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Breaking down barriers to bariatric care: a qualitative study on how telemedicine could transform patient experiences in a Swiss monocentric setting

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ABSTRACT

Objective Telemedicine is becoming an increasingly feasible option for patients with chronic diseases due to its convenience, cost-effectiveness and ease of access. While there are certain limitations, the benefits can be appreciated by those seeking repetitive care. The perception of telemedicine as an alternative to recurrent, in-person appointments for patients with obesity in structured bariatric programmes is still unclear. This content analysis' primary endpoint was to explore how patients within our bariatric programme perceived telemedicine and virtual consultations as a new way of communication during COVID-19.

Design A qualitative study using semistructured interviews and qualitative content analysis method by Elo and Kyngäs following four steps: data familiarisation, coding and categorising with Quirkos software and final interpretation guided by developed categories.

Setting University Hospital, Switzerland.

Participants We conducted 33 interviews with 19 patients from a structured bariatric programme.

Results Most patients shared positive experiences, acknowledging the convenience and accessibility of virtual appointments. Others voiced concerns, especially regarding telemedicine's limitations. These reservations centred around the lack of physical examinations, difficulties in fostering connections with healthcare providers, as well as barriers stemming from language and technology. The research identified a spectrum of patient preferences in relation to telemedicine versus in-person visits, shaped by the immediacy of their concerns and their availability.

Conclusion While telemedicine is increasingly accepted by the public and provides accessible and cost-effective options for routine follow-up appointments, there are still obstacles to overcome, such as a lack of physical examination and technological limitations. However, integrating virtual alternatives, like phone or video consultations, into routine bariatric follow-ups could improve continuity and revolutionise bariatric care.

STRENGTHS AND LIMITATIONS OF THIS STUDY

⇒ The qualitative design facilitates a comprehensive exploration of patient experiences, emotions and perceptions in bariatric care telemedicine, generating rich and nuanced data.
⇒ Qualitative research provides a contextual understanding of telemedicine's effectiveness, capturing intricate patient–provider dynamics, fostering flexibility in data collection and offering real-world insights into unanticipated barriers and facilitators within the holistic context of bariatric care.
⇒ Qualitative studies often demand significant time and resources for data collection, transcription and analysis, making it potentially less feasible for large-scale implementation.

INTRODUCTION

Telemedicine has grown fast in healthcare, using technology to provide distant medical services and consultations. This novel strategy allows patients to interact electronically with healthcare providers via video conferences, phone calls or messaging platforms. Adopting telemedicine provides various benefits, including increased healthcare accessibility for people living in remote or underserved areas. Furthermore, it increases patient convenience by reducing the need for travel and waiting periods. Aside from these advantages, telemedicine plays an important role in chronic condition management, mental health support and efficiently treating non-emergency medical demands.[1 2] The emergence of the COVID-19 pandemic served as a catalyst for an increased emphasis on and adoption of telemedicine. As the world faced unprecedented challenges, healthcare systems sought alternative ways to deliver medical services while minimising physical contact and reducing the risk of infection. Telemedicine provided a viable solution, allowing healthcare providers to continue offering essential care remotely. This global health crisis has accelerated the

implementation of telemedicine across various medical specialties, leading to significant advancements in virtual healthcare delivery.[3]

A group that might particularly benefit from this new mode of communication are patients with obesity. Given the distinctive challenges they face during their weight loss journey, participation in a bariatric programme demands commitment from individuals. Similarly, after bariatric surgery, patients require regular follow-up appointments to monitor progress, prevent malnutrition, address potential complications and make necessary adjustments to their treatment plans. This is particularly advantageous for nutritional consultations, as telemedicine allows for frequent check-ins and ensures that patients receive timely guidance and support in managing their dietary requirements. Telemedicine facilitates these follow-ups, making it easier for patients to stay connected with their healthcare providers, during both periods, the preoperative and postoperative time. Moreover, telemedicine can help address psychological and emotional aspects of bariatric care, as patients may face mental health issues related to body image, lifestyle adjustments and overall well-being.[4 5]

While telemedical consultations have been proven to reduce costs in terms of missed work days and personal costs for patients,[6] patient dissatisfaction with not attending face-to-face appointments still remains a major concern with this way of communication.[7]

The goal of our study was to evaluate how patients with obesity experienced telemedicine during and after the pandemic, and how healthcare providers can use this type of communication in the future to provide effective support to these patients.

MATERIALS AND METHODS

Study design

The reported study comes from a larger qualitative research programme exploring how patients from a bariatric programme perceived the circumstances and challenges of the COVID-19 pandemic. Using a constructivist grounded theory approach, we conducted a qualitative study to gain insights into the psychological processes underlying a specific context.[8] To inform this approach, we collaborated as an interdisciplinary team of physicians and nutritionists to deliberately select patients who were fully aware of their current health status, particularly regarding their weight and engagement in a bariatric programme, and who expressed a desire to participate in the study.

The first data analysis explored the perceptions of patients of a bariatric programme who have undergone or will undergo bariatric surgery during the COVID-19 pandemic. It specifically focused on their struggles with health issues and psychological well-being.[9] By conducting this study, we found promising indications that telemedicine played an essential role in the follow-up of numerous patients, and it was well-received by many. These findings served as the impetus for the current investigation.

Study setting

Following the guidelines of the Swiss Society for the Study of Morbid Obesity and Metabolic Disorders, all patients of a bariatric programme in Switzerland are required to attend preoperative and postoperative evaluations, as well as a behaviour change programme, to receive support, education and resources that promote healthy lifestyle choices. Postoperative appointments are necessary for up to 5 years to evaluate weight loss and comorbidity resolution and provide ongoing resources and support to ensure that proper weight loss is maintained. Those regular appointments are crucial for long-term self-management of obesity, weight loss or weight loss maintenance. In addition to these routine appointments scheduled at our clinic, patients also receive continuous follow-up care from their family doctor. This comprehensive approach results in a multitude of appointments, a factor individuals may consider when deciding on bariatric surgery. During the pandemic, however, most elective bariatric procedures were postponed, and communication between healthcare professionals and patients with obesityunderwent significant changes. Plenty of routine postoperative follow-up appointments were conducted via virtual telephone or video appointments, except in cases where a physical examination or assessment was necessary. Virtual consultations limited the ability to conduct thorough physical assessments, potentially impacting treatment decisions. Additionally, there was a lack of in-person support groups and counselling sessions, which further affected patient support and motivation.

Participants, recruitment and data collection

We purposefully recruited patients of varying ages and sex who met specific criteria, such as having undergone or being scheduled for bariatric surgery. To ensure a diverse range of perspectives, we included patients with different bariatric viewpoints (preoperative, perioperative or postoperative) from our bariatric programme who were over 18 years old. Healthcare providers or nutritionists informed eligible patients during medical consultations or counselling sessions about our study and its purpose. Once verbal commitment was obtained, we proceeded to obtain written informed consent from each participant. To minimise stress and anxiety, a semistructured, in-depth interview guide was sent to the participants prior to the interview, and they were encouraged to contact the research team at any time for support. Participants were free to choose their preferred interview setting, with options including individual face-to-face interviews, Zoom video calls or telephone interviews. The duration of the interview varied based on individual participants' willingness to disclose their narratives during the semi-structured interview, with interviews lasting from 30 min to 95 min. The first interview round was conducted by DMT between 20 July and 13 October 2020. From 7 April

to 27 April 2023, AP attempted to schedule follow-up interviews lasting 10–15 min each with the same participants. However, due to some participants not responding to our request for a second interview, we were unable to reach all patients within this timeframe. The interviews were designed to assess the perceptions of our bariatric patients regarding telemedicine and to gather insights into their experiences with it thus far. The primary goal was to understand their perspective on communication with healthcare providers during and after the pandemic, particularly focusing on telemedicine encounters. All interviews were recorded, transcribed verbatim and assigned non-defining codes for anonymity purposes.

Data analysis

Our data collection and analysis process were conducted iteratively. For this exploration, we conducted a qualitative content analysis based on the methodological framework proposed by Elo and Kyngäs.[10] The data analysis process involved regular meetings among JMK, DMT and AP to establish initial codes, discuss data collection strategies and identify relevant themes. We followed an iterative and collaborative approach, incorporating new interview transcripts to strengthen the analysis. JMK and AP worked together on refining the codes by incorporating new data and comparing earlier transcripts.

To identify and refine thematic patterns, we employed constant comparative analysis, which involved systematically comparing data across different categories (communication, experience with telemedicine, occurring problems, etc), examining data from multiple transcripts and incorporating new data to enrich the evolving analysis. The analysis was further supported by field notes and memos written by DMT and AP, which provided additional context to the findings. For the transcript coding and visual representation, both researchers used Quirkos software, enabling efficient organisation and management of the data. Through this qualitative content analysis, we gained valuable insights into the perceptions and experiences of bariatric patients regarding communication with healthcare providers, especially focusing on their encounters with telemedicine during the pandemic.

Research team

JMK, the principal investigator of this study, is a surgeon with an interest in bariatric and upper GI surgery at Clarunis, the University Digestive Health Care Center in Basel, Switzerland, and a surgical educator, who is interested in conducting research on medical and patients' education. Her contributions to this study were informed by her experiences and reflections as a clinician educator and current researcher in medical education.

AP is a surgical resident interested in bariatric surgery, while DMT is completing her internal medicine residency with knowledge of bariatrics and its interdisciplinary setting. The broader research team included bariatric surgeons (JS, MK, RP, ATB and BPM-S), endocrinologists (KT), and a clinical health psychologist with extensive experience in obesity research who all aim to reduce the stigmatisation of individuals with obesity and advocates for their well-being.

Patient and public involvement

Patients and/or the public were not involved in the design, conduct, reporting or dissemination plans of this research.

RESULTS

In the first two phases, we conducted interviews with 12 women and 7 men, ranging from 24 to 61 years old, who were overweight or suffered from obesity. Four of the participants were undergoing conservative treatment, while the remaining 15 were in preoperative, perioperative or postoperative bariatric surveillance. Their Body Mass Index ranged from 27.8 kg/m^2 to 55.4 kg/m^2. Further demographic data, including information on bariatric treatment, comorbidities and weight loss, can be found in Klasen *et al*,[9] as these details are not pertinent to the current analysis or research focus. In the follow-up interview round, AP talked to 14 (10 women and 4 men) out of the 19 patients and asked them additional questions about their perception and experience with the ways of communication especially telemedicine during the pandemic. Overall, 33 interviews were conducted.

We present the data from both datasets to answer the research question of how individuals from a structured bariatric programme perceive telemedicine, illustrating it with quotes from the participants.

In the following sections, we will demonstrate the results of our study, exploring various facets of communication in the context of healthcare professionals and delving into the complexities posed by telemedicine, including its potential to bridge or break connections, as well as the communicational pitfalls and shortcomings associated with this evolving technology.

Communication with healthcare professionals

As mentioned in the methods section above, during the COVID-19 pandemic, communication between healthcare professionals and bariatric patients changed significantly with a shift from in-person to virtual care. Some participants expressed feeling well-informed and supported regarding the upcoming changes in consultations and appointments: '*I think it was communicated very well and also understandable. It seems to me, that people were well informed. It was very good* (P1)', '*The communication was good, and you had many opportunities to inform yourself* (P15)' and '*You could always reach someone, if you were not feeling well, and I haven't had any bad experiences* (P7)'.

Others felt rather confused '*It was not communicated to me at all. I just suddenly had an envelope in my mailbox and that was a bit overwhelming* (P11)' and '*It was all pretty disorganized, and I actually still don't know exactly where we stand right now* (P14)'.

While on the one hand, most participants reported no changes in their medical appointments: '*Yes, I had all my regular check-ups in person* (P1)', '*I had the normal check-ups. I was always there in person* (P2)' and '*I continued to go to all the doctor's appointments* (P3)', on the other hand, being a risk population, some bariatric patients cancelled their appointments out of fear of infection: '*It was unusually empty in the doctor's office. Many apparently canceled the appointments out of fear* (P6)', '*I heard that I belong to the risk group. And then the follow-up examinations also didn't take place anymore. I canceled those. And, I also canceled the therapies. In the beginning, I still went there. That was then also done with distance, but then with time I didn't want to go anymore* (P9)', '*I just wanted to stay at home and did everything I could on the phone. I was so scared of seeing other people because of my sick mother* (P1)', '*I am at higher risk because of my diabetes and obesity. The appointments that I would have had, I canceled or postponed* (P15)' and '*My doctor informed me that both my husband and I are considered high-risk patients due to his high blood pressure and my weakened immune system caused by anemia … No, I did not have a doctor's appointment. We never went to the doctor. We never went out of the house* (P4)'.

Furthermore, participants reported that many consultations, that were previously conducted in person, were increasingly replaced by phone or video consultations: '*So the doctor's appointments I've actually been attending. But the nutrition counseling appointment, for example, I had by phone* (P6)', '*Then everything was only with telephone appointments* (P10)' or '*I was able to talk to the psychologist via What's-App video* (P10)'.

Telemedicine dilemma: bridging or breaking the connection?

Overall, participants described the approach of using telemedicine frequently as a double-edged sword. On the one hand, they appreciated its flexibility and the convenience of virtual consultations offering a time-saving advantage. When asked, if they would like to continue having their consultations with a telemedical approach, 12 patients (63.16%) favoured telecommunication, 4 (21.05%) remained undecided and opted for a hybrid approach, while 3 (15.79%) expressed a preference for face-to-face consultations. Thus, most participants were convinced about telemedicine being an appropriate alternative to conventional medical appointments. They confirmed telemedicine to be convenient and appreciated the flexibility and reduced need to travel to in-person appointments: '*I had a very good experience. I was always given good advice on the phone, and I got help. The doctor asked me herself, if we wanted to do the next meeting also by phone. That went so well, that we also did the next one by phone. This saved me the trip and a lot of time* (P7)'. Another participant explained: '*In person, it was often very difficult, because I work all day and I had the opportunity to call by phone. It saved me a lot of time, because I didn't always have to go to the doctor, which was very good* (P19)'. Another participant even described to have had their psychological appointment via video call: '*During COVID-19, I talked to my therapist by phone. That went quite well and was not a problem for me* (P5)'. Another confirmed the success of the telemedicine approach: '*I was able to make several phone calls. That was also good for me. I was very anxious during the pandemic, and I was always given good advice* (P3)'.

Despite the absence of face-to-face interaction, patients expressed confidence in the quality of care they received by telemedicine and felt reassured that they could easily reach out to their healthcare providers in case of any concerns or queries: '*Yes, I could call my doctor whenever I had questions. I was able to talk to the psychologist via What's-App video, which I found very good. It also saved me a lot of time. Before that, I got to meet her once in person* (P10)'. Likewise, another patient stated: '*I had a good experience. I could always call when I had questions, and we could always find a solution together. I had most of the examinations in person, but sometimes when I couldn't go, we could discuss that over the phone* (P4)'.

On the other hand, patients also reported feelings of disconnection from their healthcare providers and described frustration with the limits of virtual consultations. As one participant declared: '*Sometimes I had the feeling that the interpersonal aspect was missing* (P14)'. Furthermore, technical difficulties and concerns about privacy and security were also perceived: '*I have a bit of a problem with hearing and it's even more difficult for me on the phone* (P9)'.

One patient mentioned an additional challenge with telemedicine when having conversations not in your native language: '*I also have a small language barrier, and I find it easier to talk in person than by phone* (P5)'. Another concern one patient expressed was the difficulty to open up to a stranger on a video call and feeling uncomfortable discussing personal issues: '*And that's quite strange, to openly present your life to someone you don't know via video. That bothered me a lot at the beginning. But I couldn't help it, it had to be that way* (P11)'.

Hiding, faking, cheating: telemedicine communicational pitfalls and shortcomings

While some patients preferred in-person visits, others opted for telemedicine or a combination of both: '*I would always prefer in person, to be honest. By phone you can only discuss topics like the next steps or maybe certain food products. I think communication when you are face to face is better, because I believe it is also a psychological problem with overweight people. We need more face-to-face contact* (P19)', '*I prefer to come in person. There is also usually a physical exam and blood draw. That can only be done in person. For me, in person is always better* (P5)'. Another patient agreed: '*Honestly, I'd rather have the consultations in person and be examined properly. Bariatric surgery is not a small matter that should be dismissed so easily. I have taken on a major procedure and want to be examined properly afterwards. And I live only 15 minutes walking distance from the hospital, so I have no problem to take the way. I was also unemployed at the time and had plenty of time* (P10)'. Two patients mentioned that honesty and transparency could also be an issue when you have your consultation only by phone: '*If you go in person, you're examined, weighed,*

your blood pressure is taken, you're seen, and you can't fake it. By phone, you can always cheat (P3)' and '*You can hide things over the phone. For example, when I'm sitting in front of my nutritionist, I can't lie to her about my weight. After all, she sees me and my overall constitution. Over the phone, I can claim anything, and she has to believe it* (P14)'.

Some patients, on the other hand, saw benefits and new opportunities with telemedicine: '*When you call from home, you are relaxed and don't have the inhibitions that you often have in the hospital* (P3)', '*You don't have to drive there every time and wait a long time* (P6)' or '*First and foremost, the independence of location. I'm often away on business and could make use of it (telemedicine) much more often by offering telephone consultations, for example* (P2)'.

One patient mentioned that the threshold for her to actually talk to a healthcare provider was lower compared with in-person appointments: '*I also find that if you have the possibility to call by phone, the inhibition threshold to actually get in touch is lower. It's also easier to communicate, if you don't have to wait months for the next appointment. I also think it's great that you called me now. I would never have said anything about this myself* (P3)'.

Furthermore, one woman highlighted: '*COVID-19 has shown us that for example, video conferencing is very well established and being efficiently used. I can also imagine that this would be a good thing to use in patient care. But the danger is that the tactile aspect would get lost* (P18)'.

Finally, we asked the patients for their advice on how to implement telemedicine effectively: '*I would suggest that you offer both - in person and by phone. Especially for those patients who don't feel comfortable with one of the two* (P6)' and '*I think the initial consultation should always be in person to get to know each other and the follow-up consultations can then easily be done by phone or video. This also saves the patient a lot of effort and you are much more flexible. But I think it would be good if face-to-face appointments were still scheduled at a certain interval* (P14)'.

DISCUSSIONS

This study investigated how patients in structured bariatric programmes perceive telemedicine as an alternative to traditional, in-person appointments. While many participants expressed positive experiences, citing convenience and accessibility, concerns were raised regarding telemedicine's limitations, such as the absence of physical examinations and challenges in fostering connections. Notably, some participants opted for a hybrid approach, blending virtual and in-person consultations to address both the advantages and limitations of each modality.

In the context of the COVID-19 pandemic, which has heightened concerns about in-person interactions, telemedicine has emerged as a crucial solution to facilitate accessible healthcare while minimising the risk of disease transmission.[11]

Hardy *et al*[3] examined the experience of bariatric patients with virtual care during COVID-19 and found that the majority of patients (81.7%) reported satisfaction with their virtual follow-up appointments, as they experienced a decrease in both time and cost constraints associated with attending in-person appointments. Virtual appointments incurred minimal estimated costs such as parking, gas and wages lost, with expenses ranging from $0 to $10, compared with half (51.0%) of in-person appointments. Waiting times were significantly reduced for virtual appointments, with 59.8% of patients waiting only 0–5 min before starting their virtual follow-up, compared with 44.4% who waited 15–30 min for their in-person appointments. Furthermore, over 60% of patients attending in-person appointments spent over 30 min travelling to their appointments, while 84.5% of virtual appointments were associated with no travel time at all, as the study revealed.

Our data align with this sentiment, as numerous patients in our study similarly emphasised the considerable time and cost savings associated with reduced travel and fewer days away from work due to virtual consultations.

A review by Nguyen *et al*[12] on patient satisfaction with telemedicine mirrored these findings, stating that patient satisfaction was mainly influenced by the time and cost-effectiveness of synchronous visits offered by various health services. The researchers also analysed patient preferences and found that 76.0% of patients preferred virtual care as an option for future follow-up appointments. This corresponds with the feedback obtained during our interviews, where 63.16% of participants indicated a preference for telecommunication. Among the preferred modes of virtual care were telephone (52.0%), video (21.3%) and telehealth (2.7%). The study also found that the majority of the non-urban population preferred ongoing virtual care and were generally satisfied with virtual appointments (64.7%). The answers match the understanding that telehealth services have increased healthcare accessibility and convenience for patients residing in remote or rural areas by reducing travel expenses and time constraints.[13 14] Although most patients expressed contentment with their virtual encounters and nearly half (49.5%) reported no significant issues with their virtual care experience (such as technological difficulties, potential privacy concerns or inadequate assessments), it should be noted that more than one-third of respondents (35.1%) expressed dislike for not being able to see their surgeon in person.[3]

Certain factors such as older age, lower levels of education, and limited computer skills have been identified as possible obstacles to the adoption of telemedicine.[15]

Furthermore, in our study, we observed that the language barrier also emerged as a notable challenge with telemedicine, with some patients expressing concerns about effective communication. Patients who are not fluent in the language spoken by healthcare professionals may encounter difficulty communicating, which could result in misunderstandings and complications. While medical interpreters or translation services may be an option in certain situations, technological or connectivity issues may still impede communication.[16] To address

language barriers in telemedicine, healthcare providers can offer language support by using medical interpreters or translation services or offer their own language skills for individual patients. This approach can enhance communication between healthcare providers and patients, even when they do not speak the same language.[17]

Additionally, it's crucial to consider that certain demographic groups, such as older individuals or those with limited access to technology, might face challenges adapting to telemedicine. Providing targeted support and educational resources can play a pivotal role in ensuring that all patients can effectively navigate and use telemedicine technologies, thus promoting inclusivity in healthcare services.[18]

While the pandemic has highlighted the importance of telemedicine in delivering remote healthcare services, it has also brought to light certain challenges, particularly in the realm of mental health services. One of the main issues is that patients may find it challenging to open up to a therapist on a video call, as one of our patients stated, which can hinder building rapport, development of trust and appropriate treatment.[19] Additionally, some patients may feel uneasy discussing sensitive issues in their home environment, which can be distracting and make them feel vulnerable. As a result, healthcare providers need to find ways to overcome these obstacles and create a comfortable and supportive environment for patients during telemedicine appointments.[20]

Studies indicate that communication preferences of patients with obesity with their healthcare providers can differ. Some patients prefer face-to-face visits, while others prefer telemedicine or a combination of both. These preferences may be influenced by factors such as the urgency of the issue, familiarity with the healthcare provider and comfort level with technology.[21 22] Patients who are experienced in technology, devoid of significant language barriers and have undergone uncomplicated treatment courses emerge as strong candidates for telemedicine in structured bariatric programmes. Telemedical appointments prove particularly suitable for nutritional consultations, discussion of lab results and simple check-ups. Conversely, challenges may arise with older patients unfamiliar with technology, those facing language barriers, individuals with hearing impairments and those with complicated treatment courses, during initial consultations and first contacts. Additionally, discussions of sensitive topics, especially with mental health professionals, might be more effectively conducted in person. Recognising diverse preferences, it is imperative to offer patients both telemedicine and in-person options when appropriate, empowering them to make informed decisions based on their individual needs and preferences.

Despite the sudden shift from in-person to virtual care, the majority of our surveyed patients reported a positive experience with telemedical care after bariatric surgery and expressed a desire for continued opportunities for virtual care. Telemedicine seems to be accepted by most patients, offering patients a convenient, cost-effective and time-saving option for routine follow-up visits. Our data support the need for integrating virtual care options into routine postoperative bariatric follow-up care.

LIMITATIONS

While our research has provided valuable insights into the experiences of individuals in the context of telemedicine, it is essential to acknowledge its limitations. Perceptual data, though rich in capturing individual nuances, are inherently subjective and are not intended to be generalisable across broader populations. Additionally, the interviews were conducted in two distinct phases of participants' lifespans, potentially introducing variability in narratives and shedding light on challenges at different life stages. Another limitation lies in the multilingual nature of our data analysis and interpretation, as it was carried out in German, English and Spanish. This linguistic diversity could contribute to potential variations in language nuances and interpretations when presenting the results in English. Furthermore, the study's quite small sample size underscores the need for caution in generalising findings. Additionally, the potential for selection bias arises, as only patients open to telemedicine might have participated, limiting the broader applicability of our results. Another potential selection bias could stem from the likelihood that patients who were satisfied with their (postoperative) treatment course were more inclined to participate and express contentment with telemedicine.

CONCLUSIONS

This investigation highlights challenges in healthcare communication with bariatric patients and the potential of telemedicine. While improving accessible and secure care delivery, telemedicine has revealed specific challenges like technical and language barriers affecting patient experiences. While emphasising patient selection and individual preferences is crucial, the potential for telemedicine to revolutionise outpatient care remains promising. Future efforts should focus on optimising telemedicine to ensure equitable access for all bariatric patients.

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Contributors AP, DMT and JMK contributed to the conceptualisation, design and methodology. AP, DMT and JMK curated the data and conducted formal analysis and interpretation. AP and JMK contributed to the investigation and drafting of the original manuscript. AP, DMT, KT, JS, MK, RP, ATB, BPM-S and JMK validated the findings and participated in reviewing and editing the manuscript. JMK provided supervision and oversaw project administration. JMK is responsible for the overall content and is the guarantor. All authors have read and agreed to the published version of the manuscript.

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Data availability statement Data are available upon reasonable request. The data and codes relating to the study are available from the corresponding author upon reasonable request.

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