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COMMENTARY

Social Media in the Management of Obesity and Diabetes: An Underutilised Population Educational Tool

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ABSTRACT

Obesity and diabetes are two of the most common chronic medical conditions encountered, putting an ever-increasing strain on healthcare systems worldwide. Social media meanwhile has taken the world by storm over the last 2 decades, providing a way to distribute information instantly and on a vast scale at the click of a button. The use of social media to aid in the management of obesity and diabetes though is an underutilised tool, with the potential to help in educating and supporting these patients in numerous ways both now and in the future, on a grand scale. The caveat to this, however, is the negative side of social media, which can include the spread of disinformation and bullying. In this commentary, we discuss the methodology and wide scale of positive and negative effects of social media across the management of obesity and diabetes, as well as the possible methods we can use this to our advantage in the medical profession to help our patients going forward.

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Key Summary Points

Social media is an underutilised tool in our management of obesity and diabetes.
The benefits of social media, given by the General Medical Council (GMC), are engaging people in public health and policy discussions, establishing professional networks and facilitating patients' access to information.
Social media can help in improving health outcomes via behavioural change techniques—such as goal setting, social comparison, social support and feedback.
The regulation of information spread via social media is vital to maintain its accuracy and use of good quality evidence.

COMMENTARY

Obesity and diabetes are increasingly prevalent chronic conditions worldwide, commonly affecting patients in combination as part of the metabolic syndrome. Epidemiological studies show that over a billion people worldwide are

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now suffering from obesity—16% of the population in 2022 [1], with diabetes affecting 10.5% in 2021 [2]. The estimated annual National Health Service (NHS) spend on obesity-related disease is £6.5 billion [3], an astounding figure. Meanwhile, the prevalence of these conditions is rising, with diabetes predicted to increase to affect 12.5% of the population by 2045, meaning approximately an extra 783 million people with the disease [2]. A patient-centred approach, with an emphasis on education, followed by self-management, are key components in successful management of these conditions over an individual's lifespan. Social media is an easily accessible and increasingly popular source of information in the modern world and, along with rapidly evolving technology and medications, has the potential to play a key role in the management of these conditions going forward.

Social media comprises of internet-based communication platforms that facilitate interactive community-based content creation and sharing. The most popular of these worldwide, as of January 2024, are Facebook, YouTube, WhatsApp, Instagram and Tiktok [4]. Using these platforms as a source of information and education has exploded in popularity over the last 2 decades, with many of us using social media as our main source of news and information now. There are an estimated 3.5 billion users worldwide, with 88% of adults spending at least 3 h a day on social media platforms. Even in the least developed countries, who have less access to social media, an average of 35% of the populations accessed the internet in 2023, a huge increase from 17.6% in 2018 [5]. Studies have shown that social media-based intervention in education can improve engagement by 82.9% and positively affect health behaviours and outcomes by 88.8% [6]. As internet access across the globe continues to improve, this offers an opportunity to provide medical education on a vast scale, with wide accessibility across different demographics, including ethno-cultural groups, ages, wealth and levels of education. The benefits of social media, as defined by the GMC, are shown in the table below [7] (Table 1)

Table 1 Benefits of using social media on patient care (contents based on the GMC benefits [7])

Benefits of using social media on patient care (GMC 2013)
a. Engaging people in public health and policy discussions
b. Establishing national and international professional networks
c. Facilitating patients' access to information about health and services

Social media has five unique features—data sharing, communication, activity data viewing, peer grouping and online social networks (OSNs) [6]. These enable data sharing of messages, documents, images and videos, with the potential to share these across as wide an audience as one desires. There are also 'many-to-many' communication features, including forums and chat rooms, which work on a more selective level. Using each of these features, there are multiple potential elements of obesity and diabetes management we can help to publicise via social media.

In terms of implementing improved health outcomes via social media, this can be achieved via behavioural change techniques. These include demonstration of the behaviour, skills training, action planning, problem solving, goal setting, social comparison, social support and feedback. The main determinants of behaviour change in patients are self-efficacy, realistic and positive outcome expectations, and good social support [8]. Self-efficacy is a person's belief in their own ability to complete a task or achieve a goal, and can greatly affect individuals' behaviour relating to their activity choice, effort, goal setting and achievement. Improving this is a key factor in achieving more positive patient outcomes and expectations. People who believe they will be successful are more likely to make behavioural changes to produce their desirable effects—playing an important role in physical health, psychological adjustment and behavioural change strategies [9].

There is evidence for potentially significant improvements in glucose control and body weight with social media interventions. The Healthier You: NHS Diabetes Prevention Programme has proved that, by utilizing digital

technology and social media, we can positively impact a large number of patients. Early outcomes from the programme showed participants attending at least one intervention had a mean weight loss of – 2.3 kg and reduction in HbA1c of – 1.3 mmol/mol [10], which are extremely significant results bearing in mind these are patients with only pre-diabetes defined by their HbA1c. Loh et al.'s meta-analysis into social media interventions for overweight and obese adults showed a mean reduction in weight of – 1.5 kg across 21 randomised controlled trials (RCTs), with a reduction in body mass index of – 0.7 kg/m^2 across 13 RCTs [6]. This clearly demonstrates the impact social media has the potential to have in managing patients with obesity and diabetes, and their possible mechanism for this is shown below (Fig. 1) [6].

Promoting a healthy lifestyle, with advice on diet and exercise, is the mainstay of managing these conditions, and indeed is an extremely popular trend on social media at present, with many influencers on these platforms promoting healthier food dishes, from a dietary point of view, as well as exercise routines for varying levels of ability. These are generally tailored to the younger adult however, and there is certainly scope to increase education in this area for the middle-aged and older generations. Social media in itself, however, is contributing to adolescent obesity and diabetes, with a causal relationship demonstrated between screen time and these health outcomes [11]. Going forward, the use of interactive media and physical activity-based gaming (mainly in virtual reality), which is on the rise, may, we hope, increase childhood and adolescent activity levels and help reduce body weight in the future. Alternatively, these advancements in social media and gaming technology, particularly from a virtual reality perspective and the development of the 'metaverse', may lead to the next generation being even more indolent, and indeed worsen the global obesity crisis we are currently in.

From a diabetes point of view, social media chat rooms and forums have improved patients' understanding of their disease and particularly carbohydrate counting. Patients are now easily able to discuss with people across the world their insulin to carbohydrate ratios and what they would administer for certain foods via instant messaging, blogs and forums. Apps such as MySugr, Digibete, myDesmond and GDm-Health now allow us to provide patients with resources they can use in their own time to educate themselves and better manage their diabetes, and have shown the potential technology has to improve patients' own management of their condition.

Social media has also led to the formation of the 'looping community', who download and install specially designed algorithms to their insulin pumps to create their own personal hybrid-closed loop insulin pump systems (also known as do-it-yourself artificial pancreas systems). This is, however, unregulated and

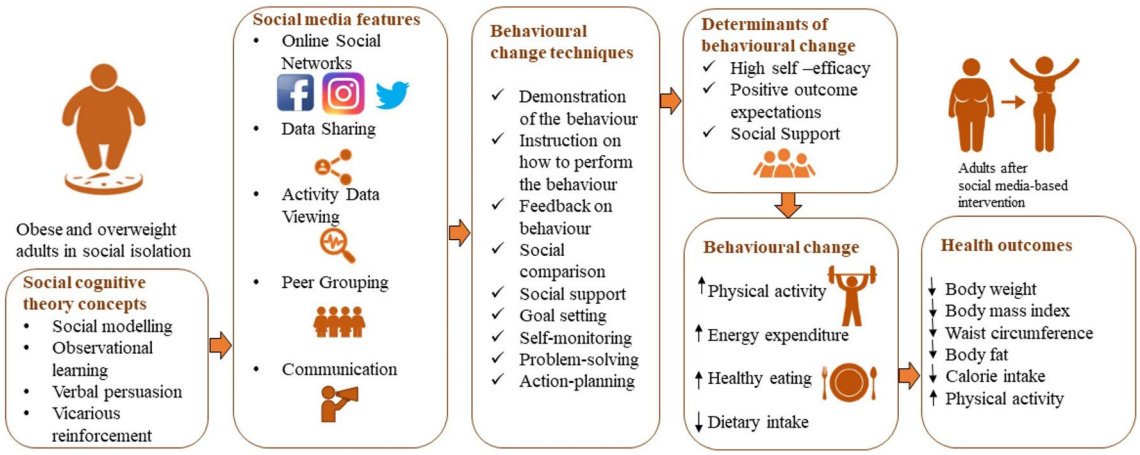

Fig. 1 A social media framework in obesity management [6]

therefore should not be encouraged in the first instance by us as healthcare providers. However, the results that the vast majority of these patients are achieving are remarkable, with significant reductions in HbA1c and time in range [12], making these a potential success story of social media. We therefore need to ensure we support these patients as best as we can and become more aware of the logistics of 'looping' as a concept.

As the use of technology in diabetes management increases, with continuous glucose monitoring and smart insulin pens particularly, social media can help to support patients in managing these different devices. Providing an approved, regulated social media environment, where healthcare professionals can aid patients with their management, is another possible avenue to be explored in the future. This would require significant IT support, regulation and workforce availability to undertake, however.

There are few studies on social media use in diabetes particularly. A systematic review by Elnaggar et al. [13] yielded only seven studies into peer-to-peer use of social media for diabetes self-care, while Gabarron et al. [14] found only 20 moderate and high-quality studies in their evidence-based review into social media use in interventions for diabetes. Both papers reported favourable results, with 13 publications in the latter study reporting significant reductions in HbA1c following social media interventions. However, both papers concluded that there is a lack of good quality evidence and an underuse of social media in diabetes management. This is an area that certainly therefore requires further research in the future.

From an obesity point of view, better education for patients is needed in understanding the new medications that are on offer and the risks and benefits of these. Using social media, there is the potential to give patients a better understanding of the different therapies now on the market, in terms of their method of administration, method of action, side effects and potential results, which will help with adherence to medication and lifestyle modifications. This will also give patients more realistic expectations of the results to expect and the need to maintain these changes in behaviour going forward.

However, the recent explosion of different medications being used for weight loss (in obesity alone, as well as associated with diabetes) requires serious regulation in terms of how it is advertised, and even sold, via some social media platforms. The high volume of private prescriptions of glucagon-like peptide-1 (GLP-1) agonists, often from a purely aesthetic perspective of use, has led to shortages for those patients with a genuine medical need for these medications. It has also affected the production of some forms of insulin because of a shortage of plastic for the manufacture of pens to administer these. The legal supply of these medications going forward needs to be rationalised, and priority given to patients with the highest clinical need, with action also taken against dangerous illegal supplies of these drugs, which are beginning to occur. Unfortunately, the dissemination of information about GLP-1 agonists on social media has undoubtedly fueled the popularity of these drugs and contributed to these issues we are now facing today.

Bariatric surgery is another extremely effective treatment for obesity and type 2 diabetes, which is becoming increasingly popular as a treatment option for patients. However, this increased demand is leading to health tourism and patients undergoing these drastic and potentially dangerous procedures abroad, with little research and knowledge of the changes their body will be undergoing, often permanently. These patients often return to their native countries with complications and occasionally even without the knowledge of exactly what procedure they have had done, and the health implications going forward in terms of malabsorption and tablet burden post-operatively. Social media is often used to advertise these surgeries, with questionable images of results and a substantial lack of information on the procedures and associated risks. Better regulation of these advertisements and education for the public are vital to avoid an increasing number of patients suffering potentially significant harm via these surgeries.

This is true of social media on a general level. The ability of users to generate and share

content can lead to the dissemination of incorrect information and potentially serious harm, as discussed above. Engaging with unknown individuals may be a concern, and there is still the widespread issue of negative comments and messaging across social media platforms, known as trolling, which companies are attempting to crack down on. Also, a 'conceptual gap' may exist between health care providers and social media users, which is difficult to address without live interactions between the two parties. Finally, the privacy, data and confidentiality of intervention group members are also a key consideration which must be protected [15].

In summary, social media has the potential to have a significant positive impact on obesity and diabetes management. Particularly in this post-Covid era, where we are looking for more efficient and economical ways to manage our patients, as well as prevent the rest of the population developing chronic health conditions, the use of social media could be key. Social media in health promotion is an emerging field and there is therefore a need for regulation to ensure privacy, safety and accuracy of information. More research is required to fully understand the true impact of social media in health care now, and moving forward.

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