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Research Article

SURVEY INVESTIGATION FOR DIABETES-MELLITUS (DM) SIDE-EFFECTS (SES) AS OBESITY (O) AND MICROBIAL- ULCERS (MU) AFFECTED COMMUNITY-HEALTH (CH), KSA

^{1*}Dr Ayman Abdelbaky Atalla, ²Dr Awad Saeed Al-Samghan, ³Sherifa Mostafa M. Sabra,
⁴ Abdulhameed Fouad A. Sarriyah, ⁵Jehan Fouad A. Sarriyah, ⁶Abdullah Hussain A.
Alfaifi, ⁷ Alhanouf Abed Salim, and ⁸Mohammed Abdullah M. Alsuwat

^{1*} Ass, professor of Family medicine, college of medicine Taif University, ² Ass, professor of family and community medicine, Faculty of Medicine King Khaled University, Abha, KSA,
³ Corresponding Author, Senior Consultant, Asst. Prof., Microbiology Specialty, Science College, Taif University, KSA., (^{4, 5, 6, 7, 8}) Students, Medicine College, Taif University, KSA

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Abstract:

DM is a chronic and serious disorder affecting a significant number of people worldwide. Many lifestyle-related factors have contributed to the establishment of DM as the disease of the era, including reduced physical activity and poor eating habits, which lead to obesity.

The purpose for this study: To assess the relationship between various sedentary behaviors especially prolonged TV watching and obesity in diabetic patients in Taif, KSA.

Study design :That were included "Analytical Cross Sectional"

Result: 4.1% of participants have DM, 32.4% have regular exercise, 19.5% watch excessive hours of TV and 11.3% have microbial ulcer.

Seventh (33.3%) of diabetic patient had obesity

Seventh (33.3 %) of diabetic patient had overweight. Fifth (23.8 %) of diabetic patient had normal weight.

*Conclusion: The present investigation revealed that prolonged TV watching and obesity and increased risk of development microbial ulcer is associated with type 2 diabetes And reduce time of TV watching and weight may be an important to prevent type 2 diabetes***Keywords:** DM, obesity, watching TV, sedentary lifestyle, microbial ulcer.

Corresponding author:

Dr. Ayman Abdelbaky Atalla,

Ass, professor of Family medicine, college of medicine Taif University,

EM: A.atalla1981@gmail.com

QR code



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INTRODUCTION:

DM is a chronic and serious disorder affecting a significant number of people worldwide. Many lifestyle-related factors have contributed to the establishment of DM as the disease of the era, including reduced physical activity and poor eating habits, which lead to obesity. Moreover, social factors, including education level, affect diabetes progression. In 2013, almost 382 million people worldwide were affected by DM; this is expected to increase to 592 million by 2035 [1]. According to recent estimates, 34.6 million people in eastern Arab countries, or 9.2% of the adult population, had DM. The prevalence of DM among the younger population in eastern Arab countries is also higher than the global rate. Furthermore, 25.2 million people, or 6.7% of the population, are estimated to be pre-DM and, therefore, at high risk of DM [2]. Eastern Arab countries were amongst the top 10 countries with highest DM occurrence. It is anticipated that the prevalence of DM will almost double by 2035. In KSA, there were 14,900 children with type 1 DM; this is the highest prevalence of DM in the region, comprising approximately a quarter of the 64,000 children with type 1 DM in the region [3].

In 2013, The high prevalence of DM in KSA was due to both type 1 and 2 DM, the national health care burden resulting from DM in 2010 was US\$0.9 billion and this is expected to rise to US\$6.5 billion by 2020 [4]. In 2015, KSA, prevalence of DM among adult has reached (17.5-23.7%), a rate that is one of the highest in the world. Within a changing economic environment, DM had a progressive challenge stakeholders in KSA were facing. The cost per person with diabetes in mounts up to \$1,145.3 [5]. In 2015, number of undiagnosed diabetics had been estimated at 1.2243 million; adding another dimension to the challenge and raises resource issues [6]. The International Diabetes Federation estimated that 17.6% adults aged DM in KSA in 2015 [7].

The Council for Cooperative Health Insurance (CCHI) was established by the KSA government in 1999 [8]. The main role of CCHI was to regulate a health insurance strategy for the KSA care market. The implementation of a cooperative health insurance scheme was planned over three stages. In the first stage, cooperative health insurance was applied for non-Saudis and Saudis in the private sector, where the employers have to pay for health cover costs. In the second stage, the cooperative health insurance was to be applied for Saudis and non-Saudis working in the government sector, and in the third stage, health insurance yet to be applied to employees of all companies, domestic workers, and other groups, such

as pilgrims. The introduction of the national insurance scheme was intended to decrease the financial burden due to the costs associated with providing health services free of charge to citizens. It also gives people more opportunity to choose the health services they require [9].

Obesity is one of the principal risk factors for type 2 diabetes [10]. and since it is a modifiable factor it should receive major attention in any future DM prevention programs [11]. The prevalence of DM is reported to be rising globally in parallel with an increasing prevalence of obesity [12]. Globally, the prevalence rate of obesity is increasing. It is estimated that approximately 2 billion people worldwide are classified as overweight or obese [13].

2004, KSA, obesity and, in particular, abdominal obesity is the second most important predictor of both DM and pre-DM. Obesity is well documented to be associated with increased risk of various chronic diseases, including T2DM [14]. In Jeddah, 2016, Age was the strongest predictor of DM and pre-DM followed by obesity. DM was significantly associated with general obesity in women but not in men following adjustments. Obesity seems to be the main culprit in the development of both DM and pre-DM. increased WC was strongly associated with pre-DM in both sexes, but only in women for DM. Similarly, WC: height ratio retained significant effect in both sexes in regression analysis in pre-DM, but not in DM. Therefore, the sex difference should be considered when assessing abdominal obesity as part of general risk assessment [15]. Turaif, 2017, prevalence of DM among the studied population was 4.5%, pre-diabetic cases were 7.5% [16]. Arar, 2017, 48.7% of the respondents thought that lack of exercise and obesity were the major risk factors of DM [17].

Diabetic foot ulcers (DFUs) are a major end-stage complication of DM [18]. It is estimated that 15% of all patients with diabetes develop lower extremity ulcers [19], 2002, In the Arab world, the prevalence of DM had doubled and in some countries had dramatically tripled in the last decade only. Some countries are ranked as having the highest in diabetes prevalence worldwide reaching in certain population to approximately 20% [20]. In most developed countries, the annual incidence of foot ulcers amongst people with diabetes is about 2% [21] Targeting patients who are at high risk of developing DF may constitute a cost-effective strategy in controlling progression to end stage complications. In the West, various reports are available on the risk factors related to the complications of diabetes in order to

develop strategies for avoiding the expected deterioration in the quality of life following amputation [22]. 2006, In the Arab world, the prevalence of diabetes had doubled and in some countries had dramatically tripled in the last decade only. Diabetic foot problems follow as it occurs in 10-15% of patients with DM, It is thought that the prevalence of DFUs is higher in the Arab world compared with Western countries [23]. 2007, Diabetic foot is the most frequent cause of hospitalization for the patients with diabetes, representing up to 25% of all diabetic hospital admissions [24]. 2015, Diabetic foot complications remain a major problem among patients with DM and the health care system. More than 120 million people in the world suffer from DM and mostly have DFUs [25].

In Saudi Arabia, 2009, DF was prevalent in 13.5% of the diabetic patients [26]. KSA , 2009, If not timely and properly managed, the endpoint of DFU is amputation in 15%- 27%. When amputation happens, significant morbidity and mortality in addition to immense emotional, social, psychological and financial consequences ensues [27]. Jeddah 2013, The annual incidence of DFU varies between 2.1 to 7.4% and with a lifetime risk of developing a DFU has been estimated at 25% Individuals with DFU require more visits to healthcare facilities, and when admitted to hospital for inpatient care or surgery they tend to stay longer [28]. Qassim, 2016, The prevalence of diabetic foot ulcers in the Qassim region is 10.8% [29].Arar, 2017, poor wound healing

(4-5.3%) [17]. 2017, The mean prevalence of DFU in Saudi Arabia was 11.85%; (4.7–19%) [30], In KSA, 2017 had DFU 71% were Saudis [31].

The aim for this work: To assess the relationship between various sedentary behaviors especially prolonged TV watching and obesity in diabetic patients in KSA .

The objectives were assess the relation between DM and (obesity, watching TV and microbial ulcer) [32].

The hypothesis were sitting on TV for long hrs is one of the factors that cause type 2 diabetes [33].

METHODOLOGY:

Study design: That were included "Analytical Cross Sectional"[34] , the subjects were included: Sample size were 513 percipients, included criteria were Age (20-70), diabetes patient, Male, female, did not have any other disease. Exclusion criteria were included more than 70 and less than 20 yrs, had any other diseases. The Sources were included questionnaire, data collection and procedure, distribution of questionnaire in DM patient were variables in sedentary life and age [35].

The questionnaires were the relationship of obesity to diabetes, this questionnaire aims to study the awareness of the KSA society about the relationship between watching TV, and obesity to diabetes, infected ulcers (Table 1).

Table 1: Questionnaires for DM-SEs

*Q *No	*Q title	Answer	
		Yes	No
1.	Age?		
2.	Do you have diabetes?		
3.	Type 1?		
4.	Type 2?		
5.	Did you take regular treatment?		
6.	Do you have suit food?		
7.	Do you have regular exercise?		
8.	Do you watch excessive TV?		
9.	Do you suffer from obesity?		
10.	Do you have microbial ulcers?		
*Q: Question, *No: Number			

Data analysis:

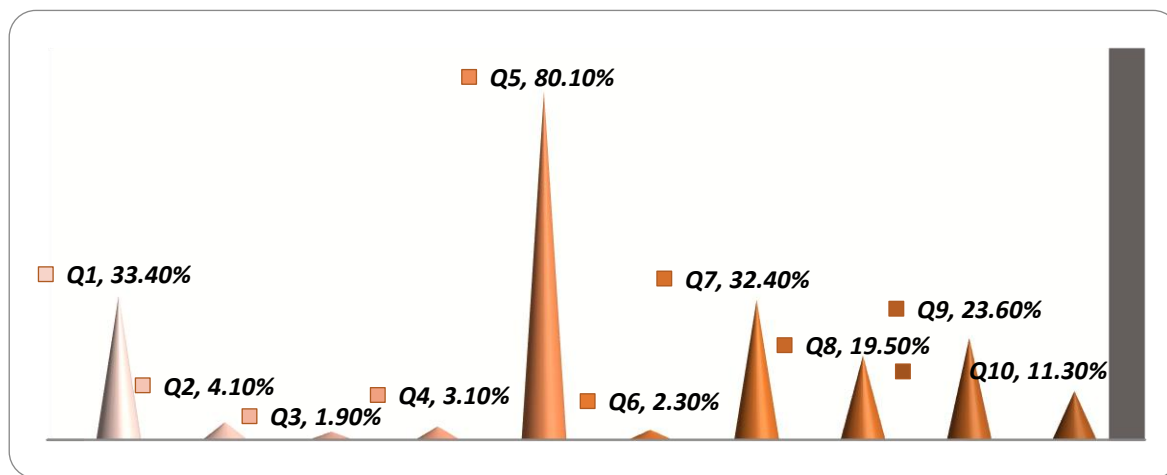
All data were collected and treated by "SPSS Program" and were revealed in tables and graph.

RESULTS AND DISCUSSION:

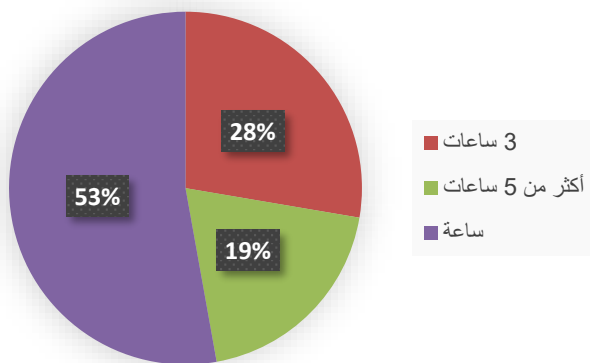
Table 2 and graph 1: Prevalence of *DM-SEs

*Q *No	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
Positive	33.4%	4.1%	1.9%	3.1%	80.1%	2.3%	32.4%	19.5%	23.6%	11.3%

*DM-SEs: Diabetes-mellitus Side-effects *Q: question, *No: Number



watching_tv_daily_hours

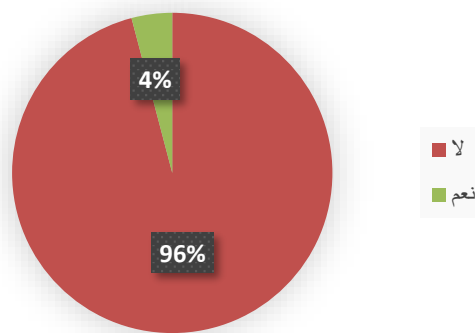


number of people , and many risk factor in life style related to factor to contribution establishment DM including reduce physical activity and poor eating habits lead to obesity . Obesity and physical inactivity are both risk factors for type 2 diabetes [36-39].

The excessive free fatty acid released by adipose tissue leads to a decrease in insulin sensitivity of muscle, fat and liver, which is followed by raised glucose levels, insulin resistance and type 2 diabetes [36–39]. Physical inactivity accelerates the pathogenesis of type 2 diabetes and subsequently leads to excess morbidity and mortality [40] .

Our study include 500 participants, the male participants were 65.5% and the female participants

do_you_suffer_from_diabetes?



we

participants not have DM and twenty one (4.1%) participants with DM , and ten (1.9%) participants with type 1 DM and sixteen (3.1%) participants with type 2 DM.

Four hundred fifty five (88.7%) participants the diabetes not cause microbial lesion (ulcer) and fifty eight (11.3%) participants the diabetes caused microbial lesion (ulcer) . Four subjects (40%) participants of diabetic male have microbial lesion (ulcer) and two subjects (18%) participants of diabetic female have microbial lesion (ulcer) . Also three hundred ninety two (76.4%) participants no suffer from obesity and one hundred twenty one (23.6%) participants suffer from obesity .seventh (33.3%) of diabetic patient had obesity.

Seventh (33.3 %) of diabetic patient had overweight. Fifth (23.8 %) of diabetic patient had normal weight. one hundred twenty eight (25%) participants no eats food when watching TV, and two hundred seventeen (52.6%) participants sometimes eats food when watching TV.

In cross section descriptive study from 1st October 2016 to 23th January in North India .To prevalence of diabetes and pre-diabetes in the North Indian state of Punjab as part of a large household NCD Risk Factor Survey. This study show there is Overall prevalence of DM among the study participants was found out to be 8.3%, which was higher in urban areas (9.4%) [41].

Compared to rural (7.6 %), the prevalence of DM was found to be significantly higher among those aged 45–69 years (18.0%), obese (14.4%), with family history of DM (11.9%) and those with hypertriglyceridemia. No difference was found in prevalence by sex [41].

In cross section descriptive study from 13th may 2017 to 29th June 2017, To determine the prevalence of type 2 DM in a representative sample among the visitors of a business location in Riyadh [42].

This study show there is showed the provided information about the association between certain demographic and clinical variables and Random Blood Sugar among Saudi population. The age and physical activity were significantly associated with high blood sugar level. Also, females who were diagnosed with Gestational Diabetes Mellitus (GDM) demonstrated a high score of RBS and therefore are at high risk for type 2 Diabetes Mellitus (DM) [42].

being 50 years or older and with no physical activity will increase the risk of having a higher score of RBS, hence will be at high risk of type 2 diabetes [42] .

In cross section descriptive study from 17th February2015 to 6th may 2015 ,To prevalence of studying foot complications associated with diabetes and related risk factors [43].

This study show there is overall prevalence of diabetic foot complications was 3.3% with 95% confidence interval (95% CI) of (3.16%–3.44%), The prevalence of foot complications increased with age and diabetes duration predominantly amongst the male patients . Diabetic foot is more commonly seen among type 2 patients, although it is more prevalent among type 1 diabetic patients [43] .

In study contact by (**Jaya Prasad Tripathy etal 2016**) , (14.4%) participants of diabetes patient have obesity , while in our study (33.3 %) participant of diabetic patient have obesity [41] .

Although in our study (11.3%) of participants have microbial ulcer and show more common in male is 4 subjects (40%) of participants is the diabetes causes microbial ulcer more than in male . while in the previous study (**Al-Rubeaan K elta 2015**) show 3.3% participants have foot ulcer and similar in the our study the foot ulcer more common in male is (68.57%) participant diabetes causes foot ulcer in male more than female [43] .

Although in our study166 subject (32.4%) of participants do exercise continuously , while in previous study

(**Kholid Al A elta 2017**) show 67 subject (46.2%) do physical active life style . the our study and previous study show if the patient have physical activity life style result lower incidence of diabetes mellitus that can be prevent and protective of type 2 DM [42] .

CONCLUSIONS:

The present investigation revealed that prolonged TV watching and obesity And increased risk of development microbial ulcer is associated with type 2 diabetes And reduce time of TV watching and weight may be an important to prevent type 2 diabetes

Recommendation:

We recommend more attention and support to awareness campaigns related to obesity and diabetes. such campaigns would greatly improve community awareness.

Since the majority of the participants are of the college age (18 – 24 years old) giving all students in different colleges courses in physical education would improve physical activity hence reducing prevalence of obesity .

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Conflict: No conflict

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