

A Study on the Negative Effects and Improvement Suggestions of Female Body Anxiety on Social Media Platforms

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Abstract. This article aims to explore in depth how social media platforms such as Instagram, Red note, and TikTok exacerbate women's body anxiety and its widespread negative impacts. By analyzing typical challenges, popular trends, and algorithm mechanisms on the platform, this study reveals that the "information cocoon" formed by algorithmic push on social media, highly visual content presentation, and digital and quantitative aesthetic standards collectively constitute the core mechanism that exacerbates women's body anxiety. Research has found that this reinforced anxiety not only leads to serious psychological and behavioral problems such as eating disorders, depression, and low self-esteem at the individual level, but also promotes the global convergence of single and narrow aesthetic standards at the social level, posing a significant threat to the well-being of women. Based on this, this article proposes a systematic and multi-level improvement proposal from three dimensions: platform governance responsibility, user media literacy education, and public policy supervision, aiming to provide a theoretical reference and a practical path for building a more inclusive and healthy network environment.

Keywords: Social media, Female body anxiety, Platform governance.

1. Introduction

In the digital age, social media has become deeply embedded in daily life, reshaping individuals' self-awareness and social interaction patterns. Its highly visual characteristics, such as photos, short videos, and live broadcasts, make it a core field for body image dissemination, construction, and competition [1]. Compared to traditional media, the interactivity, immediacy, and extensive participation of social media have made the narrative about the "ideal body" no longer a one-way indoctrination, but a complex game where users actively participate but passively shape it.

Many social media platforms such as Instagram and Red note use the combination of the "perfect body" tag and algorithm push to form a powerful aesthetic hegemony, invisibly defining what constitutes a "beautiful" and "desirable" body. This puts female users in a dilemma of "dual gaze" - facing both traditional male perspective judgments and more direct and frequent comparison pressure from same-sex relationships. Chen Linlin's research accurately points out that the platform has successfully transformed the living and diverse body into a series of measurable and comparable

numerical symbols by promoting highly quantifiable indicators such as "waist to hip ratio", "vest line", and "BM weight". Its value is simplified as the achievement of a series of cold data [1].

Social Comparison Theory exhibits astonishing amplification effects in the digital environment. Offline comparisons are usually limited and occasional, while online environments provide a vast array of carefully selected and refined "upward comparison" objects. According to experiments conducted by MIT Media Lab, users only need to browse retouched body photos for 10 minutes, and their self-evaluation and overall emotional state will significantly decrease [2]. A more profound impact comes from the widespread use of augmented reality (AR) filter technology, which has led to a phenomenon known as "Snapchat Dysmorphia" - users are unable to objectively perceive their true appearance and body due to long-term exposure to highly beautified real-time filters, and even seek plastic surgery to match the images in the filters [3].

Existing research has mostly focused on sample populations with clinical diagnoses (such as eating disorders), while the innovation of this study lies in combining the analysis of algorithm operation mechanisms with behavioral data of ordinary users, revealing the widespread penetration of body anxiety in Non clinical populations. Cheng Sufen's research provides strong evidence for this. Her study found that up to 68% of women born in the 1990s in Non clinical samples experience varying degrees of body anxiety due to content on social media, which fully confirms the general susceptibility of ordinary users to such risks [4].

Therefore, this study aims to systematically sort out the pathways through which social media triggers female body anxiety, analyze its multidimensional negative effects through typical cases, and ultimately propose actionable improvement suggestions from the perspective of multi-party collaborative governance to address this increasingly severe digital society issue.

2. Literature review

The research on the relationship between media and body image has a long history. Early research focused on the influence of traditional fashion magazines and television advertisements on the internalization process of women's "Thin Ideal". These studies consistently found that exposure to a large amount of media content that emphasizes thinness is positively correlated with women's dissatisfaction with their bodies, dieting behavior, and the risk of eating disorders.

With the rise of social media, the focus of academic research has shifted. The new generation of research is starting to focus on the unique ecological environment of social media: firstly, the decentralization of content production. Each user is both a consumer and a producer of content, which makes the shaping of an "ideal body" no longer exclusive to supermodels and celebrities, but jointly constructed by a large number of KOLs, internet celebrities, and even friends around them. This "perfection around us" is more deceptive and oppressive. Secondly, algorithmic intervention. The recommendation algorithm of the platform is not neutral. It optimizes user engagement (likes, comments, duration of stay), and content containing "perfect body" and "extreme challenges" often stimulates strong emotional reactions and interactions, thus being prioritized by the algorithm for promotion, forming a vicious cycle of "anxiety interaction more push deeper anxiety" [1,2]. Thirdly, quantification of interaction. The popularity of body shape is directly quantified as the number of likes, followers, and compliments in the comment section. This instant and public value feedback system greatly strengthens users' tendency to bind their self-worth with appearance based self worth [3].

In domestic research, scholars have conducted in-depth discussions based on the local cultural context. Gao Linting critically analyzed how platforms such as red note package strict body management as a new era of "female empowerment" and "self investment" through seemingly

positive language such as "self-discipline check-in", "counterattack narrative", and "reconciliation with bare skin", but cleverly conceal the essence of commercial regulation behind it, prompting consumers to continuously purchase fitness courses, meal replacement foods, and beauty and skincare products [5]. Yin Yanting's research reveals a serious fact: the rampant standards of "no more than a hundred good women", "A4 waist", "cartoon legs" on social media are severely distorting the public's perception of a healthy body shape. Her research shows that platform content deviates the concept of a "normal body shape" from medical health standards by 37% [6].

In summary, existing literature has laid a solid foundation for understanding the relationship between social media and body anxiety, but most studies either focus on psychological impact analysis or concentrate on platform case discussions. This study attempts to conduct an integrated exploration, placing algorithm logic, business drivers, cultural pressure, and individual psychology within the same analytical framework. Through cross platform typical case comparisons, it aims to more comprehensively reveal their mechanisms of action and propose more systematic governance solutions.

3. Case analysis

3.1. Instagram's "hip tip challenge"

The Hip Tip Challenge, which became popular on Instagram in 2022, is a highly representative case. This challenge requires women to demonstrate the natural degree of concavity above their pelvis and on both sides of their hip bones, implying that the deeper and more distinct the concavity, the more "perfect" their figure will be. This challenge shapes a feature that belongs to the natural human body structure (not everyone has obvious hip concavity) into a new aesthetic standard.

According to relevant research tracking, during the peak period of this challenge, over 3 million users participated in content publishing [1]. Subsequent surveys showed that 67% of participants adopted unhealthy body modification strategies in pursuit of a more pronounced hip depression, including extreme dieting to reduce overall body fat, as well as targeted and sometimes excessive strength training, which even posed a risk of sports injuries. Despite public pressure, the Instagram platform ultimately marked the challenge tag as "potentially harmful" and linked it to a health resource page, but it was too late. The recommendation mechanism of the algorithm has already resulted in its content receiving over 2.3 billion astonishing exposures [7]. This case clearly exposes the huge time and effectiveness gap between the platform's post remediation mechanism and the algorithm's ability to amplify harm, and its "diffusion first, governance later" model has caused substantial harm to users' physical and mental health.

3.2. Red Note's "A4 waist challenge" and resistance movement

As an important "grass planting" community in China, Red note's content ecology also deeply influences women's aesthetic views. The "A4 waist challenge" (waist width less than a vertically placed A4 paper) once swept the platform, with numerous KOLs and ordinary users flocking to showcase their slender waist limbs, forming a powerful viral spread effect. This challenge uses tangible objects (A4 paper) to make abstract and thin aesthetics operable, comparable, and highly provocative.

However, what is more valuable for research is the spontaneous "anti A4 waist" resistance movement that emerged among users. Some sober users have started posting posts advocating for body diversity, criticizing this singular aesthetic standard, and showcasing bodies that do not

conform to the "A4 waist" but are still healthy and confident. But Chen Lin's research found a key issue: these "anti challenge" contents aimed at deconstructing anxiety and spreading positive body awareness received less than 1/10 of the total traffic recommendations of the original "A4 waist" topic [8]. This data sharply reveals the inherent contradictions in the underlying business logic of the platform. Despite the platform's verbal support for diversity, its algorithm essentially tends to promote content that can bring higher user stickiness and interaction rates, create anxiety or desire, indirectly suppressing the volume of resistance movements and making it difficult for critical discourse to form effective dissemination.

3.3. TikTok's body transition videos

The popular "body transition videos" on TikTok (usually in the form of "How I got my body in 3 months") provide a more covert mode of anxiety production. This type of video showcases the amazing transformation of the protagonist from an "ordinary" body to an "ideal" body through before and after comparison, usually accompanied by motivational music and fitness clips, creating an illusion of "everyone can achieve it as long as they work hard".

According to an analysis by MIT Media Lab, 83% of such popular videos use unrealistic transformation techniques, including angles deception, lighting, selective editing, and final stage retouching (Photoshop), rather than relying solely on fitness and nutrition as claimed [2]. However, due to its dynamic and "realistic" presentation, up to 62% of teenage viewers mistakenly believe that these changes are real, natural, and achievable. This kind of content constitutes a form of 'visual deception education', and long-term viewing not only creates anxiety, but also distorts teenagers' understanding of the process and time of healthy fitness. As Wang Shi Yao stated in her research, this has led to significant "intergenerational differences in body recognition" - Generation Z young people are more inclined than millennials to accept this body standard mediated and defined by digital technology, and see it as a real and desirable goal, which poses a long-term and potential threat to the healthy development of their body image [2].

4. Discussion and suggestions

4.1. Negative impact analysis

4.1.1. Individual level

The negative impact of social media body anxiety on individual psychology and behavior is profound and multifaceted. According to relevant data from the World Health Organization (WHO), there is a significant positive correlation (correlation coefficient $r=0.43$) between the incidence of depressive symptoms in young women aged 13-25 and their daily social media usage duration worldwide [9]. Besides emotional issues, functional disorders are more common. The risk of eating disorders increases sharply, and behaviors such as dieting, overeating, and vomiting may occur. The popular phenomenon of "BM style" (Brandy Melville style, advocating small size girls' clothing) recorded by Fan Meng Yin is a clear evidence of this anxiety permeating into daily life. The brand's One Size clothing, which is relatively small, directly becomes the "standard size" for measuring body shape. Buying and being able to wear BM clothes itself becomes a source of identity recognition and anxiety, deeply affecting the dressing choices, social activities, and even dietary habits of young women [10].

4.1.2. Social level

At the macro level, the proliferation of body anxiety on social media is driving the globalization and narrowing of aesthetic culture. The "Kardashian style" exaggerated waist to hip ratio, originating from European and American platforms, and the "white and thin" aesthetic, originating from East Asia, have spread and hybridized through platform globalization, forming a new, digital aesthetic hegemony that squeezes the diverse aesthetic spaces inherent in different cultures, races, and body types. Gao Linting pointed out sharply that platform capital cleverly packaged body management as women's empowerment through the phrase "self-discipline is freedom", but in fact completed a profound business discipline. It allows women to voluntarily place themselves in continuous self-monitoring and transformation, and consume for it. Yin Yanting's research data - platform content deviates the concept of "normal body shape" from medical standards by 37% - warns that when a distorted perception becomes a common phenomenon, society's health concept will face systemic risks [6].

4.2. Improvement suggestions

To address this systemic challenge, it is necessary to rely on the collaborative efforts of the platform, users, and policy makers to build a multi-level governance system.

4.2.1. Platform responsibilities

Platform enterprises must bear the main responsibility for the social impact brought by their algorithms and content ecology.

We should change the recommendation logic that focuses solely on engagement and introduce the concept of 'Value Sensitive Design'. For example, we can learn from the law passed by France in 2021, which requires mandatory labeling of the body shape and skin color of models that have undergone digital alteration in all commercial advertisements, otherwise fines will be imposed [7]. The platform can extend this rule to all KOLs and advertising content. At the same time, as suggested by Liu Yi, positive traffic weighting should be set in the algorithm for content that displays real body diversity and opposes anxiety, such as systematically increasing its recommendation weight to 30% of the total traffic, to ensure the visibility of diverse voices [3].

In addition, a more proactive and sensitive mechanism for identifying and intervening in harmful content should be established, rather than post labeling. When rapid growth of topics such as "waist to hip ratio challenge" is detected, a risk assessment should be automatically triggered, and Body Positivity content and health resources should be actively pushed to search and participating users. Provide more convenient "time management" tools and "content preference" settings options, allowing users to easily manage usage time and filter out unwanted content types.

4.2.2. User education

Enhancing users' critical media literacy is the intrinsic core of resisting anxiety.

Media literacy courses and public outreach should include the following core modules:

Popularize common photo editing techniques, angle deception, and lighting effects to users, such as how to identify shadow powders used to shape waistlines, wide-angle distortions for elongating legs, etc [9]. Deconstructing myths is the first step in dispelling superstition [2].

Promote the World Health Organization's (WHO) recommended daily screen entertainment time limit of no more than 2 hours for adolescents, and encourage diverse offline life experiences [9].

Guide users to shift their focus from body look to body function and sensation. We can learn from Zhang Yanbo's proposal of "body function appreciation training", such as being grateful for the exercise and perception abilities brought by the body, rather than whether it meets certain visual standards [7].

4.2.3. Policy suggestions

The government and regulatory agencies need to establish a bottom line for platform responsibilities and protect public interests through legislation and standard setting.

Promote industry associations to develop grading and labeling standards for image modification levels, requiring explicit labeling based on the degree of modification (such as simple color grading, slimming, and long leg effects) [8].

Drawing on the "Systemic Risk Assessment" clause in the European Union's Digital Services Act (DSA), it is mandatory for large social platforms to regularly assess the potential risks of their systems to the physical and mental health of users, especially minors, and take effective measures to reduce these risks [1].

Conduct joint research and governance dialogue on aesthetic issues specific to cultural regions (such as the "white, young, thin" aesthetic in East Asia), share best practices, form regulatory synergy, and address challenges brought by cross-border platforms [6].

5. Conclusion

This study systematically analyzed the complex relationship between social media platforms and female body anxiety, revealing its underlying mechanisms, wide-ranging multidimensional impacts, and necessary systemic governance pathways. Based on the comprehensive analysis of the entire text, the following core conclusions can be drawn:

Firstly, female body anxiety on social media is not an isolated and individualized psychological phenomenon, but rather the inevitable result of the deep interweaving and joint action of algorithmic logic, commercial interests, and cultural pressure. The algorithm recommendation system of the platform continuously pushes modified and idealized body images to users by constructing "information cocoons" and "filtering bubbles", thereby efficiently creating and amplifying a common body dissatisfaction and anxiety emotion. Commercial capital cleverly utilizes and further stirs up this anxiety, transforming it into sustained consumption power, forming a closed-loop business model of "creating anxiety - providing solutions (goods/services) - profiting from it". Meanwhile, the widespread existence of a single aesthetic narrative in social culture provides a breeding ground and seemingly reasonable basis for this anxiety. These three constitute a powerful and difficult to break free closed-loop system of "digital regulation business profit".

Secondly, its negative impact is comprehensive and profound. At the individual level, it directly harms users' mental health, leading to problems such as eating disorders, depression, low self-esteem, and distorting healthy body images and self-awareness. At the socio-cultural level, it promotes the global narrowness and homogenization of aesthetic standards, squeezes the living space of physical diversity, dissolves local and healthy aesthetic culture, and poses a long-term and structural threat to the collective well-being of women.

Based on this, the governance plan proposed in this study must adhere to a systematic approach of collaborative governance among multiple stakeholders. The platform must bear its primary corporate ethical responsibility by optimizing algorithm mechanisms, strengthening content review, and promoting positive content to improve the internal ecosystem. Users need to enhance their

critical thinking and resistance abilities through media literacy education, transforming from passive consumers to conscious participants. Policy makers need to establish a bottom line, clarify rules, and provide solid legal protection for platform responsibilities and user rights through forward-looking legislation and regulation. Only when the three parties perform their respective duties and form a joint force can the above-mentioned closed loop be effectively broken.

Looking ahead to the future, this study believes that there are several directions that urgently need to be explored in depth: firstly, conducting more refined quantitative research to reveal the precise "dose-response" relationship between algorithm transparency, content exposure duration, and user psychological reactions; The second is to broaden the research perspective, pay attention to the differentiated body pressure faced by male and other groups on social media, and avoid the singularity of research; The third is to be highly vigilant about the new challenges of "surreal bodies" that cutting-edge technologies such as VR/AR and metaverse may bring, which may create more immersive and deceptive aesthetic standards and have a deeper impact on self-awareness.

Ultimately, the true path to physical liberation lies in fundamentally challenging and subverting the digital logic that objectifies, quantifies, and commodifies the value of the body. Its goal is not to conquer the physical body of nature to conform to the strict standards of the virtual world, but to reshape a diverse, inclusive, and autonomous body view and self-worth identity based on health, functionality, and self acceptance. This is a challenging but profound path that requires sustained efforts and wisdom from all sectors of society.

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