

CHAPTER 14

Identifying and overcoming barriers to guideline implementation

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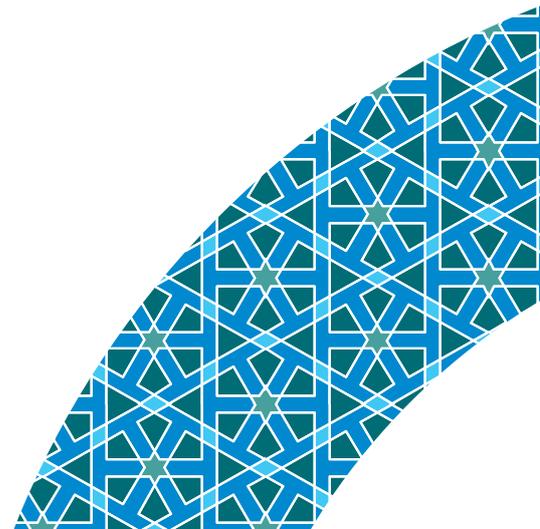
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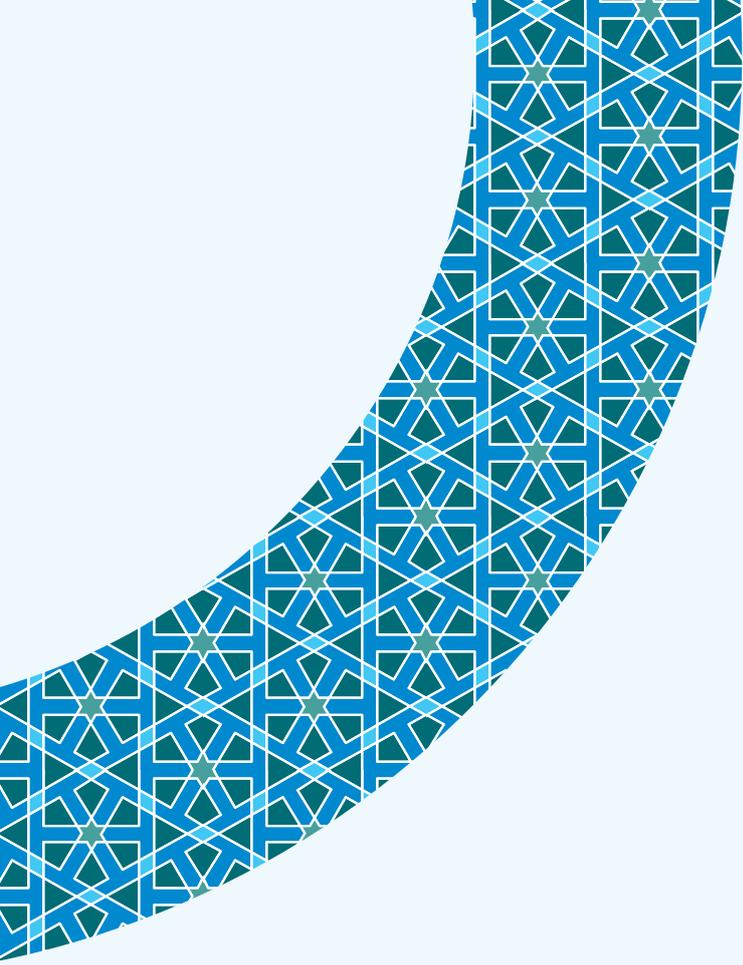
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CHAPTER 14

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WHAT IS KNOWN?

- Guidelines are important but only if they are adhered to and that is where implementation becomes key.
- Several barriers to guideline implementation exist including healthcare professional (HCP) awareness; socio-cultural sensitivity; and community, patient and healthcare system barriers.
- Innovative solutions to these barriers may include the use of technology.

WHAT IS NEW?

- In light of the Corona virus disease 2019 (COVID-19) pandemic, access to healthcare and guidance has plummeted.
 - This has led to new issues and barriers to guideline implementation
 - New innovative tools including telecommunication have become more prominent to improve access, but these are still not far-reaching enough.
- Work within communities including with community workers and Imams can prove to be beneficial in facilitating guideline implementation.

WHAT IS MISSING?

- Further research is needed on the impact of the COVID-19 pandemic and what it means for healthcare access, social interactions and ultimately guideline implementation.
- The use and access of telecommunication tools need to be improved to see its benefits for people with diabetes that fast all over the world during Ramadan.
- Understand how to integrate guidance into different healthcare systems across the world



1. INTRODUCTION AND THE IMPLEMENTATION OF GUIDELINES FOR DIABETES MANAGEMENT

Diabetes is a chronic disease requiring lifelong management [1]. Optimal management relies on the person with diabetes and healthcare professional (HCP) working in collaboration to control the patient's blood glucose levels and reduce diabetes-associated risks. For the individual with diabetes, this involves lifestyle changes, glucose-monitoring and often medical interventions [1]. Individual self-management is therefore key, and a supportive healthcare service is necessary to facilitate this. A number of global and national guidelines for the management of diabetes have been created to aid effective disease management and provide standards of care [1-4]. Furthermore, awareness of socio-cultural circumstances that may impact on diabetes management has increased. For example, several recommendations for the management of diabetes during the fasting period of Ramadan have been developed recently, along with educational programmes [5-8]. However, guidelines and educational resources are only of value if they are adhered to and several barriers to guideline implementation have been identified across communities, in both Muslim-majority and Muslim-minority countries.

The COVID-19 global pandemic, formally declared by the WHO since March 2020 has disrupted usual care and added additional barriers to the implementation of guidelines [9]. The effect of a global pandemic, and the changes to life that accompany it, need to be considered when producing, implementing and disseminating guidance.



1.1 Identifying barriers to guideline implementation

Barriers may arise on an individual level, for example with the person with diabetes or HCP or they may originate within the wider cultures of the community or healthcare system (**Figure 1**).

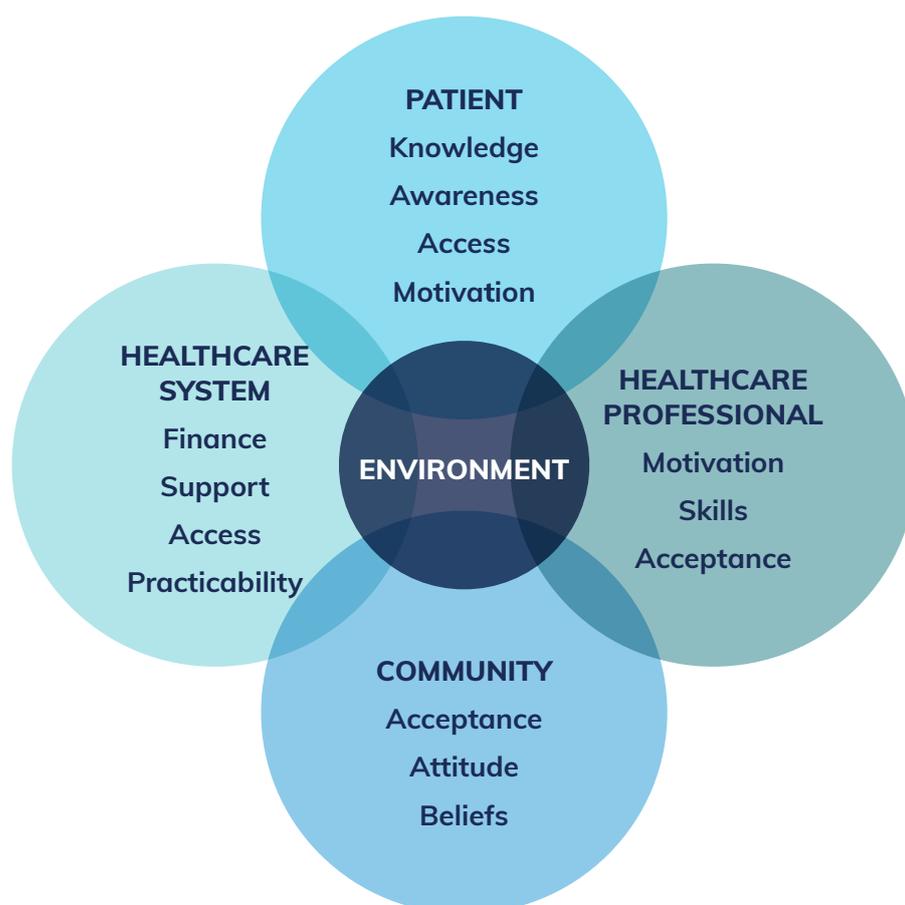


FIGURE 1

Barriers to guideline implementation span people with diabetes, healthcare professionals, healthcare systems and communities

Modifying established behaviour to achieve guideline recommendations is difficult; it can require changing personal beliefs and practices, as well as reshaping complex relationships within health services and within communities. A full understanding of these issues is critical for tailoring practical solutions. Some of the barriers to diabetes guideline implementation in communities, particularly during Ramadan, will be outlined in this chapter, alongside suggested strategies for overcoming them. This will also include the impact of the recent COVID-19 pandemic and the subsequent restrictions that have been placed on communities.

1.1.1 Community and patient barriers

To identify the barriers to diabetes guideline implementation related to the people with diabetes themselves, it is first important to understand individual perceptions of their condition,

both in general and in the context of Ramadan. There are several important physical barriers to achieving proper management of diabetes during Ramadan that include diet and physical activity. There are also important psychological factors that need to be considered as they can be more difficult to overcome, and these include longstanding personal beliefs, cultural practices and traditions.

Diet and exercise

Consumption of a high-fat and high-protein diet during Ramadan is a traditional behaviour that can be difficult to modify [10]. A prospective study of the dietary patterns of people with type 2 diabetes during Ramadan, who also underwent dietary counselling, revealed an increase in calorie intake during Ramadan with a significant increase in fat intake [10]. The study demonstrated that despite repetitive counselling on diet guidelines for Ramadan, compliance was poor [10]. Following a day of fasting, not only is there a desire to eat larger than normal meals, there is often an urge to eat them more quickly. Eating rates have been positively correlated with food intake, and eating too quickly can lead to overconsumption [11]. Eating habits, such as the frequency and timing of meals, also varies between countries, and this can impact the management of diabetes and the relevance of guidelines. For example, in some countries, the fast is broken with a light snack, followed by a large meal later in the evening, whereas in others a main meal is used to break the fast [7]. Increased exercise is also an important lifestyle modification for people with diabetes but this might be avoided in Muslim communities, both due to practical considerations, such as lack of time and services, as well as cultural circumstances and social expectations [12]. Moreover, the recent outbreak of SARS-CoV-2 leading to the COVID-19 pandemic has led to greater anxiety and fear over catching the virus and with government-imposed lockdowns and restrictions, marked reductions to physical activity have been seen.

Injections and skin pricks

In some communities, a social stigma may be attached to injecting insulin and alongside fears and misconceptions surrounding insulin treatment itself. These include ideas such as insulin being a forbidden substance, or insulin being able to cause disease [13, 14]. Indeed, over half of people with diabetes that were surveyed in Pakistan (N=210) felt that insulin would not reduce complications [15]. In the same survey, 41% had the impression that, even if absolutely necessary, they could not self-inject [15]. Moreover, women prefer not to expose parts of their body in public, which can limit the times that they can inject insulin or worse, this can lead to the injecting of insulin through clothing which can compromise needle sterility [13]. Moreover, it is believed by some that injecting insulin invalidates Ramadan fasting [7]. Many also feel that pricking the skin, an integral part of the blood glucose test, breaks the fast [7, 16]. In a retrospective observational study of glucose testing during Ramadan, 860 people with diabetes were surveyed in Pakistan [16]. The survey revealed that almost 40% of respondents who were taking insulin for their diabetes did not perform blood glucose tests during Ramadan, as they felt it would void the fast [16]. This problem also exists outside of Ramadan, where regular monitoring of blood glucose is insufficiently practised by people with diabetes in Muslim communities [17]. Therefore, it is imperative to explain to all people with diabetes, through culturally appropriate educational programmes, that insulin injection and/or blood glucose monitoring do not invalidate fasting during Ramadan.



Insulin injections or blood glucose monitoring through the piercing of skin

DO NOT INVALIDATE FASTING DURING RAMADAN

It is of vital importance that insulin treatment is taken and blood glucose levels are monitored frequently

Beliefs and attitudes

Many people with diabetes may not be aware that the Quran specifically exempts the sick (including those with diabetes) from fasting during Ramadan [14]. Of those that are aware, many still wish to honour their tradition and beliefs and insist on fasting [5].

In some countries, people with diabetes may be dismissive of non-medical doctor HCPs such as pharmacists, nurses and dieticians [14]. There may also be differences in cultural backgrounds and the primary spoken language between HCPs and people with diabetes, both within Muslim-majority and Muslim-minority countries where Muslim migrants are a key demographic [18, 19]. Moreover, female individuals with diabetes may be particularly uncomfortable consulting male physicians [13]. As such these factors can significantly obstruct the development of a strong patient-doctor relationship, which is necessary for effective diabetes management.

Cultural differences can also make the implementation of diabetes guidelines within Muslim communities more difficult.

The government restrictions imposed on communities due to the COVID-19 pandemic, such as lockdown and self-isolation policies to reduce physical contact, hampered the ability of individuals to access healthcare facilities. This was further compounded during times when viral transmission was at its highest and efforts were made to reduce visits to hospitals. Indeed, the effects of the pandemic are far-reaching, with it causing significant changes to the daily lives of individuals including economic hardship, social deprivation [20] and detrimental effects to mental health [21]. Importantly from the perspective of diabetes, the effects of COVID-19 may include reductions in the adherence to medical treatment and lifestyle changes, but also to motivation in that access to a large portion of their support network was reduced. Though telecommunication strategies were adopted to improve healthcare access, this did not provide full coverage, and many were left without access. Face-to-face meetings and assessments remain very important in providing the maximum level of care.

1.1.2 Barriers involving HCPs and healthcare systems

Barriers to guideline implementation originating among HCPs can arise from numerous factors, such as a lack of skills or knowledge, cultural competence and awareness of patient needs [22]. Indeed, a lack of medical knowledge of fasting and diabetes among general practitioners in France resulted in the provision of inaccurate advice to patients during Ramadan, alongside inadequate patient education [23]. The EPIDIAR study, which was carried out across 13 Muslim-majority countries, revealed that around a third of HCPs did not provide any recommendations at all about fasting to their Muslim diabetes patients during Ramadan [17]. There are signs that awareness of Ramadan recommendations and guidelines are increasing; however, in Muslim-minority countries the evidence suggests that use of guidelines remains low [24, 25]. Studies have also shown a lack awareness of Ramadan guidelines among pharmacists [26, 27]. One study in Qatar found that less than half of pharmacists referred to published practice guidelines and only 20% and 8.3% were aware of and had read the American Diabetes Association (ADA) Consensus document on fasting during Ramadan and the decree of the Organisation of Islamic conference respectively [26]. Interestingly, 20% of pharmacists interviewed were concerned about offering advice that was contradictory to that provided by the physician [26]. The views of others may play a significant role in guideline implementation and some HCPs may find it hard to accept guidance that conflicts with the opinions of colleagues or indeed their own religious beliefs. A lack of training, both in general diabetes management and Ramadan diabetes management is also a critical issue [28].

Barriers to guideline implementation within the wider healthcare systems will vary across and within countries, but typically comprise issues relating to service availability, accessibility and acceptability, continuity of care and finance [19, 29, 30]. Location (rural versus urban), healthcare infrastructure and patient awareness of services on offer can all affect the availability and accessibility of services to patients. Accessibility can also be affected by financial and linguistic barriers, preventing patients accessing adequate care once in a service [19, 30]. Indeed, low- and middle-income countries often do not have the resources to provide adequate medical care, diagnosis and testing for diabetes [30]. Barriers to acceptance arise from the patients' perception of a service, reflecting key elements in the development of patient-doctor relationship such as trust, cultural awareness and mutual respect [19]. Poor communication between primary and secondary care, high staff turnover, or lack of consistent messaging (for example on lifestyle and medication) will prevent continuity of care, which in turn can prevent the formation of an effective relationship between patient and doctor. Telecommunication has increased as a direct result of the COVID-19 pandemic. This includes more telephone triage and remote consultations which can be very useful for quick initial assessments. HCPs should have training to become more adept in these new methods of working to ensure primary care is sustainable and that workloads can be manageable [31].

1.2 Overcoming barriers to guideline implementation

There are several important barriers that need to be considered in attempting to implement guidelines. The first step in overcoming these barriers is to fully understand them; this enables appropriate practical responses to be configured and implemented (see **Table 1**).



Technological barriers

Technology has proved to be a very useful tool in helping to implement guidance in communities. The use of mobile phones is a great example of this; text messaging has been successful in acting as reminders and providing follow up to people with diabetes. Text messaging can help access communities quickly and conveniently and can help cross language barriers where written information can easily be translated into different languages. Senegal is a great success story in being the first country within Sub-Saharan Africa to implement the mDiabetes programme successfully and have seen great benefits to people with diabetes fasting during Ramadan [32]. The specialised International Telecommunication Unions (ITU) United Nations (UN) agency and the World Health Organization (WHO) have teamed up to push these initiatives to help overcome technological barriers but also to provide innovative solutions to access and education. The recent launch of the ITU-WHO Technology should, therefore, be prioritised as a means to not only enhance guidance but also to help facilitate the implementation of guidelines.

Working within communities

It is very important to get involved at the community level to help overcome barriers to guideline implementation. Working together with Imams is a good example of where efforts must be focused. In a study conducted in London it was shown that pregnant women with diabetes sought advice from Imams rather than from HCPs [33]. This also highlights the fact that HCPs need to be more proactive in reaching people with diabetes prior to Ramadan rather than waiting for them to seek advice.

In addition, equally important is making use of community workers. Community workers can help spread awareness to people in their community and ultimately enhance access to guidelines. They can also act as points of education if they are appropriately trained themselves to provide guidance or advice. (Please see **chapter 7: Pre-Ramadan Assessment and Education** for further information).

TABLE 1: BARRIERS TO GUIDELINE IMPLEMENTATION AND SOLUTIONS ON HOW TO OVERCOME THEM

Barriers to guideline implementation	Overcoming these barriers	Who are the actors?
Patient beliefs and attitudes about injections, blood monitoring and Ramadan fasting exemption	Ramadan-focussed diabetes education is widely recommended and has proven to be effective [8, 34]. In both Muslim-majority and Muslim-minority countries, it may be necessary to first provide education to HCPs, to both increase their awareness of the range of guidelines available which will then ensure they are providing optimal advice to patients.	<ul style="list-style-type: none"> • Regional, national and international organisations • Teamwork between HCPs and Imams ensuring that their diabetes and Ramadan knowledge is sound. Many patients prefer asking the imam and not the healthcare professionals • HCP should be more proactive to address Ramadan related issues rather than wait for patients to ask. • Community and family-centric educational programmes can also help to reshape traditional views and drive successful outcomes [8].

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TABLE 1: BARRIERS TO GUIDELINE IMPLEMENTATION AND SOLUTIONS ON HOW TO OVERCOME THEM

Barriers to guideline implementation	Overcoming these barriers	Who are the actors?
HCP barriers: Lack of skills, knowledge, cultural competence and awareness of patient needs	<ul style="list-style-type: none"> HCPs may need additional training to ensure they have the appropriate skills to deliver optimal diabetes management strategies. Patient beliefs should be used as a foundation for building educational programmes and education should be tailored to the recipient's culture and literacy [29, 35]. For example, when educating about diet, HCPs should have the knowledge to ensure traditional foods and foods compatible with the patient's economic situation are included within dietary plans [35]. 	<ul style="list-style-type: none"> Specialists should be motivated to advocate guidelines in order to both educate and motivate other health workers, as well as provide confidence among staff that a unified message is being disseminated. Religious leaders should be involved in community-level educational programmes, to ensure that patients receive advice combining religious and medical directives [14].
Communication barriers between patients and HCPs	<ul style="list-style-type: none"> HCPs must take care to convey the importance of the patient's role in the management of diabetes, while being sensitive to socio-cultural circumstances [29]. Cultural competency minimises misunderstandings, resulting in better communication and overall care [36]. HCPs should take practical steps to respond to patient values, for example, providing a female doctor or chaperone to female patients who may be uncomfortable seeing a male physician [13]. HCPs should monitor the adherence of patients to diabetes advice (e.g. through the use of patient diaries); [37]. 	Efforts from both HCPs and patients to build a trusting therapeutic alliance
Lack of access to care. This barrier is exacerbated during lockdown restrictions in the midst of the COVID-19 pandemic	<ul style="list-style-type: none"> Cross-discipline communication and continuity of care can help with the implementation of guidelines, by providing consistent messages to patients and ensuring the development of a trusting therapeutic alliance [29]. Technology can also be used to improve diabetes management [38]. In the absence of head-to-head consultation due to lockdowns or other restrictions that are in place to limit the transmission of SARS-CoV-2, mobile messaging and applications (including medication reminders and diet and lifestyle plans) and webinars through social media can promote disease awareness and provide support for self-management [38]. The effectiveness of mobile phone-based short message service (SMS) intervention is currently being tested [39]. 	<ul style="list-style-type: none"> Health care services should take responsibility to raise awareness of available materials, both among staff and patients. Services could adopt reminder systems, for example, the provision of prompts to remind HCPs to provide Ramadan fasting advice to each patient in their pre-Ramadan consultations. Technology services to help implement and improve accessibility to mobile applications and webinars through social media platforms.
A lack of resources in some low- or middle-income Muslim-majority countries (this is more evident in COVID-19 pandemic)	Effective resource management is necessary to ensure the provision of optimum diabetes care.	Collaboration within medical teams and the use of agreed protocols can be beneficial [40]

Many of the barriers outlined in **Table 1** could be overcome by the provision of comprehensive diabetes education, both for patients and HCPs (**Figure 2**). Combining targeted education with a series of further actions across communities and health services, such as skills training,



improved communication, use of planning aids, establishment of support networks and resource management, can together help foster stronger patient-doctor relationships; the basis for effective guideline implementation (**Figure 2**). In addition, the evaluation and audit of guideline implementation strategies can provide opportunities to re-assess and improve upon implementation plans to help become more efficient and resourceful [41].

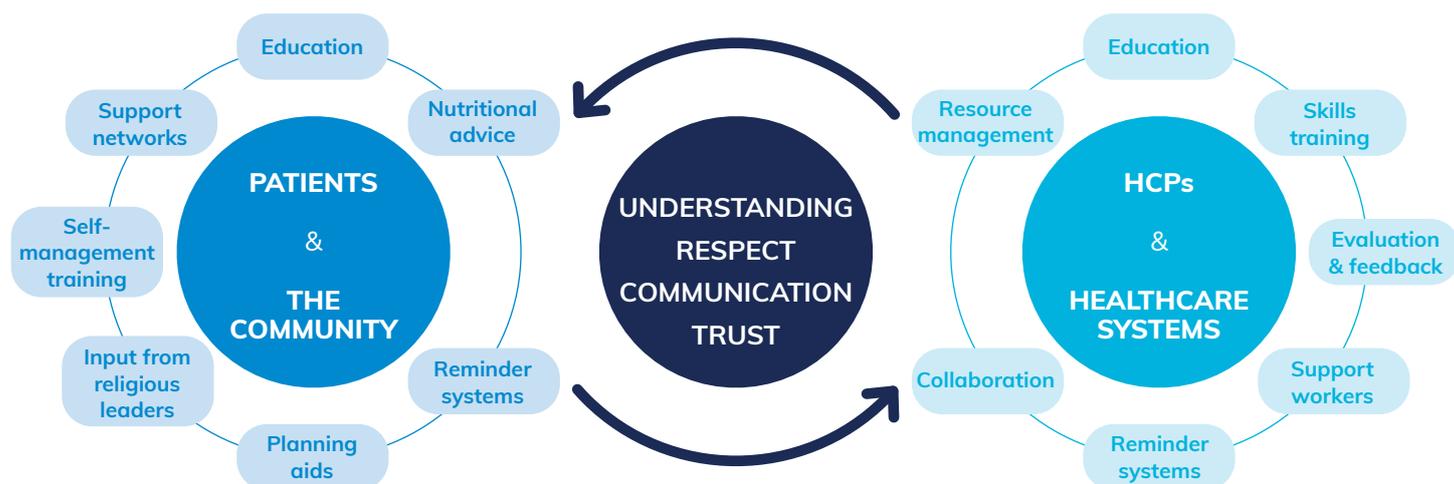


FIGURE 2
Multiple approaches for overcoming barriers to guideline implementation

In one study, HCPs attended an educational Ramadan and diabetes workshop to gain an understanding of the issues surrounding diabetes and fasting alongside a culturally specialised dietician, before providing pre-Ramadan education to patients. Patients were recruited and motivated to attend the sessions by a community link worker [8]. The study found that patient education was associated with weight loss and a significant reduction in hypoglycaemic events during Ramadan [8]. Similar findings were seen in other studies evaluating different approaches to pre-Ramadan education including one-to-one education sessions and group sessions but also through different professionals delivering the pre-Ramadan education such as medical doctors, dieticians or community link workers; all proved to be successful in improving outcomes in people with diabetes that fasted during Ramadan [33, 42-44] (for further information please see **chapter 7: Pre-Ramadan Assessment and Education**). Overall, multiple strategies for raising awareness of the issues that people with diabetes face during Ramadan should be encouraged.

Taken together, the recognition of barriers to guideline implementation is crucial in establishing targeted solutions to overcome them. Ultimately, the education of all stakeholders involved in guideline development and implementation is fundamental in ensuring the provision of optimal diabetes management, particularly during Ramadan.

SUMMARY

- Diabetes guidelines and educational resources are only of value if they are adhered to by both HCPs and people with diabetes.
- Several barriers to guideline implementation have been identified, originating with the individual (the person with diabetes or the HCP) or within the wider cultures of the community or healthcare system.
- Barriers to guideline implementation include a lack of awareness of guidelines, poor patient-HCP communication such as any disconnects between expectations and goals, difficulties in changing individual behaviours associated with tradition and individual misconceptions of Ramadan and diabetes.
- The COVID-19 pandemic restrictions including lockdowns and limitations to access of face-to-face consultations is an additional barrier for the implementation of guidelines. Promoting technology to access to live webinars, phone messages and application may be solutions, although these cannot be used with all patients (for example in low- and middle-income regions or the elderly).
- Key solutions to overcoming barriers include raising HCP awareness of the key issues surrounding diabetes and Ramadan and providing effective, socio-culturally sensitive education.
- Technology such as live webinars, phone messages and applications may provide solutions. Although these may not be available to all individuals (such as those in low- or middle-income countries or some elderly people) and access must also be improved.



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