Assessment Of Follow-up Quality Among Type 2 Diabetes Patients In Madinah, Saudi Arabia

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Background

Diabetes mellitus (DM) is a very common metabolic disorder. It mainly affects and results in abnormal glucose metabolism [1]. It occurs when the body cannot effectively use the insulin that it produces. Insulin is a hormone that regulates blood sugar. Hyperglycemia is a common effect of uncontrolled diabetes and overtime leads to serious damage to many of the body's systems, especially the nerves and blood vessels [2], and glycemic control is a key factor in the prevention of diabetic complications [3]. Diabetes has a high incidence rate and is a major health concern with high morbidity and mortality [4], and the number of diabetic patients globally is estimated to double in the next 25 years. Thus, it is crucial to prevent DM and its complications and to aim for better glycemic control [5].

Methods

This retrospective, observational study was conducted among patients diagnosed with T2D in Madinah city, Saudi Arabia, from January to August 2019. The data were analyzed using IBM SPSS Statistics (Version 21). The association between dependent and independent variables was tested by the Chi-square test. A p-value cutoff point of 0.05 at 95% confidence interval (CI) was used to determine the statistical significance. According to the prevalence of T2D in Madinah (12.7%) with a population of 2.3 million [7], we calculated the proper sample size to be 384 participants at 95% CI, 80% power, 5% margin of error, and 0.05 level of significance. This sample size was increased to 600 to make up for non- responses. Moreover, we used the sample size calculator (Creative Research Systems survey software, 2020) to determine the precise target population sample size.

Discussion

The findings of this study show that more than half of the T2D patients were attending regular follow-up with a primary health-care doctor, with an average of one time every 3-6 months. These findings are inconsistent with a study published by Alramadan et al. [13] on "glycemic control for people with T2D in Saudi Arabia-an urgent need for a review of the management plan." The study reported that among the 1,111 participants involved, 40.5% had regular follow-up at a diabetes center, and 48.2% had regular follow-up at both a diabetes center and a primary health-care center. In this study, only 17.7% of the participants attended a regular follow-up at a diabetes center, which is relatively less. In Spain [14], researchers documented that 57.4% of diabetic patients have follow-up medical evaluations every 3-4 months, which corroborates the study findings. Furthermore, we found that one-third of the participating diabetic patients were noncompliant with follow-up, and the most common reasons given were that follow-up was not beneficial and difficulty obtaining appointments. In addition, over 70% of diabetic patients reported a satisfaction rate of very good to excellent when it comes to the medical services provided during follow-up. In the Central Region [15t]. In this study, nearly all participants (84%) had uncontrolled glucose levels. Poor glycemic control had been reported by several published studies, ranging from 60% up to 85% [14,16,17,18]. In a study from Brazil [17], 67.3% of the patients were considered to have inadequate glycemic control (high risk), where 71% of the high-risk patients presented with HbA1c levels over 9%. On the other hand, in Spain [15], a study documented that 60.3% of the patients had a good glycemic control, and approximately 25% of the patients receiving monotherapy had HbA1c values ≥ 7%.

Results

Six hundred diabetic patients were responded to the online survey. 305 were males (50.80%), and 295 were female (49.2%) (Table 1).

About 70% of the participants were experiencing diabetic symptoms at the time of diagnosis. Of the 600 participants, 321 (53.5%) were followed up by their primary care physician for diabetes management: 112 (18.7%) attended follow-up at the hospital, 106 (17.7%) at a diabetic center, and 61 (10.2%) at a private clinic. Furthermore, 33% of the participants (n = 198) did not follow up regularly (once every 9 months or more). Most of them believed that there was no benefit from the regular follow-up, whereas the lack of appointments was cited by some participants as the reason for their irregular follow-up. Furthermore, 49.5% (n = 297) had never attended follow- up at an ophthalmology clinic, whereas 10.3% (n = 62) visited an ophthalmologist at least once a year, and 40.2% (n = 241) once every other year. Of the participants who never attended follow-up at an ophthalmology clinic, 67% attributed to the lack of referral by their primary care physician, and 22% attributed it to the unavailability of appointments (Figure 2).
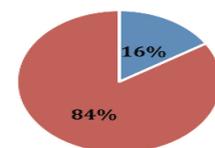
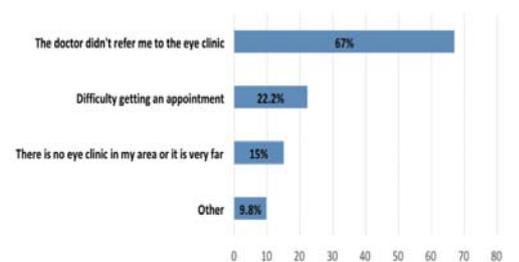
Figure 1. Patients' glycemic control.

Figure 2. Reason for not visiting the eye clinic.

Conclusions

The results showed satisfaction with medical services, 44.5% rated them very well, 27.3% excellent, 18.7% acceptable, and 9.5% weak. Furthermore, 49.5% had never followed with an ophthalmology clinic, and for a significant number of participants, a lack of an ophthalmology referral was the reason for not having an annual retinal examination. Hypertension was reported by 58.3% of the participants. An effort must be done to increase awareness among primary-care physicians of the importance of referring diabetic patients to appropriate specialists.

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