Retrospective Study the Prevalence of Diabetes Mellitus and Associated Factors in Babylon Governorate/Iraq

Ekhlass H.Alasade[1]MohammedMalih Radhi [2],GhusoonHameedZamil[3], Nada Khazal Kadhim Hindi[4]

1. PhD in physiology, Department of physiology, College of Medicine, Babylon University, Babylon Province, Iraq). Email: ewasa_fam@yahoo.com
2. (Community Health Nursing, Kut Technical Institute/ Middle Technical University- Iraq). Email:mohammed.amri92@gmail,com
3. B. Sc Health Nursing/ Diabetes and Endocrinology Center, Babylon Health Directorate- Iraq) Email:ghusoonhamied@gmail.com
4. Prof. **,** PhD in microbiology, Department of Basic and Medical Science, College of Nursing, Babylon University, Babylon Province, Iraq). Email: nadakhazal@yahoo.com

.

Abstract

Diabetes is a condition that presents itself in lifestyle disorders such as hypertension. Many of these disorders are caused by the wrongdoings of others. The study aims at determine the types of diabetes mellitus and its relationship with their risks factors as age and gender of infected people.Methodology: A non-probability (convenience sample) of 3226 subject were collected retrospectively through the used medical records as a statistic for one year. The statistic data were include (types of diabetes, patients age, gender diet, BMI, and blood pressure)."Data are analyzed through the application of descriptive and inferential statistical data analysis approach that includes, frequencies, percentages; and Chi-squared test". Results: According to recent estimates, 23.6 percent of those over 65 years old are diagnosed with diabetes, with 50.1 percent of those diagnosed being male. People's age and gender have been linked to diabetic forms with a p-value of 0.01. Conclusion: Males in their forties and fifties who were diagnosed with diabetes mellitus had type 2 diabetes. Age, gender, BMI, and blood pressure have all had an effect on type 2 diabetic patients. There is a need to raise public consciousness about type 2 diabetes in the general population. Health education about diabetes risk factors must be prioritized. Awareness of early screening methods is needed.

Key-wards: Prevalence, Diabetes Mellitus, Associated Factors.

INTRODUCTION

Health has become a lexicon that defines a happy life, and its direct and powerful effect on various aspects of life (production, consumption, lifestyle, education, political programs, etc.) has made it a reliable predictor of a society's level of growth [1]. Idealism is not associated with wellbeing. When an individual is able to successfully establish social relationships, reconcile and integrate with members of his culture, and adapt his private life to the dynamic and diverse circumstances of the ocean, it can be said that he is well [2].Individual self-determination and the balancing of biological, genetic, physical, and psychological potentials are also important. Integrating and managing these variables is what wellbeing is all about. In the case of disease, the body recognizes the individual danger, acute disease is the threat once and then the body returns to normal, but in the case of chronic illness, the physical threat and physical limitations remain, but the body returns to normal[3].

According to the International Federation of Diabetes, there will be 552 million people with type 2 diabetes worldwide by 2030, more than double the figure in 2000[4]. India, which has the highest number

of cases of any region, will account for nearly 21% of the new cases. Diabetes affects 61.3 million people in India, with the number projected to increase to 103 million by 2030 [5]. Several studies from various parts of India have shown that the prevalence of type 2 diabetes is growing in urban areas, from 8.2 percent in 1992 to 18.6 percent in 2008, and in rural areas, from 2.4 percent in 1992 to 9.2 percent in 2008[6]. Is related to the increasing proliferation of developing countries, industrialization, urbanization, and social and economic growth, and relates to both genetic and environmental factors such as quality of life and lifestyle [7].

METHODOLOGY

The aim of the study is to establish the different forms of diabetes mellitus and their links to risk factors such as age and gender of infected people. In Babylon Governorate, a descriptive (retrospective) analysis using an evaluation approach was conducted to investigate the relationship between diabetic types and risk factors.For one year, a non-probability "convenience" sample was obtained retrospectively from medical records as a statistic. The statistical information included (types of diabetes, patients age, gender, diet, BMI, and blood pressure).

Methods of Statistical: "The used SPSS-ver.20 in order to analyze and evaluate the study data is used for statistical data analysis approach using. Methodology of statistical data used descriptive analysis to describe the study variables: frequencies and percentages. Statistical data analysis approach deductive: is used by applying the Chi-square test".

They $\chi^2 obs. < \chi^2 \ crit. =$ insignificantly; They$\chi^2 obs. > \chi^2 \ crit. =$ significantly
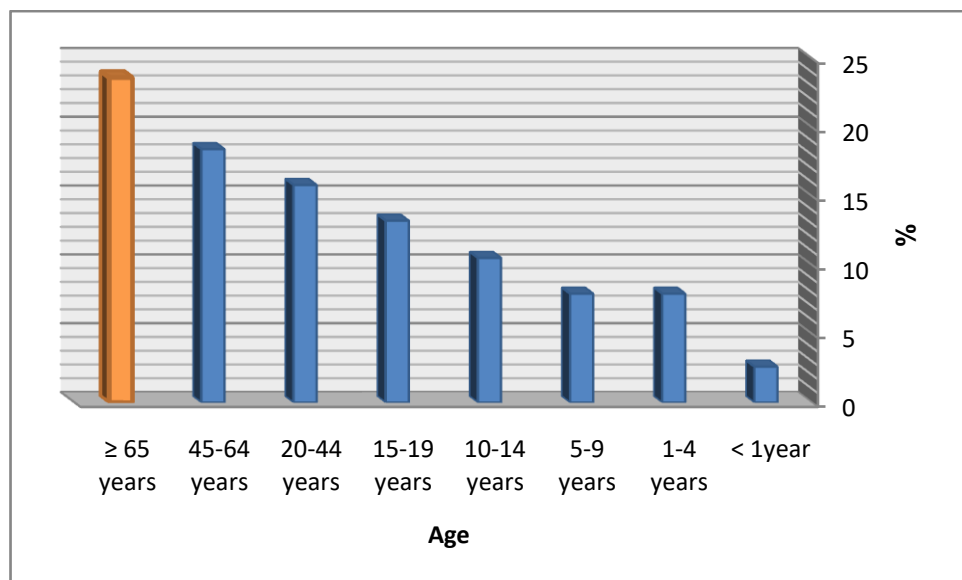
RESULTS

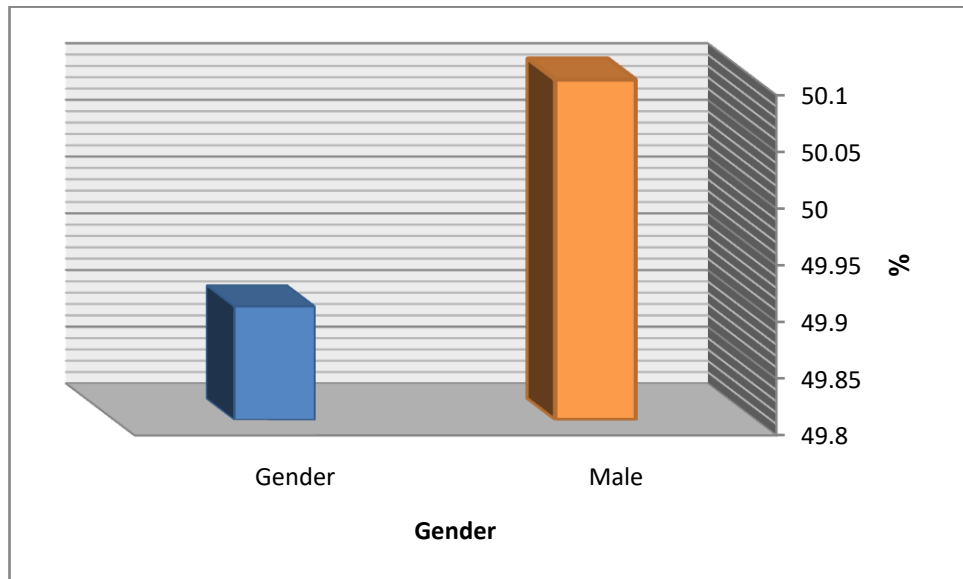Figure 1 shows the age distribution of the study participants.

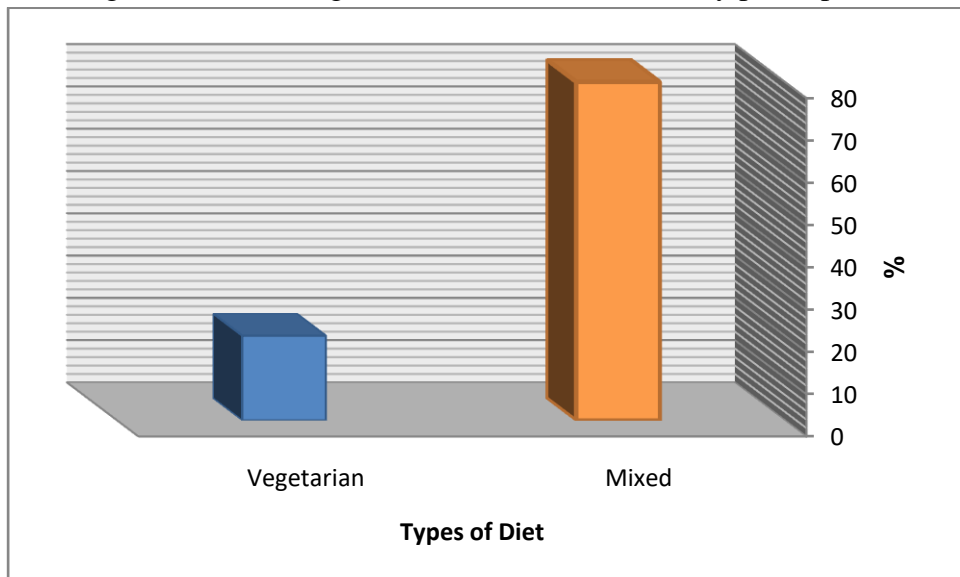Figure 2 shows the gender distribution of the study participants.

Figure 3 shows the distribution of the study sample by diet type.
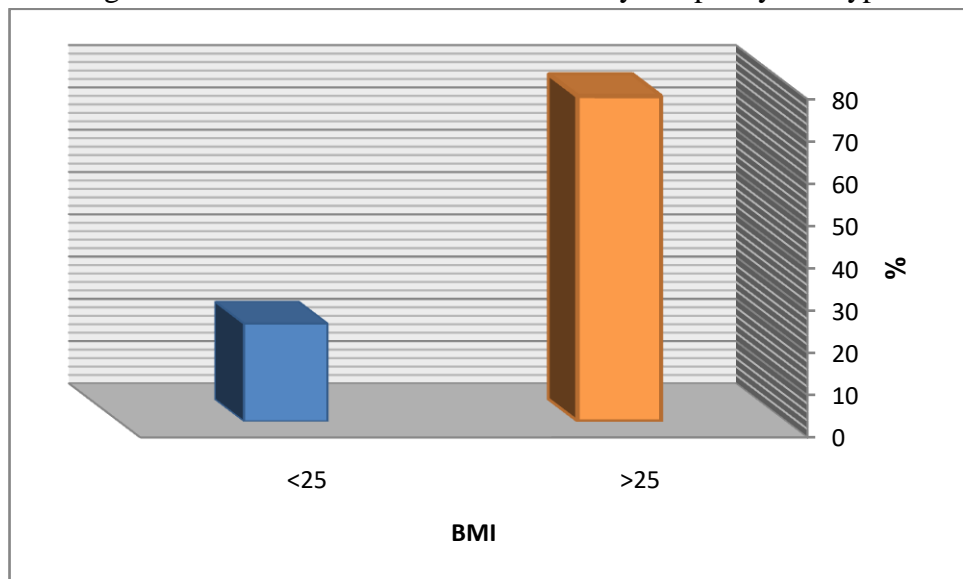

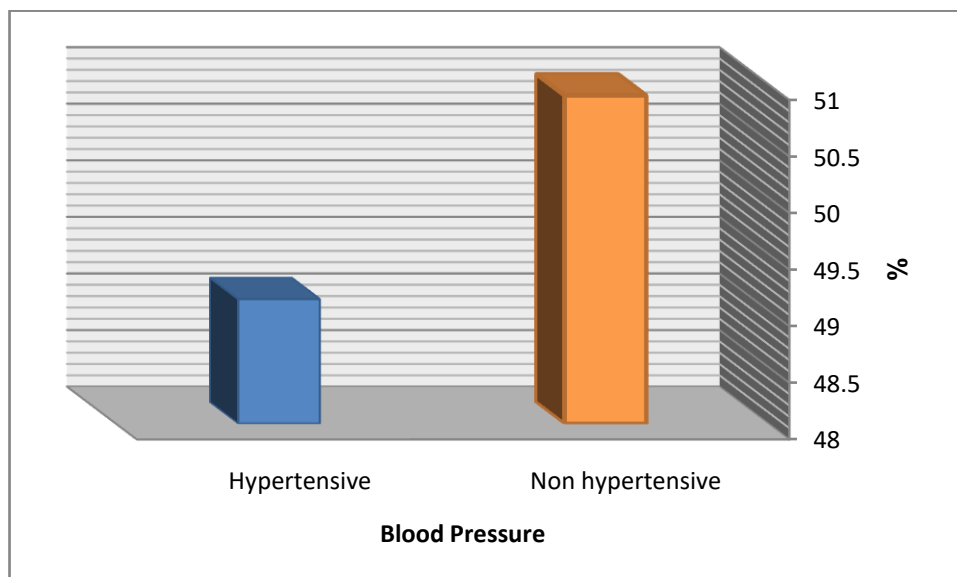Figure 4 shows the distribution of the study sample based on their MBI.

Figure 5: Blood Pressure Distribution in the Research Population
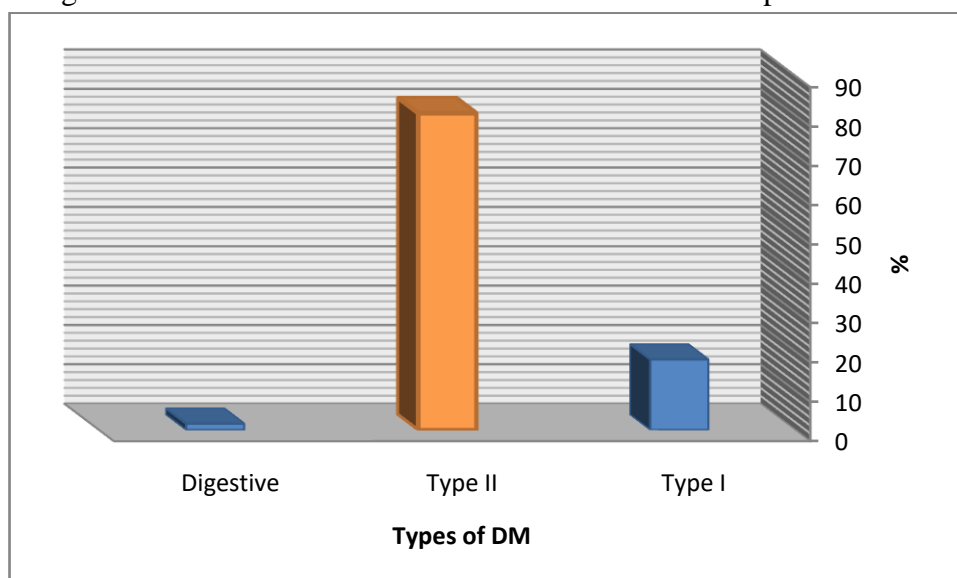
Figure 6 shows the distribution of study participants according to their DM forms.

Table 1:Statisticalrelationship between types of diabetic and age of patients

	Rating	Type of DM			Total	d. f	Sig
		Type I	Type II	Digestive			
Age	< 1year	53	32	0	85		
	1-4years	53	202	0	255		
	5-9years	106	149	0	255		χ^2obs.= 620.311 χ^2 crit.= 23.685 HS
	10-14years	106	234	0	340		
	15-19years	104	321	0	425	14	
	20-44years	104	406	0	510		
	45-64years	0	595	0	595		

	≥ 65years	52	657	52	761		
	Total	578	2596	52	3226		

"χ^2obs. = Chi-square observer, χ^2crit. = Chi-square critical, Df= Degree of freedom, S= significant, NS= non significant, HS= high significant"

The results show that a patient's age is strongly related to the type of diabetes they have *at p-value<0.01"χ^2obs. >χ^2 crit."* .

Table 2:Statisticalrelationship between types of diabetic and gender of patients

	Rating	Type of DM			Total	d. f	Sig
		Type I	Type II	Digestive			
Gender	Male	526	1089	0	1615		χ^2obs.= 508.014
	Female	52	1507	52	1611	2	
	Total	578	2596	52	3226		χ^2 crit.= 5.991 HS

"χ^2obs. = Chi-square observer, χ^2crit. = Chi-square critical, Df= Degree of freedom, S= significant, NS= non significant, HS= high significant"

The findings show that the gender of patients is strongly linked to the types of diabetes they have *at p-value ≤ 0.01"χ^2obs. >χ^2 crit."* .

Table 3:Statistical relationship between types of diabetic and diet of patients

	Rating	Type of DM			Total	d. f	Sig
		Type I	Type II	Digestive			
Diet	Mixed	463	2078	41	2582		χ^2obs.= 0.048
	Vegetarian	115	518	11	644	2	χ^2 crit.= 5.991
	Total	578	2596	52	3226		NS

"χ^2obs. = Chi-square observer, χ^2crit. = Chi-square critical, Df= Degree of freedom, S= significant, NS= non significant, HS= high significant"

The results show that patients' diets have no important relation to the forms of diabetes they have *at p-value>0.05"χ^2obs. <χ^2 crit."*

Table 4: Statistical relationship between types of diabetic and BMI of patients

	Rating	Type of DM			Total	d. f	Sig
		Type I	Type II	Digestive			
BMI	>25	417	2028	37	2482		χ^2obs.= 10.508
	<25	161	568	15	744	2	χ^2 crit.= 5.991
	Total	578	2596	52	3226		S

"χ^2obs. = Chi-square observer, χ^2crit. = Chi-square critical, Df= Degree of freedom, S= significant, NS= non significant, HS= high significant"

The findings show that a patient's BMI is strongly linked to the type of diabetes they have *at p-value≤0.05"$\chi^2 obs. > \chi^2$ crit.".*

Table 5:Statistical relationship between types of diabetic and BMI of patients

Blood Pressure	Rating	Type of DM			Total	d. f	Sig
		Type I	Type II	Digestive			
	Hypertensive	516	1068	0	1584		χ^2obs.= 489.227 χ^2 crit.= 5.991 HS
	Non hypertensive	62	1528	52	1642	2	
	Total	578	2596	52	3226		

"χ^2obs. = Chi-square observer, χ^2crit. = Chi-square critical, Df= Degree of freedom, S= significant, NS= non significant, HS= high significant"

The results show that patient blood pressure is closely related to the type of diabetes they have *at p-value<0.01"$\chi^2 obs. > \chi^2$ crit."* .

DISCUSSION

Assuring that the diabetes disorders that need a follow-up health program are still met, Since type 2 diabetes is a chronic and prevalent condition that affects roughly 90-85 percent of all diabetics, and its prevalence is alarmingly increasing, it poses a significant health burden on individuals, families, and the state in terms of care and health follow-up costs. According to the World Health Organization (WHO), there are 171 million people with diabetes worldwide, and the prevalence of the condition is rapidly increasing [8].

The majority of the study participants were over the age of 65, according to our results. The burden of diabetes increases with age, and the link between age and the prevalence of type 2 diabetes has been shown to be statistically important. In other research by Ruhembee et al. and Akinkugbe et al., the incidence of diabetes was higher in people over the age of 40, which is consistent with the current results [9, 10].

This finding is also explained by the fact that endocrine glands state that diabetes rates rise with age, obesity rates rise with lack of physical activity, and thyroid disorders are more common in women. This finding is consistent with a study that looked at the prevalence of diabetes in rural Khammam. The majority of those infected were men of a certain age, according to the results [11].

"Of the 3226 respondents who were diagnosed with diabetes, 50.1 percent were males and 49.9% were females, and the correlation of gender with diabetic was observed," according to the report, "which was consistent with other studies conducted by Chen et al and Amarsingher et al, who found that the prevalence of DM was higher in males than females"[12,13].In one study done by Ruhembee et al the prevalence of type 2 diabetes was higher in females"[9].

In present study "the distribution of type diabetes was high in non-vegetarians than vegetarians. Study done Ayana et al reported that the prevalence of diabetes mellitus was less among those who consumed fruits and vegetables ≥3 days/week as compare to who consumed fruits and vegetables ≤ 2 days /week"[14].

The majority of type DM subjects in this study were overweight, with a BMI of more than 25, and the connection between BMI and type DM was statistically significant. The results of this study were similar to those of Nyenwe et al.In a study conducted by Katibeh et al., the prevalence of systolic

hypertension among study subjects with type 2 DM was high, at 64.97 percent, compared to normal subjects (35.1 percent) [15, 16].

The prevalence of diabetes mellitus was found to be high among non-hypertensive subjects in this research, which was statistically important. Non-hypertensive people were 2 times (p=0.009) more likely to develop diabetes mellitus, according to a study by Amarsingher et al.[13].

CONCLUSIONS

Males in their forties and fifties who were diagnosed with diabetes mellitus had type 2 diabetes. Age, gender, BMI, and blood pressure have all had an effect on type 2 diabetic patients. There is a need to raise public consciousness about type 2 diabetes in the general population. Health education about diabetes risk factors must be prioritized. Awareness of early screening methods is needed.

REFERENCES

1. Mani N ,Caiola E , Fortuna R. The influence of social networks on patients' attitudes toward type ii diabetes. J Community Health, 2011;36(40):728-732.
2. Van Dam H ,van der Horst F , Knoops L , Ryckman R , Crebolder H , van den Borne B. Social support in diabetes: a systematic review of controlled intervention studies. Patient EducCouns, 2015;59(21):1-12.
3. Low L ,Tong S , Low W. Mixed feelings about the diagnosis of type 2 diabetes mellitus: a consequence of adjusting to health related quality of life. CollAntropol, 2014;38(29):11-20.
4. IDF Diabetes Atlas - International Diabetes Federation. 2011. Available at: https://www.idf.org/ e-library/epidemiology-research/diabetes-atlas.htm. Accessed on 10 February 2018.
5. World Health Organization, Regional Office for South East Asia. Health situation in the South-East Asia Region 1998-2000. New Delhi: WHOSEAR 2002. Document No. Available at: http://209.61. 208.233/LinkFiles/Health_Situation_toc+forward.pdf. Accessed on 10 February 2018.
6. Ramachandran A, Mary S, Yamuna A, Murugesan N, Snehalatha C. High prevalence of diabetes and cardiovascular risk factors associated withurbanization in India. Diabetes Care 2008;31(5):893–8.
7. Kokiwar PR, Gupta S, Durge PM. Prevalence of diabetes in rural area of central India. Int J DiabDevCtries. 2007;27(1):8-10.
8. Wild S ,Raglic G , green A ,Sucrée R,   King H. global prevalence of diabetes: estimates for the year 2000 and projections for 2030. diabetes care, 2004;30(27):1047-1053.
9. Ruhembe CC, Mosha TC, Nyaruhucha CN. Prevalence and awareness of type 2 diabetes mellitus among adult population in Mwanza city, Tanzania. Tanzan J Health Res. 2014;16:89-97.
10. Akinkugbe OO, ed. Non-Communicable Diseases in Nigeria: National Survey (Final Report) on Hypertension, Coronary Heart Disease, Diabetes Mellitus, Haemoglobinopathies, G6PD Deficiency and Anaemia. National Expert Committee on Non- Communicable Diseases. Lagos: Federal Ministry of Health and Social Services; 1997. Available from: http://www.sciepub.com/reference/124410. Accessed on 10 February 2018.
11. Nithesh K. ,Sushma K. &Ramyacharitha I.: A study to assess prevalence of diabetes mellitus and its associated risk factors among adult residents of rural Khammam. International Journal of Community Medicine and Public Health, 2018 Apr;5(4):1360-1365.
12. Chen GY, Li L, Dai F, Li XJ, Xu XX, Fan JG, et al. Prevalence of and risk factors for type 2

diabetes mellitus in hyperlipidemia in China. Med SciMonit. 2015;21:2476-84.

13. Amarasinghe S, Balakumar S, Arasaratnam V. Prevalence and risk factors of diabetes mellitus among adults in Jaffna District. Ceylon Med J. 2015;60:107-10.

14. Ayana DA, Bacha YD, Roba KT, Kebede DA. Type 2 diabetes mellitus among government employees in Harar, Eastern Ethiopia: a cross-sectional study. Research and Report in Endocrine Disorders. 2015;5:71–7.

15. Nyenwe EA, Odia OJ, Ihekwaba AE, Ojule A, Babatunde S. Nyenwe EA, et al. Type 2 diabetes in adult Nigerians: A study of its prevalence and risk factors in Port Harcourt, Nigeria. Diabetes Res ClinPract. 2003;62:177-85.

16. Katibeh M, Hosseini S, Soleimanizad R, Manaviat MR, Kheiri B, Khabazkhoob M, et al. Prevalence and risk factors of diabetes mellitus in a central district in Islamic Republic of Iran: A population- based study on adults aged 40-80 years. East Mediterr Health J. 2015;21:412-9.