 0.2 % prevalence in a population of Ghanaian men in Ho. Presently, the prevalence of 9.1% obtained in the study from responses given in this study was higher than published findings of Gatimu *et al.* [15] who reported a prevalence of 3.95% and [16] who also reported 6.46% in Ghana.



	D1	D2	D3	D4	D5	D6	D7	D8
No	15.909	37.879	34.091	32.576	39.394	25.000	31.061	32.576
Not Sure	27.273	36.364	43.939	39.394	37.121	34.848	43.182	41.667
Yes	56.818	25.758	21.970	28.030	23.485	40.152	25.758	25.758

Figure 1: Respondents' general knowledge about diabetes

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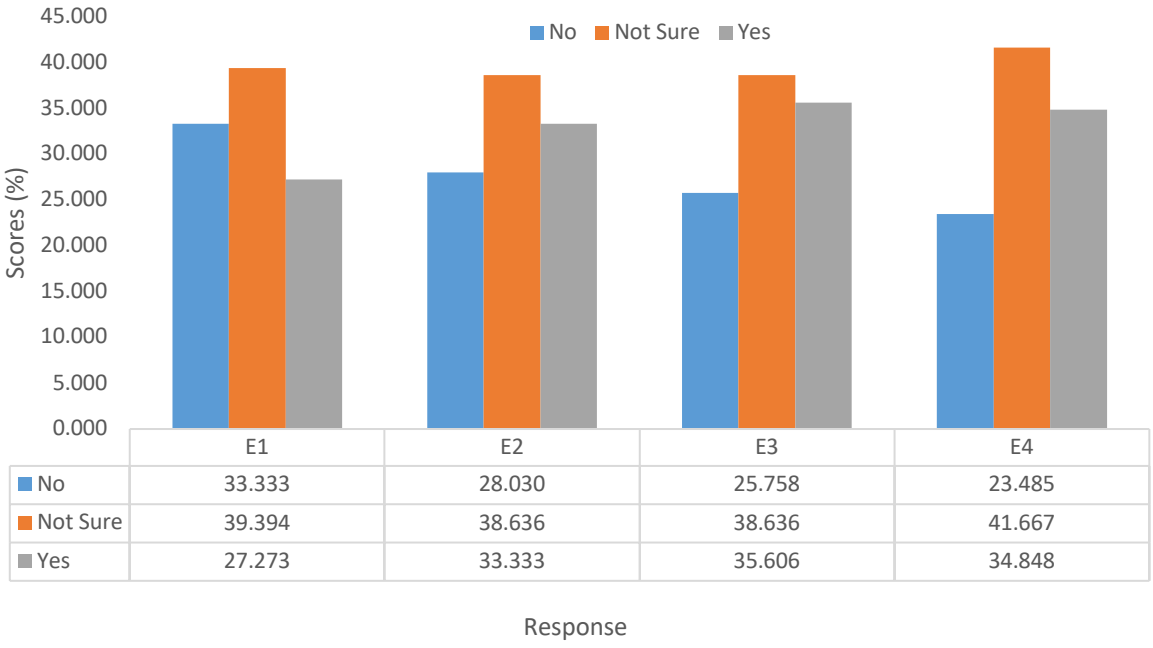
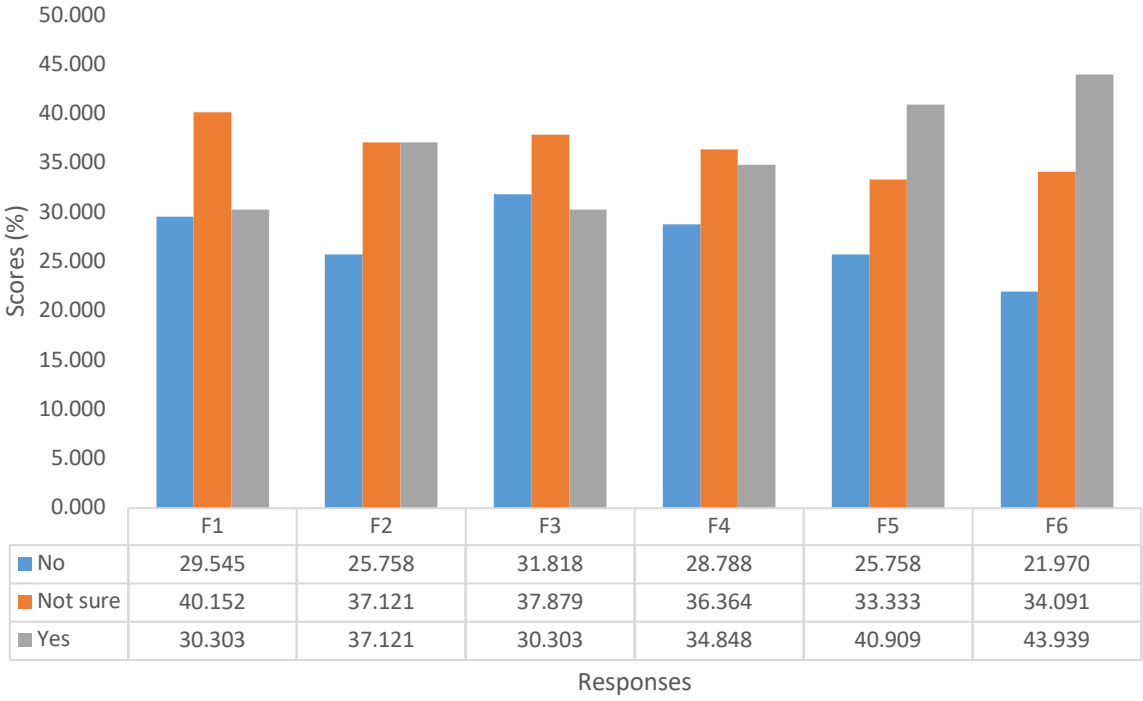


	E1	E2	E3	E4
No	33.333	28.030	25.758	23.485
Not Sure	39.394	38.636	38.636	41.667
Yes	27.273	33.333	35.606	34.848

Figure 2: Respondents' knowledge about diabetes' risk factors



	F1	F2	F3	F4	F5	F6
No	29.545	25.758	31.818	28.788	25.758	21.970
Not sure	40.152	37.121	37.879	36.364	33.333	34.091
Yes	30.303	37.121	30.303	34.848	40.909	43.939

Figure 3: Respondents' knowledge about symptoms associated with diabetes

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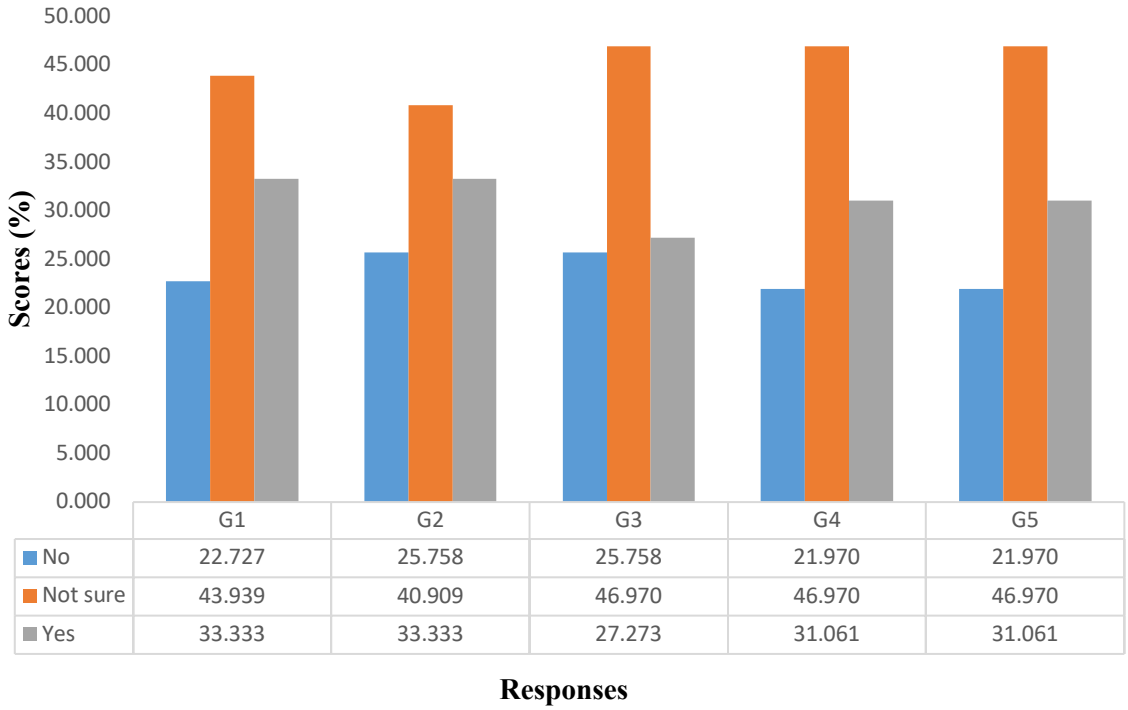
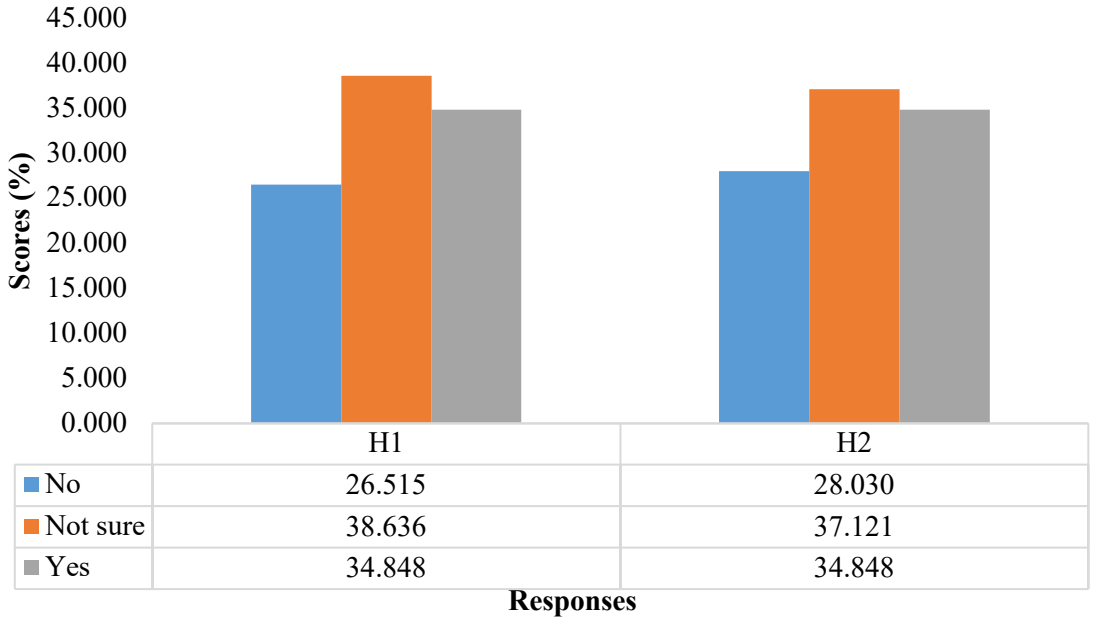


	G1	G2	G3	G4	G5
No	22.727	25.758	25.758	21.970	21.970
Not sure	43.939	40.909	46.970	46.970	46.970
Yes	33.333	33.333	27.273	31.061	31.061

Figure 4: Respondents' knowledge about complications associated with diabetes



	H1	H2
No	26.515	28.030
Not sure	38.636	37.121
Yes	34.848	34.848

Figure 5: Respondents' knowledge regarding medication available for treating people with diabetes

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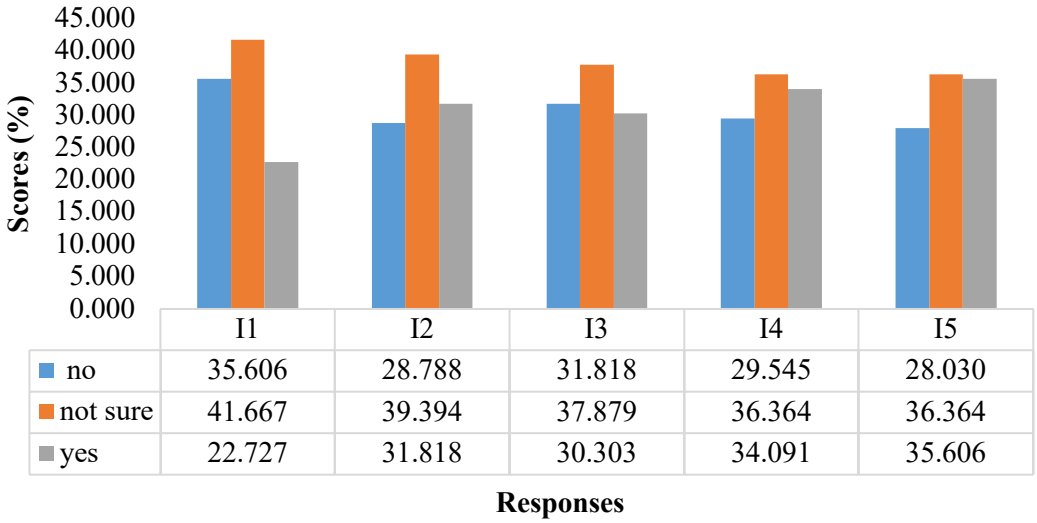
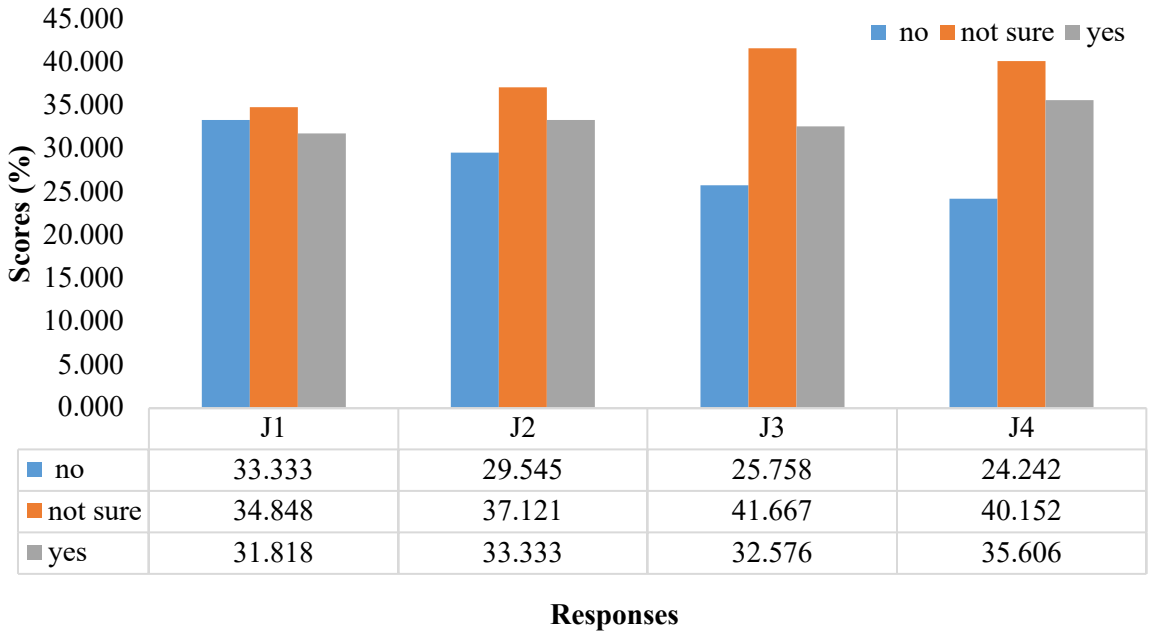


	I1	I2	I3	I4	I5
no	35.606	28.788	31.818	29.545	28.030
not sure	41.667	39.394	37.879	36.364	36.364
yes	22.727	31.818	30.303	34.091	35.606

Figure 6: Respondents' knowledge regarding lifestyle and non-medical measures about diabetes



	J1	J2	J3	J4
no	33.333	29.545	25.758	24.242
not sure	34.848	37.121	41.667	40.152
yes	31.818	33.333	32.576	35.606

Figure 7: Respondents' knowledge regarding things a diabetic should not do

Knowledge and effective management of the diabetes disease can greatly influence the risks of developing diabetes-related complications [17]. Precise information received from healthcare providers and other information sources such as media, health bulletins and the internet play an important role in the dissemination process. The accuracy of the information received, literacy level of a population, established misbelieves in the community as well as the level of effective communication by the health care provider [18] also play significant roles. Hjehlm and Mufunda [19] and Mufunda *et al.* [20] noticed that beliefs about health and illness, depending on knowledge of the disease, also affect self-care and health-seeking behavior.

Results from our study revealed that knowledge on diabetes was apparently not adequate (32.99%) (Table 4) among the inhabitants of Ho municipality in Ghana which corroborates published findings of previous studies conducted in both developed and developing countries [20, 25, 27]. Jayawickrama and Perera [21] reported a poor to very poor knowledge in diabetes from suburb in Sri-Lanka. In a related study in Ghana, [22] also ranked low (<40%) the level of knowledge on diabetes in school management level in Ghana. Recently, Mufunda *et al.* [23] reported diabetes knowledge in a more general Zimbabwean population, and found a low level of diabetes knowledge independent of educational level.

Studies that point otherwise, are uncommon because knowledge on the subject matter may not depend on educational level but rather frequent education. General knowledge on diabetes is enhanced by the organization of workshops, conferences, seminars and health talk on health-related issues and also if we take advantage of technology to educate ourselves via *WhatsApp,* social media and some others to the advantage of those who have access to them. The risks of developing diabetes-related complications are influenced by the patient's knowledge and management of the disease [23, 24]. Beliefs about health and illness, depending on knowledge of the disease, also affect self-care and health-seeking behaviour. Recently, Mufunda *et al.* [23] reported limited knowledge of diabetes in Zimbabwean adults with diabetes mellitus.

Contrary to our findings, Herath *et al.* [25] reported an above moderate to good level of knowledge of diabetes mellitus in participants from a study in Sri-Lanka. Al-Hussaini and Mustafa [8] also reported good overall knowledge and awareness in diabetes among adolescents in Kuwait. From Thailand, Pongmesa *et al.* [26] also reported a fair knowledge (50-80%) in diabetes in the central region of Thailand. Furthermore, from Malaysia, Chinnappan *et al.* [27] also ranked inhabitants of urban areas of Klang district as having good knowledge about diabetes (70%).

Pertaining to gender, results of this study disagreed with findings of Nisar *et al.* [17] in which male participants of the study, had adequate knowledge of diabetic complications compared to their female counterparts in Pakistan. In another related study conducted by Hawthorne and Tomlins [28] in rural Northwest of Pakistan, greater proportion of males had better indulgence of diabetes symptoms, signs and complication as compared to females. The disparity in knowledge in diabetes in these different geographical areas could be attributed to the access to information via mass

media and health promotion with the assistance of technological advancement of gadgets and equipment.

Healthy diet, regular physical activity, maintaining a normal body weight and avoiding usage of tobacco are some proven ways to prevent or delay the onset of type 2 diabetes. Its treatment and consequences can also be avoided or delayed with diet, physical activity, medication and regular screening and treatment for complications.

In conclusion, knowledge of diabetes among the respondents in the Ho municipality was inadequate 32.99% (95% CI; 27.5, 38.5). Some gaps and factors associated with knowledge of diabetes were identified. The findings will be valuable in informing targeted health education programs. Furthermore, measures should be put in place to increase the public's awareness and knowledge level of diabetes

Competing interests
Authors declare no competing interest.

Authors' contributions
JA-A, NKK, SN, and AK-D performed the experiments and wrote the manuscript. NKK, SN, PDA, EA and COT were responsible for data collection and analysis. PCA, NKK, JA-A, AK-D and COT helped conceive the experiments and prepared the manuscript. NKK, EKE, DM and SYL conceived the original study. DM, PCA, AK-D, EBN, NKO, and NKK led the sampling and study in Ghana. All authors read and approved the final manuscript.

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Table 1: Socio-demographics of the respondents

Variables	Categories	Frequency	%
Gender	Male	36	27.3%
	Female	96	72.7%
Age	<25	12	9.1%
	25-29	7	5.3%
	30-34	10	7.6%
	35-39	10	7.6%
	40-44	22	16.7%
	45-49	20	15.2%
	50-54	14	10.6%
	55-59	37	28.0%
Marital Status	Married	54	41.2%
	Single	48	36.6%
	Cohabitation	1	0.8%
	Separated	17	13.0%
	Widowed	11	8.4%
Family Setting	Polygamy	13	9.9%
	Monogamy	117	89.3%
	Others specify	1	0.8%
Household size	2-3	36	27.3%
	4-7	55	41.7%
	8-10	20	15.2%
	>10	21	15.9%
Gender of Head of household	Male	96	72.7%
	Female	36	27.3%
Educational level	No formal education	12	9.1%
	JHS	49	37.1%
	SHS	51	38.6%
	Tertiary	20	15.2%
Occupation	farmer	8	6.1%
	Trader/Artisan	65	49.2%
	Student	7	5.3%
	Unemployed	21	15.9%
	Civil servant	31	23.5%

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Table 2: Fishers Exact tests

		Knowledge level		
		Adequate Count	Inadequate Count	Fishers Exact Test P Values
Gender	Male	10	26	0.5345
	Female	34	62	
Age	<25	5	7	0.5535
	25-29	3	4	
	30-34	4	6	
	35-39	3	7	
	40-44	9	13	
	45-49	9	11	
	50-54	6	8	
	55-59	15	22	
	45-49	9	11	
Marital Status	married	22	33	0.269
	separated	3	14	
	single	17	32	
	widowed	2	9	
Family Setting	Polygamy	3	10	0.694
	Monogamy	40	77	
	Others specify	0	1	
Household size	2-3	13	23	0.853
	4-7	19	36	
	8-10	5	15	
	>10	7	14	
Gender of Head of household	Male	26	70	**0.022***
	Female	18	18	
Educational level	no formal education	2	10	**< 0.0001****
	Jhs	5	44	
	Shs	26	25	
	Tertiary	11	9	
Occupation	farmer	3	5	0.271
	Trader/Artisan	16	49	
	Student	2	5	
	unemployment	9	12	
	Worker	14	17	

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Table 3: Overall composite scores for knowledge on diabetes by the socio-demographics of the respondents

		score
		Overall Mean composite score (%)
Gender	male	30.15
	female	34.07
Age	<25	38.23
	25-29	37.23
	30-34	38.43
	35-39	36.77
	40-44	30.36
	45-49	28.43
	50-54	29.67
	55-59	31.99
Marital Status	married	39.04
	separated	18.16
		34.39
	single	19.52
	widowed	19.52
Family Setting	polygamy	31.67
	monogamy	32.55
	others specify	41.18
Household size	2-3	33.90
	4-7	34.01
	8-10	30.88
	>10	30.81
Gender of Head of household	male	29.01
	female	43.63
Educational level	no formal education	17.16
	JHS	18.67
	SHS	42.73
	Tertiary	52.79
Occupation	farmer	29.04
	Trader/Artisan	26.24
	Student	38.66
	unemployment	37.95
	Worker	43.55

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Table 4: Scores of the various knowledge categories and overall composite score and prevalence of diabetes in Ho municipality

Sample	No. of observations	Mean (%)	Lower bound on mean (95%)	Upper bound on mean (95%)
General Knowledge of diabetes	132	31.061	25.448	36.674
Risk Factors	132	32.765	25.787	39.743
Symptoms	132	36.237	29.044	43.430
Complications	132	30.909	23.621	38.197
Medications Available	132	34.848	26.822	42.875
Lifestyle and non-medical measures	132	33.485	27.415	39.555
Things diabetics should not do	132	33.333	25.837	40.830
Overall composite score	132	32.999	27.454	38.544
Prevalence (%)	**95% CI on the proportion (%)**			
9.1			(5.3, 15.2)	

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Table 5: Influence of socio-demographic factors on composite scores of knowledge categories

			D_composite_Score	E_Compsite_Score	F_Compsite_Score	G_Composite_Score	H_Composite_Score	I_Composite_Score	J_Compsite_Score
Gender	male	%	34.03[a]	27.08[a]	31.94[a]	26.67[a]	36.11[a]	28.33[a]	26.39[a]
	female	%	29.95[a]	34.90[a]	37.85[a]	32.50[a]	34.38[a]	35.42[a]	35.94[a]
Age	< 25	%	39.58 a,b	33.33 a	41.67 a	30.00 a	58.33 a	35 a	39.58 a
	25-39	%	38.46 b	34.61 a	34.61 a	34.61 a	42.31 a	42.31 a	46.15 a
	40 -54	%	22.41 a	31.13 a	34.91 a	31.32 a	31.13 a	32.08 a	28.31 a
	> 54	%	35.06 a,b	33.54 a	37.39 a	28.29 a	28.05 a	29.27 a	29.87 a
Educational level	no formal education	%	13.54[a]	18.75[a,b]	19.44[a]	15.00[a]	25.00[a,b]	20.00[a]	14.58[a]
	Jhs	%	21.94[a]	22.96[a]	20.07[a]	11.43[a]	19.39[a]	17.96[a]	15.31[a]
	Shs	%	35.78[b]	38.73[b,c]	47.39[b]	43.92[b]	44.12[b]	46.27[b]	47.06[b]
	Tertiary	%	51.87[b]	50.00[c]	57.50[b]	55.00[b]	55.00[b,c]	47.00[b]	53.75[b]
Occupation	farmer	%	15.63[a]	25.00[a]	35.42[a]	35.00[a,b]	37.50[a,b]	37.50[a]	28.13[a,b]
	Trader/ Artisan	%	24.04[a]	28.46[a]	31.54[a]	23.08[a]	23.08[a]	26.77[a]	25.38[a]
	Student	%	41.07[a,b]	32.14[a]	40.48[a]	34.29[a,b]	57.14[a,b]	34.29[a]	39.29[a,b]
	unemployment	%	33.33[a,b]	32.14[a]	38.10[a]	33.33[a,b]	45.24[a,b]	41.90[a]	50.00[b]
	Worker	%	45.97[b]	44.35[a]	44.09[a]	43.87[b]	46.77[b]	40.65[a]	38.71[a,b]
Marital Status	married	%	33.18 a	40 b	47.27 b	38.9 a	39.09 a,b	37.45 b	39.54 a
	separated	%	24.26 a	14.70 a	19.60 a	17.64 a	8.82 a	15.29 a	16.17 a
	single	%	34.69 a	35.20 a,b	31.63 a,b	29.79 a	42.85 b	37.14 b	35.2 a
	widowed	%	14.77 a	13.63 a,b	27.27 a,b	16.36 a	18.18 a,b	25.45 a,b	20.45 a
Household size	2 - 3	%	33.33[a]	36.81[a]	35.65[a]	28.33[a]	36.11[a]	37.22[a]	31.25[a]
	4 - 7	%	29.55[a]	29.55[a]	37.58[a]	35.27[a]	41.82[a]	34.91[a]	35.45[a]
	8 - 10	%	35.00[a]	26.25[a]	30.00[a]	30.00[a]	27.50[a]	34.00[a]	27.50[a]
	>10	%	27.38[a]	40.48[a]	39.68[a]	24.76[a]	21.43[a]	22.86[a]	36.90[a]
Gender of Head of household	male	%	29.82[a]	30.47[a]	31.77[a]	25.62[a]	28.13[a]	27.71[a]	28.13[a]
	female	%	34.38[a]	38.89[a]	48.15[b]	45.00[b]	52.78[b]	48.89[b]	47.22[b]

Note: Values in the same row and subtable not sharing the same subscript are significantly different at **p < .05** in the two-sided test of equality for column means. Cells with no subscript are not included in the test. Tests assume equal variances

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