

Diabetic Care Challenges during COVID-19 Pandemic: Primary Healthcare Physicians' Perspective

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Abstract

Background: Diabetes mellitus (DM) is the leading chronic disease worldwide. During the COVID-19 pandemic, primary healthcare centers were the main entry point for patients with diabetes. Additionally, the COVID-19 pandemic strained the primary healthcare system, including diabetic care.

Objective: This study aimed to carry out an assessment of diabetes care challenges from the perspective of primary care physicians during the COVID-19 pandemic in Bisha, Saudi Arabia.

Method: This cross-sectional study was conducted between 1 May 2021 and 30 June 2021 in primary health centers using a self-report questionnaire from PHC physicians. Challenges in providing health services for type 2 diabetes were assessed. Statistical analysis was conducted with SPSS software using descriptive statistics, T-tests, chi-square tests, and the ANOVA test. Statistical significance was set at $p < 0.05$.

Results: Two hundred and twenty-two primary care physicians participated in the study. Half of them, 114 (51%), had adequate confidentiality in treating patients with COVID-19. The majority of participating physicians (216; 97.3%) faced challenges in managing diabetic patients during the COVID-19 pandemic (p -value ≤ 0.05). Male, non-Saudi physicians > 40 years, working in rural areas, without training were more likely to have faced challenges managing DM patients during COVID-19 (p -value ≤ 0.05).

Conclusions: Most PHC physicians face challenges in managing patients with diabetes mellitus who have COVID-19. Decision makers should increase preparedness for future emergencies to address the significant challenges identified.

Keywords: primary healthcare; physicians; COVID-19; chronic diseases; diabetes

Introduction

In most countries, patients typically make physical contact with the healthcare system, especially for chronic and non-communicable diseases (NCDs). The COVID-19 closures led to a significant decrease in the healthcare consultation rate [1]. The PHC system was constrained by weak infrastructure during the 2019 coronavirus epidemic (COVID-19), contributing to suboptimal patient safety and infection control measures [2]. The Australian experience highlights the importance of self-care and the adoption of preventive measures, particularly for people with long-term chronic conditions who frequently use health services [3–5]. Improvements in the care and behavior related to chronic health problems reduced hospitalizations and severe health events [6–9]. More than one-tenth of the confirmed COVID-19 cases in Afghanistan involved physicians and other healthcare workers, suggesting that the war-torn country is struggling to cope with the pandemic. Many healthcare workers felt that strengthening teams and regular contact could help them discuss decisions and review their well-being [10]. Some countries have the infrastructure to establish audio/telephone consultations and telemedicine visits [11]. Recent data showed that complications were more common in people with severe and non-severe COVID-19. A strategic continuation of health services is needed to avoid the exacerbation of diabetes due to the lack of access to care. Because of the COVID-19 pandemic, PHC centers limited or eliminated in-person clinic visits [12–14]. In developing countries such as Pakistan, disease outbreaks are among the most critical challenges to providing health services. Lack of basic health facilities, inadequate policies, and indifferent attitudes toward general protective measures exacerbate the situation [15,16]. In Saudi Arabia, DM is the second most common chronic disease compared with other middle east countries [17]. Critical challenges remain despite the tremendous work and valuable improvements in the primary care system. Improving gaps in the referral system will lead to better services [18]. This study aimed to assess the diabetes care challenges from the perspective of primary care physicians during the COVID-19 pandemic in Bisha, Saudi Arabia.

Methods

Study Design and Settings

This is a cross-sectional PHC-based study among PHC physicians at health centers under the Bisha Health Affairs. PHC centers belonging to the Bisha Health Affairs are large catchment areas, including the nearest provinces (Belgaran, Tathleeth, Al Amoha) in the Asir region, Saudi Arabia.

Study Population

All physicians working in PHC centers belonging to the Bisha Health Affairs between 1 May 2021 and 30 June 2021 were included in the study. Physicians on vacation during the data collection period and those not dealing with diabetes patients were excluded from the study.

The majority of PHC physicians were family physicians. However, other physicians, including pediatricians, obstetricians, gynecologists, and internal medicine physicians, share in providing services in the PHC in Saudi Arabia.

Data Collection

Data collection was conducted using a self-administered questionnaire to explore the challenges of providing healthcare services for type 2 diabetes from the perspective of PHC physicians.

The questionnaire was designed to achieve the study objectives based on the opinions of five experts and the review of a similar study [19]. A statistician checked the validity of the questionnaire. Some questions were modified based on the feedback and then sent to the email addresses of PHC physicians via a Google form after approval from the health administration. The questionnaire contained 14 questions divided into two sections. The first section contained questions about physician demographics. The second section addressed questions about the main diabetes care challenges that PHC physicians face from their perspective, including the inability to have face-to-face management, the inability to adjust treatment, and the inability to obtain prescriptions.

Statistical Analysis

Statistical analysis was conducted with SPSS software using descriptive statistics, t-tests, chi-square tests, and the ANOVA test. Statistical significance was set at $p < 0.05$.

Results

Two hundred and twenty-two physicians providing diabetic care in PHC in Bisha province in southwestern Saudi Arabia participated in this study. Most participants were male (126; 56.8%), non-Saudi (220; 99.9%), and > 40 years (130; 58.6%). Almost half of them reported significant problems encountered by patients during the COVID-19 pandemic.

Of those who received formal training on managing diabetic patients during the current pandemic of COVID-19, 102 (45.9%) faced challenges. Of the considerable number of PHC physicians, 111 (50%) experienced problems during the COVID-19 pandemic; of them, 67 (30.2%) felt that they were unable to have a face-to-face conversation, 34 (15.3%) were unable to adjust treatment, and 10 (4.5%) were unable to obtain prescriptions. Data collection was conducted using a self-administered questionnaire to explore the challenges of providing healthcare services for type 2 diabetes from the perspective of PHC physicians. Male physicians, non-Saudi, > 40 years old, working in rural areas, and those not receiving training on how to deal with Covid cases were more likely to have challenges in dealing with DM patients with COVID-19 (p-value \leq 0.05), as shown in (Table 1).

Table 1. Characteristics and challenges of PHC physicians caring for diabetic patients during the COVID-19 pandemic, Bisha, Saudi Arabia (n = 222).

Characteristics	Challenges No (%)			Total No (%)	p-Value	
	Inability to Adjust Treatment	Inability to Have Face to Face Management	Inability to Obtain Prescriptions			
Sex	Female	14 (6.3)	30 (13.5)	4 (1.8)	96 (43.2)	0.02
	Male	20 (9)	37 (16.7)	6 (2.7)		
Nationality	Non-Saudi	33 (14.9)	67 (30.2)	10 (4.5)	220 (99.1)	0.05
	Saudi	1 (0.4)	0 (0)	0 (0)		
Age	> 40	17 (7.7)	40 (18)	8 (3.6)	130 (58.6)	0.05
	< 40	17 (7.7)	27 (12.2)	2 (0.9)		
Profession	Family Physician	32 (14.4)	55 (24.8)	8 (3.6)	206 (92.8)	0.05
	Others	2 (0.9)	12 (5.4)	2 (0.9)		
Place of work	Urban	18 (8.1)	54 (24.3)	4 (1.8)	76 (34.2)	0.03
	Rural	16 (7.2)	13 (5.9)	6 (2.7)		
Received Training		20 (9)	67 (30.2)	10 (4.5)	102 (45.9)	0.00
Total		34 (15.3)	67 (30.2)	10 (4.5)	222 (100)	

COVID-19, coronavirus disease 2019; PHC, primary healthcare.

In this study, 216 (97.3%) physicians faced challenges when dealing with diabetic patients during COVID-19. During the current pandemic of COVID-19, 130 (58.6%) PHC physicians worked at usual capacity, in addition to 28 above capacity and 64 below capacity in Bisha Health Affairs. During COVID-19, counseling was provided by scheduled visits (178; 80.2%) and by telemedicine (WhatsApp; 44; 19.8%). Most PHC centers (146; 65.8%) witnessed a decrease in patient numbers during the COVID-19 pandemic. In comparison, 32 (14.4%) PHC centers depicted an increase in the number of patients, while 44 (19.8%) PHC centers had the same number of patients during the COVID-19 pandemic. A total of 186 (83.8%) PHC physicians thought the COVID-19 pandemic would affect the treatment outcomes. Most PHC physicians (189; 85.1%) provided direct care to patients confirmed of having COVID-19. Approximately 171 (77%) physicians offered face-to-face contact (within 1 m) with a patient who had COVID-19 verified at a healthcare facility. The majority of PHC physicians (212; 95.5%) had some degree of confidence in dealing with patients with COVID-19 (Table 2).

Table 2. Assessment of diabetes care challenges faced by PHC physicians during the COVID-19 pandemic, Bisha, Saudi Arabia (n = 222)

Assessment Question Items	Response	No (%)
Did you face a challenge dealing with patients with diabetes mellitus having COVID-19?	Yes	216 (97.3)
	No	6 (2.7)
How is the working capacity of the PHC facility during the COVID-19 pandemic?	Below capacity	64 (28.8)
	Above capacity	28 (12.6)
	With usual capacity	130 (58.6)
	Scheduled visit	178 (80.2)
Have you provided counseling during COVID-19?	Telephone/WhatsApp	44 (19.8)
	Decreased	146 (65.8)
Did the number of patients increase or decrease during COVID-19?	Increased	32 (14.4)
	Stayed the same	44 (19.8)
Do you think the COVID-19 pandemic will affect the treatment outcomes?	Yes	186 (83.8)
	No	36 (16.2)
Did you provide direct care to a patient confirmed to have COVID-19?	Yes	189 (85.1)
	No	33 (14.9)
Did you have face-to-face contact (within 1 m) with a patient confirmed of having COVID-19 in a healthcare facility?	Yes	171 (77)
	No	51 (23)
	A little confident	22 (9.9)
	Somewhat confident	76 (34.2)
Did you feel confident in dealing with patients with COVID-19?	Confident	86 (38.7)
	Very confident	28 (12.6)
	Not confident at all	10 (4.5)

Discussion

Diabetic care challenges during the COVID-19 pandemic from the perspective of PHC physicians are vital in dealing with COVID-19 and similar future conditions [18].

Diabetes mellitus is a chronic disorder, and morbidity increases with disease duration and age. During the COVID-19 pandemic, most mortalities were observed in patients with comorbid conditions, such as diabetes. The focus of doctors who work in PHC centers was the control of the COVID-19 pandemic. Therefore, routine clinical visits and blood glucose monitoring were hampered due to social distancing and fear. Reasonable glycemic control might help reduce disease severity [20,21].

PHC clinicians support patients with diabetes, help them reduce related complications, and maintain a good lifestyle [22–24]. In this study, we found that 80.2% of patients with diabetes in the Bisha region were counseled during their scheduled visits. The remaining 19.8% were counseled via telephone or WhatsApp. Even though a small portion of patients could not visit their doctors regarding scheduled visits, there were no significant changes. Many doctors (83.8%) felt that the COVID-19 pandemic affected the treatment outcomes of some patients. The inability to have face-to-face management was greatest during the COVID-19 pandemic. With the introduction of 'social distancing,' technology may help maintain an acceptable level of service quality [14]. Prescribing disruptions can

be prevented despite overall visit reductions. The results also showed no direct relationship between the frequency of visits and glycemic control [25]. During the COVID-19 pandemic, PHC services were the primary contact point for patients with diabetes. Most PHC centers worked in a normal representative capacity, and patients with diabetes could make their scheduled visits to the Bisha region.

Conclusions

Most PHC physicians face challenges in managing patients with diabetes mellitus who have COVID-19, including the inability to have face-to-face management, adjust treatment, and provide prescriptions. Planning decision makers should increase preparedness for future emergencies to address the significant challenges identified.

Limitations of the Study

A consistent approach limits this study because each physician has a unique approach and way of working with patients and promoting their health. Physicians belong to different training backgrounds that may be compatible with some patients. This difference may affect the answers to the research questions.

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Informed Consent Statement: Obtained from all the participants of the study.

Data availability Statement: Data sharing is not applicable.

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Conflicts of Interest: The author declares no conflict of interest.

Ethical Approval: This study was conducted in accordance with the Declaration of Helsinki.

Abbreviations

COVID-19: coronavirus disease 2019; PHC, primary healthcare; NCDs, non-communicable diseases; OPD, outpatient department.

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