

Research Article

Department of Metabolic and Bariatric Surgery in the Era of Social Media

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Abstract

Metabolic and bariatric surgery (MBS) is an effective treatment for obesity and associated metabolic disease, while social media has become an important environment in which patients encounter information, professional communication, peer experience, and commercial promotion. This narrative review examined the opportunities, risks, and governance implications of social media in MBS. Peer-reviewed literature was primarily identified through targeted searches of PubMed and the China National Knowledge Infrastructure (CNKI), supplemented by relevant professional, regulatory, and platform documents obtained from official sources. Publications were selected purposively according to their conceptual and clinical relevance and were synthesized thematically around information quality, patient decision-making, professional communication, social support, stigma, privacy, and regulation. Social media can expand access to health information, facilitate clinician-patient communication, and strengthen peer support; however, available evidence does not support treating social media exposure as a deterministic cause of health behavior. Its influence varies according to platform design, source credibility, health and digital literacy, demographic and cultural context, offline relationships, and access to clinical care. Important risks include misinformation, selective presentation of favorable outcomes, commercially driven promotion, weight stigma, and privacy breaches. MBS-specific governance should require credential verification, disclosure of commercial interests, balanced communication of benefits, risks, alternatives, and long-term follow-up requirements, and robust consent procedures for patient-related content. Future studies should evaluate causal pathways, population differences, and professionally led social media interventions.

Keywords

Social Media, Obesity, Metabolic and Bariatric Surgery, Health Communication, Patient Decision-Making

1. Introduction

Obesity is a major global public health challenge, and metabolic and bariatric surgery (MBS) is an effective treatment

for severe obesity and associated metabolic diseases [1, 2]. Alongside the development of digital communication, social

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media has become an increasingly important source of MBS-related information, experience sharing, and peer interaction. It may improve patients' access to practical information and social support [3, 4]. However, the quality, reliability, and balance of online MBS information remain variable, creating potential risks for patient understanding and decision-making [4, 5].

This narrative review aims to examine how social media is used in the field of MBS, how it may shape public perceptions and patient experiences, and what opportunities and risks arise for patients, professionals, and institutions. It also considers social media as one influence within a broader decision environment rather than as an independent or deterministic cause of health behavior. The review concludes with MBS-specific recommendations for education, professional practice, platform governance, and future research.

2. Methods

This article is a narrative review that provides a broad overview of the roles, potential benefits, risks, and regulatory implications of social media in metabolic and bariatric surgery, rather than an exhaustive synthesis of all studies addressing a narrowly defined research question.

Peer-reviewed literature was identified primarily through targeted searches of PubMed and the China National Knowledge Infrastructure (CNKI), including English- and Chinese-language publications. Search concepts covered social media, online health information, digital health communication, obesity, metabolic and bariatric surgery, patient decision-making, obesity stigma, privacy, and healthcare professionals. Relevant policy documents, professional consensus statements, statistical reports, and platform regulations were obtained from official sources.

Publications were selected according to their relevance to the topics addressed, with seminal studies providing conceptual background and recent studies reflecting current developments. The literature was synthesized thematically around information quality, professional communication, patient experiences, decision-making, stigma, privacy, and regulation. As this was a narrative review, no protocol was registered, no exhaustive systematic search or formal study-screening procedure was undertaken, and no standardized quality-appraisal instrument was applied [6]. The review therefore provides an interpretive and practice-oriented synthesis rather than a comprehensive assessment of all available evidence.

3. Background and Conceptual Framework

3.1. Public Health Impact of Obesity

Obesity has become a significant public health challenge

worldwide, affecting more than 2.5 billion adults [2]. In recent decades, the prevalence of obesity in China has rapidly increased, posing substantial impacts on the physical and mental health of the populace. Statistics show that the overweight and obesity rates among adult residents in China are as high as 34.3% and 16.4%, respectively [7]. Compared to individuals with normal weight, those who are overweight or obese are more prone to various metabolic diseases such as nonalcoholic fatty liver disease, diabetes, dyslipidemia, and hypertension [8]. In 2019, obesity was responsible for approximately 5 million deaths from cardiovascular diseases, diabetes, cancer, and other conditions [9]. Additionally, obesity is closely linked with several mental health issues, including depression, anxiety, and personality disorders [10]. Therefore, addressing the issue of obesity is of utmost importance.

3.2. Introduction to Department of Metabolic and Bariatric Surgery

Departments of metabolic and bariatric surgery (DMBSs) provide multidisciplinary assessment and treatment for obesity and related metabolic diseases. Mainstream surgical procedures include Roux-en-Y gastric bypass and sleeve gastrectomy. With the development of endoscopic techniques, minimally invasive endoscopic bariatric strategies, such as intragastric balloons and endoscopic sleeve gastropasty, have provided additional treatment options [11, 12]. These procedures can achieve weight loss through restriction, altered gastrointestinal physiology, and hormonal mechanisms, thereby improving metabolic disease, quality of life, life expectancy, and selected long-term health outcomes [1, 13, 14].

Obesity treatment also includes dietary therapy, physical activity, behavioral intervention, and pharmacotherapy. GLP-1 receptor agonists, including semaglutide and liraglutide, can support weight loss and improve glycemic and cardiometabolic outcomes [15]. Nonsurgical approaches may be used independently or in combination with surgery; however, guidelines emphasize comprehensive, individualized, and long-term multidisciplinary care [16].

3.3. Conceptual Scope of Social Media

In this review, social media refers to digital platforms that enable or facilitate the formation of web-based communities in which users create, share, comment on, and circulate information, opinions, and other content [17]. In health contexts, these platforms are used by the public, healthcare professionals, researchers, and health institutions to disseminate information, communicate, and participate in online communities. The scope of this review includes platforms such as WeChat, RedNote, TikTok, Kuaishou, YouTube, Facebook, Instagram, and online patient communities [18]. Wearable-device self-monitoring and personal health-tracking technologies are excluded unless the generated data or experiences are shared,

discussed, or circulated through a social media platform.

3.4. Theoretical Pathways Linking Social Media to Health Attitudes and Behavior

Social media may influence health-related attitudes and choices through several interacting mechanisms. From a social cognitive perspective, self-efficacy, outcome expectations, personal goals, and perceived environmental facilitators and barriers may jointly shape health-related motivation and behavior [19]. Interactive platform functions, including sharing, commenting, feedback, and group participation, may increase repeated exposure to messages and facilitate dialogue and peer responses [20].

The influence of social media content also depends on how users process and evaluate information. Perceived source credibility, personal relevance, prior beliefs, and health and digital literacy may affect whether information is accepted, questioned, shared, or disregarded. Recent reviews indicate that social media communication involves interacting motivational, cognitive, and social-relational mechanisms and may influence knowledge, attitudes, intentions, and health-related behavior [20, 21]. These pathways provide a theoretical basis for understanding the specific effects of social media on MBS-related information seeking, patient experiences, and decision-making discussed below.

3.5. Online Platforms and Health Information Dissemination

The internet has transformed the way the public accesses and shares health information. Data from abroad shows that over 90% of internet users seek health information online, with higher usage rates among young people and those with higher education levels [18, 22]. In China, nearly 70% of patients obtain health information through the internet [23]. With the popularization of short videos and live streaming, the number of people acquiring health information via social media platforms, such as WeChat, RedNote, Kuaishou and TikTok have been increasing steadily over the years. Social media enhances the timeliness, accessibility, convenience, and connectivity of health information; however, it also poses risks, including the dissemination of inaccurate or misleading health information and potential privacy violations [24, 25].

4. Roles and Influence of Social Media in MBS

4.1. Quality and Characteristics of Social Media Content

Social media platforms play an important role in MBS-related information dissemination and knowledge sharing. Studies evaluating bariatric surgery websites, YouTube videos on

nutrition after bariatric surgery, and online patient information on adolescent bariatric surgery have identified limitations in information quality, reliability, and readability [5, 26, 27]. China-specific evidence concerning the quality of online MBS information remains limited. However, evaluations of health-related WeChat accounts and online information in other clinical fields have reported comparable problems involving source transparency, readability, objectivity, and reliability [28-31]. These findings suggest that the quality of online medical information remains uneven across platforms and clinical topics.

4.2. The Role of Healthcare Professionals on Social Media

Social media platforms provide doctors and healthcare institutions with a convenient channel for disseminating health information. Many healthcare professionals use platforms like WeChat to introduce knowledge about chronic diseases such as hypertension, diabetes, heart disease, and cancer, thereby increasing public access to health information and raising awareness and concern about these conditions [32-35]. Similarly, experts in MBS often combine personal experience with clinical research to disseminate knowledge about surgical procedures, perioperative management, postoperative care, and latest research findings through easily understandable or humorous text and images, enhancing public understanding of MBS [4, 26].

Moreover, doctors engage directly with the public through social media, acting as professional advisors and health advocates. Many healthcare professionals use platforms like WeChat to provide real-time health monitoring, feedback, and education to patients with chronic diseases, which enhances patient involvement and motivation in their own health management, leading to improved treatment outcomes [25, 32-34, 36, 37]. MBS teams use digital platforms to provide dietary and exercise guidance, follow-up, and supervision [3, 38-41]. Such communication can reinforce healthy lifestyles, but professional content should distinguish general education from individualized medical advice [42].

Doctors also use text, short videos, and live streams to explain clinical work and respond to inaccurate reports, which may influence public perceptions of professionals and institutions [43, 44]. In China, more than half of bariatric surgery candidates report using online platforms or mobile applications to learn about MBS and communicate with healthcare providers [45]. These channels supplement rather than replace comprehensive clinical consultation. DMBS practitioners therefore use social media for education, communication, professional visibility, and institutional outreach [42, 44, 46, 47].

4.3. Patient Experiences and Information Sharing

Patients often document and share their surgical experiences through social media. Common topics include perioper-

ative concerns, motivation, education, dietary practices, physical activity, and postoperative progress, and difficulties encountered during recovery [3, 48]. Preoperative patients may post updates about completing required courses, obtaining insurance approval, scheduling surgery, and preparing for dietary changes, whereas postoperative patients more often share encouragement, practical experiences, and progress updates. Adolescents preparing for MBS have also described social media as a source of accountability, emotional support, and shared behavioral strategies, while reporting barriers such as time constraints, planning and tracking difficulties, and negative peer influences [49]. Patients may also share struggles and setbacks rather than favorable outcomes alone [3]. Peer narratives can provide emotional and informational support, but individual experiences are not representative estimates of benefits, complications, or long-term outcomes. Their value is greatest when personal testimony is clearly distinguished from clinical evidence.

4.4. Social Media and Obesity Stigmatization

Content analyses of social media show substantial negative stigmatization of people with obesity, including derogatory comments, exclusion, personal attacks, gender discrimination, and misogyny [50]. YouTube videos that express negative attitudes toward overweight and obesity may receive high levels of views and interaction, and hostile comments can further reinforce stigma and shame [51, 52]. Obesity-related health organizations have not always emphasized obesity as a chronic disease or consistently disseminated accurate information through social media [53]. Without intervention, platform dynamics may therefore amplify weight stigma.

Obesity stigmatization can influence public perceptions of MBS. Patients may encounter negative judgments when considering surgery, contributing to decisional conflict, delayed care, secrecy, medical tourism, or abandonment of treatment [54]. Similar patterns may occur in China when patients conceal their surgical decisions from relatives or friends or seek treatment outside their local area.

Social media can also be used to challenge weight stigma. Educational interventions can emphasize the genetic, metabolic, psychological, and social determinants of obesity and show the consequences of discrimination [55-57]. Cognitive dissonance interventions that encourage people to recognize conflict between weight-stigmatizing attitudes and their values may also reduce bias [58, 59]. Anti-stigma communication should avoid replacing one narrow body ideal with another and should include diverse bodies, patient experiences, and clinically accurate explanations of obesity.

4.5. The Impact of Social Media on Patient Decision-Making and Behavior

Social media has become an important source of infor-

mation, experience sharing, and peer support for patients considering or undergoing MBS [3, 60]. Its accessibility and rapid circulation allow users to explore surgical procedures, perioperative experiences, postoperative outcomes, dietary practices, exercise plans, and recovery strategies. Within the uneven information environment described above, these materials may influence which aspects of MBS patients notice, discuss, and consider when forming expectations about treatment.

Patient-generated accounts may shape how prospective patients understand the potential benefits and risks of MBS. Such accounts can provide practical perspectives that may not be fully addressed during routine clinical encounters. Nevertheless, individual experiences vary according to surgical procedure, baseline health status, psychosocial circumstances, follow-up support, and lifestyle factors. Positive outcomes, visible weight loss, and improvements in quality of life may receive more attention than postoperative complications, weight regain, nutritional deficiencies, or difficulties in sustaining behavioral change. Predominant exposure to favorable accounts may therefore contribute to overly optimistic expectations.

Facebook groups and other online communities can also provide emotional and informational support after surgery [3]. A recent systematic review identified access to peer communities, encouragement, and health information as potential benefits of social media use before and after MBS, while also identifying concerns about inaccurate or inconsistent content [60]. Professionally led social media support programs may further support patient engagement, adherence to follow-up recommendations, postoperative self-care, and weight management [61]. However, advice concerning diet, supplements, exercise, medication use, or symptom management may not be appropriate for an individual patient and may conflict with professional recommendations. Social media support should therefore complement, rather than replace, individualized assessment, informed consent, multidisciplinary counseling, and clinical follow-up.

4.6. Critical Considerations in Interpreting the Influence of Social Media

Social media exposure does not necessarily lead to the acceptance of online information, behavioral change, or a decision to undergo MBS. Its influence may vary according to patients' health and digital literacy, prior experiences, trust in healthcare professionals, readiness for treatment, and access to credible clinical information. MBS decision-making also develops within broader interpersonal and social contexts. Recent qualitative evidence indicates that it may involve information seeking, cognitive appraisal, social pressure, social support, and peer influence across different stages [76]. Recommendations from healthcare professionals and support or opposition from family members and peers may reinforce, modify, or counter messages encountered through social me-

dia [45, 54]. Social and cultural norms may further shape perceptions of obesity, body size, personal responsibility, and surgical treatment. Gendered appearance expectations and cultural ideals of self-optimization may make weight-loss narratives particularly persuasive for some users, whereas stigma surrounding obesity and bariatric surgery may lead others to delay treatment or conceal their decisions [52, 54].

The influence of social media is therefore likely to vary across patient groups and service contexts. Financial circumstances, geographic location, healthcare accessibility, insurance or reimbursement arrangements, and the availability of multidisciplinary support may restrict the options patients can realistically pursue, regardless of online exposure. Social media should consequently be understood as one component of a complex decision-making process rather than an independent cause of treatment uptake or behavioral change.

5. Potential Risks and Challenges of Social Media

5.1. Dissemination of Inaccurate or Misleading Information

Social media platforms can disseminate MBS information rapidly, but open user-generated content may be inaccurate, incomplete, exaggerated, or commercially influenced. Studies of bariatric surgery websites, online patient information, and patient-oriented YouTube content have identified poor-to-fair or variable information quality, reliability, and readability [5, 26, 27]. In addition, a cross-sectional analysis of MBS-related Facebook pages and Twitter accounts found that medical centers were major content creators and that the promotion of medical services was a prominent component of social media activity [4].

The concern is therefore not only the presence of factually inaccurate information, but also incomplete or selectively framed communication. Content may foreground visible weight loss, personal success, or the convenience of treatment while giving insufficient attention to eligibility, complications, nutritional monitoring, weight regain, and long-term multidisciplinary follow-up. Such imbalances may limit comprehensive understanding and contribute to unrealistic expectations. Healthcare professionals and professional organizations should therefore provide accessible, evidence-based information that communicates both the potential benefits and limitations of MBS and directs patients to individualized clinical assessment.

5.2. Patient Privacy and Ethical Issues

The use of social media also raises important concerns regarding patient privacy and professional ethics. Healthcare professionals generally use social media to provide health education, introduce clinical services, or communicate professional knowledge. However, some healthcare institutions and

clinical teams film ward rounds, consultations, surgical procedures, and postoperative recovery processes to make online content more vivid and interactive. Such practices may inadvertently disclose patients' identities, diagnoses, treatment information, images, voices, or other sensitive details. Such disclosure may undermine trust and lead to conflict between patients and healthcare professionals. A survey of Chinese urologists found that nearly half of the respondents had posted patient information or images online, while only 5% had obtained patient consent beforehand [62]. Another study found that 13.4% of registered nurses in China acknowledged that they had sometimes posted anonymized patient information on social media [63]. These findings indicate that awareness of online privacy and professional boundaries remains insufficient among some healthcare professionals.

Removing a patient's name does not necessarily ensure anonymity because combinations of clinical, visual, geographical, and temporal information may still allow the patient to be identified. Moreover, discrepancies between platform privacy policies and their actual implementation may create additional risks of unauthorized access, copying, redistribution, or long-term retention of sensitive information [17]. Healthcare professionals and institutions should therefore obtain specific and informed consent before publishing patient-related content, minimize the inclusion of identifiable details, and ensure that refusal to participate does not affect the patient's care. Social media platforms should also strengthen confidentiality management and establish effective procedures for removing unauthorized or privacy-violating content.

5.3. Relationship Between Healthcare Professionals and Social Media

The way healthcare professionals engage with social media significantly affects information quality and medical practice. Many doctors and healthcare institutions use social media for health education and information dissemination, but these activities also create professional and ethical challenges [64]. Healthcare professionals should ensure that published content is scientifically accurate, appropriately referenced, and consistent with current clinical evidence. General health education should be clearly distinguished from individualized medical advice, particularly when professionals respond through public comments or informal messages without adequate clinical assessment. Inaccurate or outdated information should be corrected when necessary.

The use of social media for institutional branding, patient recruitment, and personal promotion may also blur the boundary between health education and commercial advertising. Analyses of MBS-related social media accounts indicate that the promotion of medical services constitutes a prominent component of online activity [4]. Commercially oriented communication may selectively foreground benefits while underrepresenting perioperative risks, variable weight-loss outcomes, weight regain, and long-term care requirements.

Healthcare professionals must also comply with privacy laws, professional standards, and institutional policies when interacting with patients online. They should protect confidential information, maintain appropriate professional boundaries, and avoid providing individualized diagnoses or treatment recommendations through public comments or informal messages when adequate clinical assessment is not possible. Social media therefore requires healthcare professionals to balance accessibility and public engagement with scientific responsibility, patient privacy, professional integrity, and commercial pressures [42, 65].

6. Future Research Directions and Policy Recommendations

6.1. Social Media Education and Training

Health communicators require knowledge of medicine, public health, behavior change, ethics, law, research methods, risk communication, and social media operations [66]. However, traditional medical, rehabilitation, and nursing curricula rarely cover health communication. Practitioners may therefore lack experience in content planning, evidence appraisal, visual communication, platform rules, commercial disclosure, and risk management [17]. Academic and professional teams should provide structured training and multidisciplinary support so that MBS staff can create accessible, evidence-based, ethically compliant content and respond appropriately to misinformation and online patient questions.

6.2. MBS-Specific Policy Formulation and Regulatory Recommendations

The lack of strict qualification certification may be one reason for the low quality of online medical information [67]. In response, social media platforms in China have gradually strengthened credential verification, content review, and marketing regulations for medical science communication accounts [68-70]. Health science communication expert databases and resource platforms covering metabolic and bariatric surgery have also been developed nationwide. In 2025, the Chinese expert consensus on medical knowledge dissemination in MBS was published to promote professional and standardized health communication in this specialty. The consensus emphasizes that social media content should be truthful, objective, accurate, and timely [71]. Further regulation should address promotional MBS content published by physicians, private clinics, hospitals, and other healthcare professionals. Platforms should verify professional qualifications and clearly distinguish health education from commercial advertising. Financial interests, sponsorships, and paid collaborations should be disclosed. Promotional content should not portray MBS as a rapid, effortless, or universally effective treatment, guarantee weight-loss outcomes, selectively present successful cases,

or minimize perioperative risks, complications, weight regain, and the need for long-term follow-up. Platforms and healthcare institutions should establish procedures for reviewing misleading content and correcting or removing material that violates professional, advertising, or patient-privacy standards.

6.3. Areas Requiring Further Research

Patients' growing use of social media for health information places new demands on healthcare professionals' communication capabilities. Existing health literacy and health communication competency frameworks provide useful foundations [66, 72-75], but MBS-specific frameworks and assessment tools remain limited. This gap is particularly relevant because some MBS practitioners have reported insufficient professional knowledge to support health communication activities [46]. Future research should therefore develop and validate an MBS-specific health communication competency and assessment framework that operationalizes the training priorities outlined above. Studies should evaluate its content validity, reliability, and applicability across professional roles, institutions, and social media platforms. Research should also determine whether training based on such a framework improves the quality of online information, professional practice, and patient understanding.

7. Limitations

Because this narrative review used targeted rather than exhaustive searches of PubMed and CNKI, relevant evidence may have been missed. The absence of a standardized quality-appraisal procedure also meant that the relative strength of different sources and claims could not be systematically compared. In addition, the thematic synthesis may reflect the authors' interpretive priorities. The review should therefore be understood as a conceptually informed and practice-oriented overview rather than a comprehensive or quantitative assessment of social media effects in MBS.

8. Conclusion

MBS is an effective component of comprehensive obesity care, and social media has become an important part of the information and support environment surrounding treatment. It can improve access to education, facilitate clinician-patient communication, support peer connection, and challenge weight stigma. It can also disseminate inaccurate or incomplete information, privilege commercially attractive success narratives, intensify appearance pressures, and expose patient information.

Social media should not be treated as a singular or deterministic driver of MBS decisions. Its effects depend on source credibility, platform design, user characteristics, social and

cultural norms, offline relationships, clinical advice, and structural access to care. The appropriate response is therefore a combination of professional training, patient media literacy, shared decision-making, privacy protection, transparent disclosure, and MBS-specific regulation of promotional claims.

Future research should test causal pathways and professionally led interventions, identify which populations are most likely to benefit or be harmed, and evaluate whether governance measures improve information quality and patient outcomes. Responsible use of social media can support MBS care, but only when communication remains evidence-based, balanced, ethically governed, and integrated with multidisciplinary clinical practice.

Abbreviations

MBS	Metabolic and Bariatric Surgery
CNKI	the China National Knowledge Infrastructure
DMBS	Departments of Metabolic and Bariatric Surgery

Author Contributions

Jinglan Yang: Investigation, Writing – original draft

Xuguang Li: Conceptualization, Investigation, Methodology

Qiubi Tang: Investigation, Writing – review & editing

Xiang Wu: Data curation, Investigation, Writing – review & editing

Xiaomei Chen: Data curation, Validation

Chunqun Li: Funding acquisition, Project administration, Supervision

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Conflicts of Interest

The authors declare no conflicts of interest.

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