ORIGINAL RESEARCH PAPER

Volume-7 | Issue-8 | August-2018 | PRINT ISSN No 2277 - 8179

INTERNATIONAL JOURNAL OF SCIENTIFIC RESEARCH

PUBLIC KNOWLEDGE AND ATTITUDE TOWARDS HYPOGLYCAEMIA IN PATIENTS WITH DIABETES IN THE EASTERN PROVINCE OF SAUDI ARABIA: 2018

Medicine

Alaa A. Al Safwani Saudi Postgraduate Family Medicine Program Eastern Province MOH

Salma M. Al Sulaiman Saudi Postgraduate Family Medicine Program Eastern Province MOH *Corresponding Author

Abdullah Al Sayigh Saudi Postgraduate Family Medicine Program Eastern Province MOH

Nada A. Al Bunaian BMBS, SBFM, ABFM Saudi Arabia MHPE, Maastricht University Holland Director of Saudi Postgraduate Family medicine program Eastern health KSA

ABSTRACT

Diabetes mellitus (DM) is a major public health concern worldwide and is associated with possibly fatal complications, including hypoglycaemia. DM is prevalent in Saudi Arabia, but public knowledge about hypoglycaemia has not been investigated. This study aimed to assess the level of knowledge and attitude towards hypoglycaemic events among the general Saudi population. A cross-sectional study was conducted among adults aged older than 18 years in the Eastern Province of Saudi Arabia. Data were collected through a self-administered questionnaire distributed in social media platforms. A total of 2208 respondents were included in the study. Of them, only 25% had sufficient knowledge score, but most participants (79%) had a positive attitude towards providing help to the hypoglycaemic individual. The level of knowledge about hypoglycaemia is insufficient among Saudis, but the majority has a positive attitude towards helping individuals during a hypoglycaemic event. A national continuous health education program to improve knowledge on DM is needed.

KEYWORDS

Diabetes Mellitus, Hypoglycaemia, Knowledge, Attitude

Background

Diabetes mellitus (DM) is a relatively common chronic disease that poses a significant public health concern. The prevalence of DM in Saudi Arabia is approximately 23% (Almutari, 2015). According to the Saudi Arabia Ministry of Health, the incidence rate of DM in 2010 was 2.7 times higher than that in 1992 (Alotaibi, 2017). The World Health Organization (WHO) projects that the prevalence of DM in Saudi Arabia will increase from 890,000 in 2000 to 2,523,000 by 2030 (Almutari, 2015).

Hypoglycaemia, which is an emergency complication of DM, is a life-threating condition that needs immediate intervention, particularly for patients on antidiabetic therapy (Umpierrez et al, 2016). The American Diabetes Association (ADA) defines hypoglycaemia as a plasma glucose level of <70 mg/dl (Elzubier, 2001). The symptoms of hypoglycaemia can be classified as autonomic (e.g., tachycardia, palpitations, shakiness, and sweating) and neuroglycopaenic (e.g., reduced concentration, blurred vision, and dizziness) (Davis & Alonso, 2004).

Hypoglycaemia affects the patients' overall well-being. It can interfere with activities of daily living, disturb mental health, and increase the risk of accidents and cardiovascular morbidity and mortality (Murata, Duckworth, Shah et al, 2004). Approximately 2% to 4% of patients diagnosed with DM die of hypoglycaemia due to excess dose of insulin (for type 1 DM) or insulin secretagogues such as sulfonylurea and glinide (for type 2 DM) (Cryer, Irene & Karl, 2004).

Mild to moderate hypoglycaemia can be treated easily and quickly using beverages or food containing simple glucose. By contrast, severe hypoglycaemia requires medical attention. The ADA has developed a simple "do/don't" guideline to assist patients during a severe hypoglycaemic attack. Briefly, the guideline is "DO NOT inject insulin, provide food or fluids, or put hands in their mouth; DO inject glucagon and call for emergency help." Glucagon is considered the first-line treatment for severe hypoglycaemia and can be given via subcutaneous or intramuscular injection by a trained personnel or caregiver (Kedia, 2017).

Literature review

Studies investigating DM awareness including hypoglycaemia have been conducted in several countries. For example, a cross-sectional survey conducted in China 2012 concluded that DM awareness was positively associated with age and was higher in participants with a family history of DM, while it was lower in smokers and alcohol drinkers (Wang, Yu, Zhang et al, 2014).

Two other studies were conducted in Pakistan and India, and both reported that majority of the participants were unaware of hypoglycaemia symptoms (Ulvi, Chaudhary, Ali et al, 2009; Gupta, Acharya, & Shukla, 2016).

Regarding studies in the Middle East, a 2014 study in Sudan found that people have limited knowledge on hypoglycaemic symptoms, but they had a positive attitude towards hypoglycaemic events (Balla, Awadelkareem, & Abu Ahmed, 2014). Another study conducted in the United Arab Emirates (UAE) in 2009 also reported that residents have limited knowledge on hypoglycaemic symptoms (Hamoudi, 2012).

Meanwhile, public knowledge about hypoglycaemia has never been researched. Although several studies have investigated knowledge about DM in Saudi Arabia, only one study assessed knowledge and attitude towards hypoglycaemia. This study was conducted in Makkah in 2001 and assessed the knowledge of hypoglycaemia only among those with DM; it found that 50% of the patients lacked knowledge (Elzubier, 2001). Another two studies investigated knowledge on hypoglycaemia, but only studied it as part of diabetes knowledge and only included those with DM and teachers. The first study in Alkobar in 2005 was among individuals with DM and showed that they had inadequate level of knowledge on hypoglycaemia and hypoglycaemic symptoms. The second study was conducted in Riyadh in 2008 and included teachers; it showed that the participants had fair level of knowledge about DM, but they did not believe they have a role in health education (Abahussain & El-Zubier, 2017; Abdel, 2008).

Methods

An analytical cross-sectional study was carried out between March and April 2018 among adults aged 18 years or older in the Eastern province of Saudi Arabia, which is the largest province by land area and the third most populous province after Makkah and Riyadh. The province has a total population of 4,780,619, and approximately 75% (3,325,815) of the residents are older than 18 years old.

A convenient sampling technique was used. The sample size was calculated by using Raosoft software based on a 95% confidence level,

5% margin of error, and 50% response distribution, and it was determined to be 385. The calculated sample size was then considered as the minimum number of participants necessary to minimize statistical error and the effect of data inflation.

Data were collected using a self-administered electronic questionnaire distributed through social media platforms. The purpose of the study was indicated on the front webpage of the questionnaire. The questionnaire comprised three parts. The first part assessed information about the socio-demographic characteristics of the participants. The second part assessed knowledge on the definition, complication, and symptoms of hypoglycaemia and basic management of a conscious and unconscious hypoglycaemic individual. The third part assesses the attitude of the participants by asking about confidence in dealing with hypoglycaemic event, desire to learn about hypoglycaemia, and attitude towards a conscious and unconscious hypoglycaemic individual.

The questionnaire was constructed from relevant literature review and international guidelines and then translated to Arabic language by researchers and revised by bilingual expert translators. The content was reviewed and approved by 10 consultants who are expert in DM. To ensure clarity of language, a pilot study was conducted in 30 participants who were then excluded from the study.

The knowledge part of the questionnaire comprises 20 questions to measure public knowledge about hypoglycaemia. A correct and incorrect answer is equal to a score of 1 and 0, respectively. The cut-off point was determined by measuring one standard deviation above and one below the mean. The mean was 12.87 and the standard deviation was 3.4. The knowledge level was then divided into three categories as follows based on the cut-off point: poor knowledge less than 9, insufficient knowledge between 9-16, and sufficient knowledge in the score more than 16. The attitude part of the questionnaire is a 3-point Likert scale comprising 12 questions measuring public attitude towards hypoglycaemia. Attitude was divided into three categories: positive, neutral, and negative based on calculating the mean and standard deviation.

The internal consistency of the research tool was assessed using Cronbach's alpha. The knowledge part had a score of 0.816, while the attitude part had a score of 0.7, indicating good and accepted consistency, respectively. Incomplete questionnaires (i.e. those answered by <50%) were excluded from the analysis.

All variables were coded before entry and checked before analysis. Continuous data were presented as mean and standard deviation, while categorical data were presented as frequency and percentage. Chi-square test and analysis of variance were used. Data were analysed using Statistical Package of Social Services software version 22, and a p-value less than 0.05 was considered significant. This study was approved by the appropriate internal review board, and all respondents provided written informed consent prior to participation.

Results

Participant characteristics

The minimum number of required participants was determined to be 385. Based on this, we recruited a total of 2208 respondents with a mean age of 36.6 ± 12.3 years. The study comprised 1527 (69.2%) women and 681 (30.2%) men. Almost all participants were Saudis (98.6%). Approximately 75% of the participants have high education degrees (i.e., college graduate). A total of 45.4% and 54.6% of the participants were employees and non-employees, respectively. Majority (n=1837, 83.2%) have no personal history of DM, while 70% have a family history of DM. Among the 371 participants (16.8%) with a personal history of DM, 179 (48.4%) and 120 (32.4%) have type 1 and type 2 DM, respectively, while 71 (19.2%) did not know their type of DM. Most of the participants (53.0%) with DM had the condition for more than 10 years, and most (n=327, 88.6%) were on pharmacological treatment. A total of 987 (44.7%) participants positively responded to an individual who had a hypoglycaemic attack. The characteristics of the study participants are shown in detail in Table 1.

Table 1: Sociodemographic characteristics among the public in eastern province, KSA, 2018 (n=2208)

Population characteristics	Mean	St.D
Age (years)	36.6	12.3
	N	(%)
Sex		
Male	681	(30.8)
Female	1527	(69.2)
Total	2208	(100.00)
Nationality		
Saudi	2176	(98.6)
Non-Saudi	32	(1.4)
Total	2208	(100.00)
Education		
Basic education	565	(25.6)
High education	1643	(74.4)
Total	2208	(100.00)
Occupation		
Non-employed	1205	(54.6)
Employed	1003	(45.4)
Total	2208	(100.00)
Personal history of DM		
Yes	371	(16.8)
No	1837	(83.2)
Total	2208	(100.00)
DM type (n=371)		
Type 1	120	(32.3)
Type 2	179	(48.2)
Unknown	71	(19.1)
Total	370	(99.6)
Missing	1	(0.4)
Duration of diabetes mellitus (years; n=371)		
≤5	62	(16.7)
>5 and <10	32	(8.6)
≥10	106	(28.6)
Total	200	(52.8)
Missing	171	(47.2)
Treatment for diabetes mellitus (n=371)		
Lifestyle modifications	38	(10.3)
Pharmacological	327	(88.6)
Unknown	4	(1.1)
Total	349	(94.0)
Missing	22	(6.0)
Family history of DM		
Yes	1546	(70.0)
No	662	(30.0)
Total	2208	(100.00)
Dealing with hypoglycaemic event		
Yes	987	(44.7)
No	1221	(55.3)
Total	2208	(100.00)

Abbreviation: DM, diabetes mellitus, (basic education: primary, intermediate, secondary and undergraduate), (high education: post graduate)

Level of knowledge and attitude towards hypoglycaemia

Majority of the participants had insufficient knowledge about hypoglycaemia as shown in Figure 1. Meanwhile, majority of participants (79%) had a positive attitude towards hypoglycaemia (Fig 2).

Fig 1. *Total score of the participants' knowledge about hypoglycaemia*

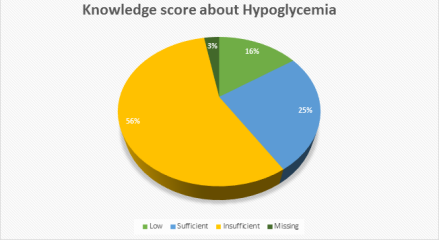
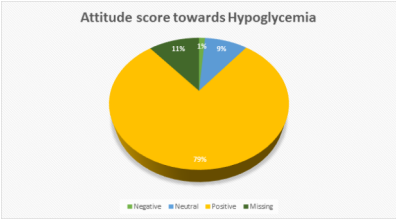


Fig 2. Total score of the participants' attitude towards hypoglycaemia



Level of participants' knowledge and attitude towards hypoglycaemia in relation to the participants' characteristics:

Sufficient level of knowledge was significantly different between men and women (P=0.006), those with high education and basic education (P<0.001), employees and non-employees (P<0.001), and those with and without DM (P<0.001). It was also significantly different between those with type 1 and type 2 DM (P<0.001), those taking and not taking antidiabetic medication (P=0.038), those with and without a family history of DM (P<0.001), and those who have and have not previously dealt with hypoglycaemic event (P<0.001). Meanwhile, there was no statistically significant association between the level of knowledge and nationality or duration of diabetic history.

Positive attitude was significantly different between participants who did and did not previously deal with a hypoglycaemic event (92.8%) (P<0.001). There were no significant differences between positive attitude and other sociodemographic characteristics of the participants (Table 2).

Table 2: *Association between the level of knowledge and attitude towards hypoglycaemia and the demographic characteristics* **(n=2208)**

Sociodemographic data	Total	Sufficient knowledge N (%)	Chi-square P-value	Positive attitude N (%)	Chi-square P-value
Sex					
Male	667	169 (25.3)		549 (88.8)	
Female	1476	392 (26.6)	0.006	1181 (87.7)	0.770
Nationality					
Saudi	2111	550 (26.1)		1701 (87.9)	
Non-Saudi	32	11 (34.4)	0.265	29 (96.7)	0.593
Education					
Basic education	535	80 (15.0)	<0.001	410 (86.3)	0.425
High education	1608	481 (29.9)		1320 (88.6)	
Occupation					
Non-employee	1165	216(18.5)		920 (87.0)	
Employee	978	345(35.3)	<0.001	810 (89.3)	0.138
Personal history of DM					
Yes	351	139 (39.6)		296 (92.2)	
No	1792	422 (23.5)	<0.001	1434 (87.2)	0.037
DM type					
Type I	111	61 (55.0)		101 (95.3)	
Type II	171	64 (37.4)		145 (92.4)	
Unknown	68	14 (20.6)	<0.001	49 (86.0)	0.204
Duration of DM (years)					
≤ 5	60	23 (38.3)		50 (90.9)	
>5 and <10	29	15 (51.7)		28 (100.0)	
≥ 10	103	52 (50.5)	0.622	88 (92.6)	0.687
DM treatment					
Lifestyle modification	37	7 (18.9)		26 (83.9)	
Pharmacological	308	131 (42.5)		265 (93.3)	
Unknown	4	1 (25.0)	0.038	4 (100.0)	0.205
Family history of DM					
Yes	1499	406 (27.1)		1223 (88.9)	
No	644	155 (24.1)	<0.001	507 (85.9)	0.164
Dealing with hypoglycaemic event					
Yes	963	343 (35.6)		836 (92.8)	
No	1180	218 (18.5)	<0.001	894 (84.0)	<0.001

Abbreviation: DM, diabetes mellitus

Discussion

DM is a major health problem in Saudi Arabia due to its high prevalence (Almutairi, 2015). Hypoglycaemia is among the life-threatening complications of DM (Umpierrez & Korytkowski, 2016). Therefore, sufficient knowledge for the early recognition of hypoglycaemia and adequate skills for its basic management are needed. The current study aimed to measure the level of knowledge and attitude towards hypoglycaemia in diabetics among Saudis.

Public knowledge about hypoglycaemia has never been researched in Saudi Arabia. Although several studies investigated knowledge about DM in Saudi Arabia, only one study assessed the knowledge and attitude towards hypoglycaemia, and this study only included those with diabetes (Elzubier, 2001). Other studies were specific to those with diabetes and teachers.

The current study differs by studying knowledge and attitude towards hypoglycaemia in the general Saudi population. Herein, public knowledge, specifically on the recognition of symptoms and basic management of hypoglycaemia, was assessed. The results showed that majority have insufficient knowledge, which is similar to the result of several studies performed among those with diabetes (Elzubier, 2001; Abahussain & El-Zubier, 2017; El-Khawaga & Abdel-Wahab, 2015). Other similar studies conducted among the non-diabetic population in the UAE and Sudan showed similar findings (Balla, et al, 2014; Hamoudi, 2012). This inadequate knowledge could be due to poor communication between physicians and patients with diabetes or because of insufficient health education, particularly the home management of diabetes, and minimum utilization of audio-visual media for health education. Moreover, several other studies regarding knowledge about hypoglycaemia in Pakistan, India, and China showed similar results. This could be due to poor access to information on diabetes in developing countries (Wang et al 2014; Ulvi et al, 2009; Gupta et al, 2016).

The level of knowledge was significantly higher among women than that in men, and this finding was in line with that of a study in Makkah in 2001 that reported poor diabetes knowledge in men (Elzubier, 2001). This could be because of the trend of Saudi women to be in charge of patient care as well as their recent equal access to education with that of men. Moreover, a higher level of education was associated with better level of knowledge, and this result is in line with those of several previous studies (Elzubier, 2001; Gupta et al, 2016; Balla et al, 2014).
By contrast, a study in rural Sudan showed better knowledge in men (Balla et al, 2014). This could be because in rural areas, men are usually more educated than women.

Those with a personal history of DM in the current study had higher level of knowledge than those without DM, and this finding is similar to that in a study in Sudan (Balla et al, 2014). This could be related to several possible factors such as previous personal experience of hypoglycaemia, the fact that diabetics are given more diabetes education during the follow-up visits, and the existence of diabetes education facilities in government health centres in Saudi Arabia.

A positive family history of DM was associated with better level of knowledge. The same finding has been reported by Balla et al (2014) and Abdel-Wahab et al. (2015). This can be because participants with a family history of DM have experience in taking care of their relatives with DM. Moreover, they may also be exposed to hypoglycaemic events more frequently and accompany their family members with DM to follow-up visits that give them an opportunity for diabetic education.

Furthermore, there was significant difference in the level of knowledge between the patients with different types of DM. Those with type 1 DM had higher knowledge than those with type 2 DM. Patients with type 1 DM are insulin dependent, which increases their risk of hypoglycaemia. Type I DM also tends to develop at a young age. These factors increase the patients' experience and knowledge about hypoglycaemia. However, it was found that regardless of DM type, participants with DM who are on pharmacological therapy have higher level of knowledge than those who managed their DM through lifestyle modification only. This might be because using insulin or oral

hypoglycaemic agents makes them prone to hypoglycaemia, thus requiring them to be knowledgeable about this complication.

Age was not significantly associated with the level of knowledge in the current study. By contrast, higher level of knowledge was associated with age above 30 years in a study in Sudan (Balla et al, 2014). This difference may be because only adults were included in the current study.

Regarding attitude, majority of the participants have a positive attitude towards helping people with hypoglycaemia. Similar results were obtained in a study conducted in Sudan (Balla et al, 2014). This might be related to Islamic values and the caring nature of both communities. By contrast, a 2008 study conducted in schools in Riyadh showed unfavourable attitude towards taking responsibility for diabetes care and education for students with diabetes (Abdel, 2008) This difference may be due to the lack of confidence to act in emergency situations, which is also a result of lack of education and training.

However, a personal history of DM showed no significant association with attitude. By contrast, Balla et al. (2014) reported a significant difference in attitude towards hypoglycaemia between those with and without DM, with the patients with DM showing a more positive attitude. Sex, education, occupation, and family history of DM also showed no significant association with attitude in the current study. The significant difference in attitude between those who have and have not previously dealt with a hypoglycaemic event might be because the experience made them more confident and enthusiastic to learn about the proper management of hypoglycaemia.

Limitations

Given the cross-sectional design of the study, temporality and causality could not be established. In addition, whether the participants have been given diabetic education was not considered in the analysis. Furthermore, using a convenient sampling technique can normally lead to data inflation. However, this was minimized by sample size multiplication. Moreover, although the target sample size was achieved, the participants were limited to those who were using social media platforms. Thus, the generalizability of the results may be limited. It was also difficult to compare the attitude of the participants in the current study to those in other studies because different tools were used to measure attitude.

Conclusion

The level of knowledge about hypoglycaemia is insufficient among Saudis despite the high prevalence of DM, but majority have a positive attitude towards helping individuals in hypoglycaemic event. Sex, education, occupation, personal or family history of DM, and previous history of dealing with individuals with hypoglycaemia were significant factors affecting the level of knowledge about hypoglycaemia. Meanwhile, previous experience with a patient with hypoglycaemia was the only significant factor affecting attitude. An important finding in the current study was the significant difference in the knowledge and attitude among participants who have previously dealt with hypoglycaemic event, which increased their knowledge and gave them a more positive attitude towards hypoglycaemia. A national continuous health education program to improve knowledge on DM, particularly the management of hypoglycaemia, is needed.

Recommendations

To the practice:

1. Health education programs for educating the public continuously about prevalent diseases, such as DM, and their early identification and proper management during emergencies, such as diabetes-induced hypoglycaemia, should be established.
2. Public awareness on DM and its complications should be increased by disseminating information in TV shows, illustrations, and billboards.
3. Mobile applications with understandable videos demonstrating symptoms and proper management of complications during emergencies should be created.
4. Pharmaceutical companies should be required to visually provide information on precautions about insulin and oral hypoglycaemic agents:
    a. do not use in unconscious patients
    b. do not use in patients with low blood sugar
5. A cartoon quick response code should be added to identification cards given to patients with DM and those on antidiabetic medication. This should demonstrate the symptoms of diabetic emergencies and their proper management.
6. Dealing with emergencies can be given as a practical class in schools and as a safety class in work places.
7. The result of this study should be referred to appropriate authorities to support and fund related education programs.
8. The public, physicians, and patients with diabetes should be encouraged to voluntarily share their knowledge and experience.
9. Public areas for social gathering in each city to periodically provide health education on prevalent diseases should be identified.

To research:

10. Further studies should be conducted to evaluate the effect of health education programs and determine the best modality to deliver health education.
11. Further studies should be conducted to evaluate public knowledge about other diabetic emergencies.

Reference

1. Almutairi, K.M. (2015). Quality of diabetes management in Saudi Arabia: A review of existing barriers. Archives of Iranian Medicine, 18(12), 816–821.
2. Alotaibi, A., Perry, L., Gholizadeh, L., Al-Ganmi, A. (2017, Oct 7). Incidence and prevalence rates of diabetes mellitus in Saudi Arabia: An overview. Journal of Epidemiology and Global Health, 7(4), 211-218.
3. Umpierrez, G., Korytkowski, M. (2016, Apr). Diabetic emergencies — ketoacidosis, hyperglycaemic hyperosmolar state and hypoglycaemia. Nature Reviews Endocrinology, 12(4): 222-232.
4. Elzubier, A.G. (2001, Mar). Knowledge of hypoglycemia by primary health care centers registered diabetic patients. Saudi Medical Journal, 22(3), 219-222.
5. Davis, S., Alonso, M.D. (2004, Jan-Feb). Hypoglycemia as a barrier to glycemic control. Journal of Diabetes and its Complications, 18(1):60-68
6. Murata, G.H., Duckworth, W.C., Shah, J.H., Wendel, C.S., Hoffman, R.M.; Diabetes Outcomes in Veterans Study. (2004, Jul). Factors affecting hypoglycemia awareness in insulin-treated type 2 diabetes: The Diabetes Outcomes in Veterans Study (DOVES). Diabetes Research and Clinical Practice, 65(1), 61-67.
7. Cryer, P.E., Irene, E., Karl, M.M (2007, July). Insulin therapy and hypoglycemia in type 2 diabetes mellitus. Insulin, 2(3):127-133.
8. Kedia, N. (2017, Oct 21). Treatment of severe diabetic hypoglycemia with glucagon: an underutilized therapeutic approach. Diabetes, Metabolic Syndrome and Obesity, 4, 337-346.
9. Wang, C., Yu, Y., Zhang, X., Li. Y., Kou, C., Li, B., et al. (2014, Jul). Awareness, treatment, control of diabetes mellitus and the risk factors: Survey results from Northeast China. PLoS One, 9(7):e103594.
10. Ulvi, O.S., Chaudhary, R.Y., Ali, T., Alvi, R.A., Khan, M.F.A., Khan, M., et al. (2009, Nov). Investigating the awareness level about diabetes mellitus and associated factors in Tarlai (rural Islamabad). Journal of Pakistan Medical Association, 59(11), 798-801.
11. Gupta, S., Acharya, S., Shukla, S. (2016). Awareness of symptomatology, natural history and complications of Diabetes Mellitus among Non Diabetics and diabetics in rural population of Wardha district of Central India. International Journal Of Medical Science And Clinical Invention. 10.18535/ijmsci/v3i10.15.
12. Balla, S.A., Awadelkareem, M.A., Abu Ahmed, H. (2014, Jan). Prevalence of diabetes, knowledge and attitude of rural population towards diabetes and hypoglycaemic event, Sudan 2013. American Indian and Alaska Health Native Mental Research, 2(6):356.
13. Hamoudi, N. (2012, Apr) Awareness of diabetes mellitus among UAE non-diabetic population in Ajman and Ras Alkhaimah. Journal of Applied Pharmaceutical Science, 50-53.
14. Abahussain, N.A., El-Zubier, A.G. (2017, Oct 22). Diabetes knowledge among self-reported diabetic female teachers: Al-Khobar, Saudi Arabia. Journal of Family and Community Medicine, 12(1):43.
15. Abdel, G.E.S. (2008). Teacher's knowledge, attitudes and management practices about diabetes care in Riyadh's schools. Journal of the Egyptian Public Health Association, 83(3-4):205-222.
16. El-Khawaga, G., Abdel-Wahab, F. (2015) Knowledge, attitudes, practice and compliance of diabetic patients in Dakahlia, Egypt. European Journal of Research in Medical Sciences, 3(1).