Purpose:

Background:
In recent years, there has been an increase in the number of surveys focusing on the prevalence of diabetes and pre-diabetes among the Arab population in Israel. Particularly as the life expectancy is lower among Israeli Arabs than Israeli Jews, and this gap has widened. Also age-adjusted mortality as a result of heart disease, stroke, and diabetes remains higher in Arabs. The Arab population are mostly located in northern Israel, where the Northern District of Meuhedet (health care organization connected to the national health system) serves approximately 15,500 diabetic patient, the majority of which are from the Arab Muslim communities. Services for these patients are provided mainly in the primary clinics, including follow-up care by family physicians and health care staff in the primary clinic. Chronic Care Model approaches have been used and are effective in managing diabetes in the primary care settings.

Over one billion Muslims fast during the month of Ramadan worldwide, when they abstain from eating and drinking until after sunset. Muslim patients in northern Israel adhere to this practice. Thus, for a full lunar month, Muslims undergo a radical change in lifestyle. It may be that this change in lifestyle affects the biochemical parameters in diabetic patients. To fast safely and without life-threatening complications, general guidelines are critically needed, mainly in drug treatment approach and especially in new drug treatments. Some patients are prohibited from fasting for medical reasons, and this decision will be made by a physician specializing in diabetic care or a diabetic nurse practitioner (NP-diabetes) with religious knowledge.

All patients with diabetes who wish to fast during Ramadan should be prepared to undergo a medical assessment and engage in a structured education program about fasting as safely as possible. Ramadan-focused education was shown to be beneficial in reducing hypoglycemia.

There is a need to adapt the therapeutic approach together with individualized care to improve the quality of diabetes treatment in special situations.

Objective:
To improve the quality of diabetic care, as evidenced by improvement in quality indicators, by including cultural and religious rules.

Methods:

The Process: Among the interventions that we conducted were:
1. District forums for family physicians and nurses with updates on various topics in the field of diabetes and metabolic syndrome (case studies)
2. Discussions focusing on unbalanced patients;
3. Designated days for telephone counseling were provided by a clinical specialist/diabetic nurse before the start of the month of Ramadan.
4. Lectures and meetings on diabetes and fasting during Ramadan are provided at the biggest primary clinics before the beginning of the month of Ramadan.

5. Establishment of a "Diabetes school" for family physicians, 6 meetings including lectures, case discussions and workshops before the beginning of the month of Ramadan. These lectures include: Presentations to all therapies and managing the medical treatment in preparation for the month of Ramadan and clarifying the eligibility of certain patients to fast according to the religious guidelines with the goal of improving the medication treatment.

6. Additionally, a video that contains recommendations on Facebook about fasting in Ramadan is provided for patients.

7. Within the framework of a diabetic clinic in Wadi Ara area in the north and in the Golan Heights: a physician specializing in diabetic care, a NP-diabetes and a dietician staff hold meetings two months before the month of Ramadan to discuss patients whose diabetes targeted goal is not met (i.e., diabetes not under control). Our recommendation was passed on and explained to the primary care physician and the nurse in the clinic for follow up treatments by them.

8. Broadcasting a daily educational radio program to the public in the Northern district focusing on diet and exercise during the month of Ramadan.

Results:
Our findings after this project show:

1. Improvement in quality indicators such as HbA1C and hypoglycemic incidents; the group of Muslim diabetic patients with HbA1C > 9% decreased from 11.6% to 10.1% with no incidents of hypoglycemia.

2. Cooperation between the nurses and physicians providing treatment has increased and led to higher satisfaction for all staff involved in diabetic treatment.

3. The video and recommendations for fasting on Ramadan on Facebook reached 4005 views.

4. Listeners to diabetes- and health care-related radio broadcasting programs in Ramadan reached 4223 persons.

5. Family doctors and nurses in primary clinics felt more effective and empowered.

Conclusion:
- Continuing these activities will balance and improve the quality in the treatment of diabetic patients.
- Increasing the involvement and communication between all clinical staff has higher effect for better treatment results.
- Educating the patients about their illness and empowering the patient has led to better cooperation with the medical staff and better quality medical results.
- Taking into consideration all cultural and religious in the treatment approach has led to better co-operation of the patient and the improvement in their medical status.
- This working model can be more successful if we include pharmacist from the primary clinic.

Title: Planned Medical Program for Ramadan's Fasting Diabetic Patients

Keywords: Arab Muslim communities, Diabetes and Ramadan-Fasting
Abstract Summary:

Over one billion Muslims fast during the month of Ramadan worldwide, when they abstain from eating and drinking until after sunset. To fast safely and without life-threatening complications to diabetic patients, we need to establish a culturally-appropriate educational program for health professionals, families and patients.

Content Outline:

1. **Background:**
   - In recent years, there has been an increase in the number of surveys focusing on the prevalence of diabetes and pre-diabetes among the Arab population in Israel. Particularly as the life expectancy is lower among Israeli Arabs than Israeli Jews, and this gap has widened. Also age-adjusted mortality as a result of heart disease, stroke, and diabetes remains higher in Arabs.
   - The Arab population are mostly located in northern Israel, where the Northern District of Meuhedet (health care organization connected to the national health system) serves approximately 15,500 diabetic patient, the majority of which are from the Arab Muslim communities. Services for these patients are provided mainly in the primary clinics, including follow-up care by family physicians and health care staff in the primary clinic. Chronic Care Model approaches have been used and are effective in managing diabetes in the primary care settings.
   - Over one billion Muslims fast during the month of Ramadan worldwide, when they abstain from eating and drinking until after sunset. Muslim patients in northern Israel adhere to this practice. Thus, for a full lunar month, Muslims undergo a radical change in lifestyle. It may be that this
change in lifestyle affects the biochemical parameters in diabetic patients4. To fast safely and without life-threatening complications, general guidelines are critically needed, mainly in drug treatment approach and especially in new drug treatments. Some patients are prohibited from fasting for medical reasons, and this decision will be made by a physician specializing in diabetic care or a diabetic nurse practitioner (NP-diabetes) with religious knowledge.

- All patients with diabetes who wish to fast during Ramadan should be prepared to undergo a medical assessment and engage in a structured education program about fasting as safely as possible5. Ramadan-focused education was shown to be beneficial in reducing hypoglycemia6.
- There is a need to adapt the therapeutic approach together with individualized care to improve the quality of diabetes treatment in special situations.

2. **Objective:**
   - To improve the quality of diabetic care, as evidenced by improvement in quality indicators, by including cultural and religious rules.

3. **The Process:** Among the interventions that we conducted were:
   - District forums for family physicians and nurses with updates on various topics in the field of diabetes and metabolic syndrome (case studies)
   - Discussions focusing on unbalanced patients;
   - Designated days for telephone counseling were provided by a clinical specialist/diabetic nurse before the start of the month of Ramadan.
   - Lectures and meetings on diabetes and fasting during Ramadan are provided at the biggest primary clinics before the beginning of the month of Ramadan.
   - Establishment of a "Diabetes school" for family physicians, 6 meetings including lectures, case discussions and workshops before the beginning of the month of Ramadan. These lectures include: Presentations to all therapies and managing the medical treatment in preparation for the month of Ramadan and clarifying the eligibility of certain patients to fast according to the religious guidelines with the goal of improving the medication treatment.
   - Additionally, a video that contains recommendations on Facebook about fasting in Ramadan is provided for patients.
   - Within the framework of a "Diabetic clinic" in Wadi Ara area in the north and in the Golan Heights: a physician specializing in diabetic care, a NP-diabetes and a dietician staff hold meetings two months before the month of Ramadan to discuss patients whose diabetes targeted goal is not met (i.e., diabetes not under control). Our recommendation was passed on and explained to the primary care physician and the nurse in the clinic for follow up treatments by them.
   - Broadcasting a daily educational radio program to the public in the Northern district focusing on diet and exercise during the month of Ramadan.

4. **Results** - Our findings after this project show:
   - Improvement in quality indicators such as HbA1C and hypoglycemic incidents; the group of Muslim diabetic patients with HbA1C > 9% decreased from 11.6% to 10.1% with no incidents of hypoglycemia.
   - Co-operation between the nurses and physicians providing treatment has increased and led to higher satisfaction for all staff involved in diabetic treatment.
   - The video and recommendations for fasting on Ramadan on Facebook reached 4005 views.
   - Listeners to diabetes- and health care-related radio broadcasting programs in Ramadan reached 4223 persons.
   - Family doctors and nurses in primary clinics felt more effective and empowered.

**Conclusions And Recommendations:**
- Continuing these activities will balance and improve the quality in the treatment of diabetic patients.
- Increasing the involvement and communication between all clinical staff has higher effect for better treatment results.
• Educating the patients about their illness and empowering the patient has led to better cooperation with the medical staff and better quality medical results.
• Taking into consideration all cultural and religious in the treatment approach has led to better co-operation of the patient and the improvement in their medical status.
• This working model can be more successful if we include pharmacist from the primary clinic.
• Increasing the support of close family members in the treatment program.

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