Challenges of self-monitoring of blood glucose in gestational diabetes mellitus patients during the COVID-19 epoch in low- and middle-income nations

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

Key Words: COVID-19; Diabetes; Gestational; Blood glucose self-monitoring; Developing countries; Patient compliance


Core Tip: The barriers of self-monitoring of blood glucose (SMBG), one of the main treatment components in gestational diabetes mellitus (GDM), remain underexplored among women of low and middle-income nations 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 of SMBG in GDM patients include poor internet connectivity, affordability of SMBG and digital applications to connect to the healthcare providers, government-imposed lockdowns to decrease COVID-19 transmission, psychological stress, and mental health conditions. However, definitive research will only produce the correct answers.

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’s imperative to evaluate the SMBG practice among GDM patients living in low and middle-income nations 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\[^2,3\]. Indubitably, the COVID-19 pandemic has further compounded their gestational care. Presently, our knowledge on the barriers of SMBG practice in GDM patients during the COVID-19 pandemic remains sparse. Henceforth, I attempted to discourse here the plausible barriers and intricacies of SMBG practice in GDM patients during this pandemic in the light of what is known; however, definitive research will only produce the correct answers.

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

Next, SMBG practicing and sending its report to the HCP 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 further due to the pandemic-led job loss and financial crisis\[^9\].

Then, are the challenges due to COVID-19-lockdown-led social immobility. It’s vital since 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 non-GDM type diabetes patients suggest a relatively
poor SMBG compliance during the COVID-19-led lockdown period (28%-65%)\textsuperscript{[10,11]}. Therefore, such government-imposed lockdowns are likely to be barriers in GDM patients, and studies are required to investigate it. Moreover, research is essential to determine if complying with the COVID-19 related safety mandates (like 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 member/s). Family support is crucial for the mental health of pregnant females during the COVID-19 pandemic\textsuperscript{[12]}.

Finally, psychological stress and mental health conditions due to the pandemic like the death of close ones, COVID-19-related mobility restrictions, and financial crisis also require scrutiny. According to an online survey, a substantial proportion of pregnant females presented with some mental state disorder (nearly 37\%) and increased stress levels (about 46\%)\textsuperscript{[13]}. Therefore, it’s 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.
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