



Awareness Regarding Ramadan and Diabetes Mellitus, in Health Care Providers of Services Hospital Lahore

Amjad Ali Raza*, Sarwat Saif, Umair Ashfaq, Sohaib Haider Zaidi, Usman Musharraf and Adnan Hashim

Department of Endocrinology & Metabolism, Services Institute of Medical Sciences, Services Hospital, Lahore, Pakistan

*Corresponding author: Amjad AR, Consultant Physician and Endocrine Fellow, Department of Endocrinology & Metabolism, Services Institute of Medical Sciences, Services Hospital, Lahore, Pakistan, E-mail: amjad224@hotmail.com

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Abstract

Objective: The worldwide Muslim population is 1.5 billion and around 50 million people suffering from diabetes mellitus observe fasting during Ramadan. Education by both religious leaders and healthcare providers can help to reduce complications during fasting. In advance of Ramadan of 2019, we assessed the basic knowledge of health care professionals regarding Ramadan fasting and diabetes.

Methodology: This study was conducted at Services Hospital Lahore between February and March 2019. Systematic non-probability consecutive sampling technique was used in this study, a total of 300 participants were selected. House officers, General practitioners, residents, fellows, and consultants were included in this study. Medical students and nurses were excluded from this study.

Results: 300 questionnaires were administered. The response rate was 99%. Mean age of the participants was 35.5 years and a standard deviation of 11.2 years. Among the participants, 199(67%) were male while 98(33%) were female. 240(80.8%) of the participants suggested that patients of uncontrolled diabetes patients should not fast while according to 57(19.2%) of the participants' diabetic patients should fast. According to 234(78.8%) participants, Taraweej prayer is an alternative to exercise. The designation was a significant factor in association with level of knowledge ($p=0.03$). 265(89.2%) participants showed the willingness to attend an educational session on the topic of Ramadan, fasting, and management of patients.

Conclusion: Knowledge gap is present in Healthcare providers' knowledge and needs improvement in their knowledge of Ramadan fasting and diabetes management. Participants showed willing to attend an educational session and learn more about this topic.

Keywords: Diabetes Mellitus; Patients; Ramadan; Hypoglycemia

Introduction

Ramadan is the ninth Islamic lunar month. Muslims fast during this holy month. In Islam, fasting is one of five pillars [1].

Approximately 382 million people worldwide have diabetes with a prevalence of 8.3% [2].

The worldwide Muslim population is 1.5 billion and around 50 million people suffering from diabetes mellitus observe fasting during Ramadan. During Ramadan Muslim refrain from eating, drinking and taking oral medication from dawn to dusk [3,4].

The holy Qur'an exempts ill people from fasting. Most Muslims with diabetes do not consider themselves exempted and thus observe fast [4].

Ramadan is associated with a sudden shift in meal timing. There is also increased gluconeogenesis as well as ketogenesis in patients of diabetes mellitus. Thus risk factors including hypoglycemia, dehydration, hyperglycemia, and diabetic ketoacidosis may occur [5,6].

According to a recent Creed study, the Incidence of hypoglycemia range from 4.1 to 13% in diabetic patients observing fast, the incidence is higher among patients using insulin [7].

Proper patient education and strict medical supervision during Ramadan are essential for optimal glycemic control. Education by both religious leaders and healthcare providers is essential in this regard [8].

Thus, Ramadan fasting is a challenge to both healthcare professionals and patients. In advance of Ramadan of 2019, we assessed the basic knowledge of health care professionals regarding Ramadan fasting and diabetes.

Methodology

This study was conducted at Services Hospital Lahore between February and March 2019. This study was approved by the ethical committee. Systematic non-probability consecutive sampling technique was used in this study, a total of 300 participants were selected. House officers, General practitioners, residents, fellows, and consultants were included in this study. Medical students and nurses were excluded from this study.

Informed verbal consent was taken and we explained the purpose of the study to participants. A well-structured questionnaire was developed by authors.

Part 1: Demographic details including age, gender, and designation.

Part 2: Prior education on management of diabetes in Ramadan, opinion whether diabetic patients should fast or not, knowledge about the route of administration of medicines that invalidate fast.

Part 3: knowledge about diet during Ramadan, physical activity, optimum time of drug administration, dosage and drug modifications, monitoring of blood glucose level and when the patient should end fast.

Part 4: willing to attend the education session regarding the management of diabetes during Ramadan.

Statistical Package for Social Sciences (SPSS) version 22 was used to enter and analyze data. The descriptive study was carried out for

frequencies and percentages. Mean and standard deviation of age was calculated. Chi-square test was used to find the association of knowledge and categorical data i.e. age, gender, and designation.

p value of ≤ 0.05 was considered as statistically significant.

Results

300 questionnaires were administered. 297 questionnaires were returned. Thus the response rate was 99%. Mean age of the participants was 35.5 years and a standard deviation of 11.2 years. Among the participants, 199 (67%) were male while 98 (33%) were female. House officers were 55 (18.5%), medical officers 10(3.4%), first-year residents 48 (16.2%), second-year resident 44 (14.8%), third and fourth year resident 45 (15.2%), fellow 48 (16.2%), consultants 47 (15.8%).

240 (80.8%) of the participants suggested that patients of uncontrolled diabetes patients should not fast while according to 57 (19.2%) of the participants' diabetic patients should fast.

Knowledge of healthcare providers in regard to administration routes that invalidate the *fast* is shown in Table 1.

In this study, 196 (65.9%) of the participants had prior education on management of diabetes during Ramadan while 101 (34%) had no prior education.

Optimum time of administration of drugs that needed to be taken on an empty stomach was asked. According to 152 (51.2%) said the best time is 1 hour before keeping fast, according to 68 (22.9%) respondents it is 2 hours after iftar, and according to 77 (25.9%) best time is to give medicine at midnight.

Administration route	Invalidate fasting		Do not invalidate fasting		Do not know	
	Frequency N=297	Percentage (%)	Frequency N=297	Percentage (%)	Frequency N=297	Percentage (%)
Do not	111	37.4	150	50.5	36	12.1
Do not	203	68.4	69	23.2	25	8.4
Ear and eye drops a	69	23.3	202	68	26	8.8
Oral sprays provided nothing is swallowed a	47	15.8	230	77.4	20	6.7
Enemas, suppositories a	140	47.1	132	44.4	25	8.4
Oxygen administration a	71	23.9	205	69	21	7.1
Topical creams, ointments a	14	4.7	268	90.2	15	5.1

Table 1: Physicians' knowledge in regard to administration routes that invalidate the *fast*. a: these routes do not invalidate fasting (ensure that nothing goes through the gastrointestinal tract). SC: Subcutaneous, IV: Intravenous, IM: Intra-muscular.

Discussion

240 (80.8%) of the healthcare providers suggested that patients with uncontrolled diabetes should not fast while according to 57 (19.2%) of the participants diabetic patients should fast.

In a similar study, 54% of the healthcare providers were of the view that diabetic patients should not fast, irrespective of the treatment regimen [9].

In this study, about 66% of the participants had prior education on the management of diabetes during Ramadan. In a similar study

conducted in Singapore 60 (68%) of the participants have received prior education on this topic [10].

According to the participants patient taking metformin, BD should take a single dose at iftar 53 (17.8%), should take 1/3rd dose at Sehri and 2/3rd at iftar 168 (56.6%), should take half at Sehri and a half at iftar 76 (25.6%).

According to the 234 (78.8%) participants, Taraweej prayer is an alternative of exercise, while 63 (21.2%) participants did not consider taraweej as an alternative to exercise.

Advice about diet during Ramadan include Sehri meal should be taken as late as possible and should contain complex carbohydrate 37 (12.5%), during non-fasting hours more fluid should be taken 10 (3.4%), fatty meal should be avoided during iftar 8 (2.7%), all of the above three are recommended 242 (81.5%).

According to the respondents, blood glucose level should be measured only if patient feels unwell 5 (1.7%), 1-2 times/week 21 (7%), 3-4 times/week 240 (80.8%), 5-7 times/week 15 (5%), don't know 16 (5.4%).

According to the participants fast should be broken if blood glucose level exceeds 180mg/dl 15 (5.1%), above 240 mg/dl 41 (14%), above 300 mg/dl 241 (81.9%).

The designation was a significant factor in association with level of knowledge (p=0.03). Age (p=0.07) and gender (0.06) were statistically insignificant factors.

265 (89.2%) participants showed the willingness to attend an educational session on the topic of Ramadan, fasting, and management of patients.

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The ideal frequency of blood glucose monitoring is not defined yet, but according to the guidelines it should be measured 3-4 times per week. Most of participants in this study had knowledge in this regard.

In this study, about 129(43.4%) of the participants did not know medicine adjustment regimen.

According to the guidelines, Patients taking metformin should modify the timing of drug intake as two-thirds of the total daily dose to be taken immediately with the iftar meal, while the other third is taken before Sehri meal [2,3].

In this study, only 56(18.9%) had answered wrong about blood glucose level at which fast should be nullified. According to the guidelines, patients should end fast when the blood glucose level is above 300 mg/dl [12].

Knowledge of health care providers regarding routes of administration that invalidate fast needs improvement. Different opinions of Muslim patients who may follow different juristic schools need to be considered. According to the guidelines routes other than involving the gastrointestinal tract, do not nullify it is not permissible to use injections for nourishment purposes during fast [13].

Variation of opinion regarding the route of drug administration during Ramadan is present but it is agreed upon that Medication should be avoided during fasting, if an alternative option such as dose or time adjustment is possible. It should not be used as a source of nutrition [14]. In this study, the majority of the participants 242(81.5%) had adequate knowledge about dietary modifications during Ramadan. Lifestyle and dietary modifications during Ramadan are shown the reduced incidence of hypoglycemia during fasting [15].

Majority of participants in our setting were willing to attend an educational session in this regard. Ramadan focused education will help health care providers to manage and guide their patients in a better way, thus minimizing the risk of complications.

Conclusion

The knowledge gap is present in Healthcare providers' knowledge and needs improvement in their knowledge of Ramadan fasting and diabetes management. Participants showed willing to attend an educational session and learn more about this topic.

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