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Self-monitoring of blood glucose in gestational diabetes mellitus patients during the COVID-19 pandemic in low- and middle-income countries

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Abstract

Self-monitoring of blood glucose (SMBG) is critical for gestational diabetes mellitus (GDM) care. However, there are several hurdles to its practice during the coronavirus disease 2019 (COVID-19) pandemic in GDM patients in low- and middle-income countries when GDM care recommendations emphasize telemedicine-based care. Based on available knowledge, this letter proposes the following barriers to SMBG in these GDM patients during the ongoing COVID-19 pandemic: Poor internet connectivity, affordability of SMBG and digital applications to connect with healthcare providers, government-imposed social mobility restriction, psychological stress, and mental health conditions. Nevertheless, definitive evidence will only be acquired from rigorous research.

Key Words: COVID-19; Gestational diabetes; Blood glucose monitoring; Self-monitoring; Developing countries; Patient compliance

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Core tip: The barriers to self-monitoring of blood glucose (SMBG), one of the main treatment components in gestational diabetes mellitus (GDM), remain underexplored among women in low and middle-income countries during the ongoing coronavirus disease 2019 (COVID-19) pandemic when the emphasis is on telemedicine-based care. Based on the facts known in this context, plausible barriers to SMBG in GDM patients include: Poor internet connectivity, affordability of SMBG and digital applications to connect with healthcare providers, government-imposed lockdowns to decrease COVID-19 transmission, psychological stress, and mental health conditions. However, only definitive research will provide the correct answers.

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TO THE EDITOR

Self-monitoring of blood glucose (SMBG) is one of the chief components of gestational diabetes mellitus (GDM) management to curb gestational hyperglycemia and perinatal complications[1]. Therefore, it is imperative to evaluate the SMBG practice among GDM patients living in low- and middle-income countries during the ongoing coronavirus disease 2019 (COVID-19) pandemic. In these women, pregnancy is often challenging due to poverty, lack of information, poor and inadequate quality services, teenage pregnancies, and cultural beliefs[2,3]. The COVID-19 pandemic has further compounded their GDM care. Presently, our knowledge on the barriers to SMBG practice in GDM patients during the COVID-19 pandemic remains sparse. I discuss here the possible barriers and intricacies of SMBG practice in GDM patients during this pandemic in the light of what is known; however, only definitive research will produce the answers.

The mobile-based technologies' role in ensuring SMBG compliance in GDM patients has become crucial in the COVID-19 pandemic[4]. The interim recommendation during the pandemic emphasizes sending SMBG reports electronically to healthcare providers (HCP) 2-3 wk after the first diabetes evaluation[5]. Then, the HCP determines the subsequent SMBG frequency based on glycemic control[5]. However, universal access to such telemedicine-based healthcare services is questionable in low- and middle-income countries, primarily due to the lack of uniform internet access[6,7].

Performing SMBG and sending the results to HCPs digitally incur costs for items like lancets, glucose reading meters, and featured smartphones. It might be expensive for GDM mothers in low- and middle-income nations, relying on out-of-pocket expenses[8]. This situation might have worsened due to the pandemic-led job losses and financial crisis[9].

There are challenges due to COVID-19-lockdown-led social immobility. Telemedicine-based GDM care is not accessible to every woman in the developing world, and many GDM patients have to rely on direct HCP-guided SMBG practice. Data from two Indian studies on nongestational diabetes patients suggest poor SMBG compliance during the COVID-19 lockdown period (28%-65%)[10,11]. Therefore, such government-imposed lockdowns are likely to be barriers for GDM patients, and studies are required to investigate it. Moreover, research is essential to determine if complying with COVID-19-related safety mandates (such as frequent handwashing, wearing a face mask, and social distancing) have complicated SMBG adherence in GDM patients.

For many GDM patients, additional pandemic-associated hurdles might include minimal or no direct family or peer support at home due to COVID-19-related quarantine requirements (of themselves or family members). Family support is crucial for the mental health of pregnant women during the COVID-19 pandemic[12].

Finally, psychological stress and mental health conditions due to the pandemic such as the death of close relatives, COVID-19-related mobility restrictions, and financial crisis also require scrutiny. According to an online survey, a substantial proportion of pregnant women presented with some mental disorder (about 37%) and increased stress levels (about 46%) during the COVID-19 pandemic [13]. Therefore, it is crucial to review the possibility of integrating mental health screening with antenatal care during the COVID-19 pandemic. The HCPs providing prenatal services may require additional training to perform such screening.

Altogether, given these scenarios, the COVID-19 vaccination drive is crucial to decrease social immobility restrictions, ensure women's economic empowerment, and establish easy direct contact with their HCPs so that SMBG practice among GDM patients remains uninterrupted in developing nations. Simultaneously, efforts to establish better telemedicine services and foster psychological counseling to overcome pandemic-associated stress are also desirable.

FOOTNOTES

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