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# A Study on the Influence of Social Media Use on Psychological Anxiety among Young Women

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## ABSTRACT

To explore the relationship between social influence, social comparison, clarity of self-concept, and psychological anxiety among young women during their usage of social networking sites, our study selected 338 young women aged 14–34 from the social site platforms of Little Red Book and Weibo for questionnaire surveys. The Passive Social Network Utilization Scale, Social Comparison Scale (SCS), Social Influence Questionnaire, Self-Concept Clarity Scale (SCCS), and Generalized Anxiety Disorder Scale (GAD-7) were employed to measure the subjects. Our results show that the frequency of passive social media use is positively related to the level of psychological anxiety. Social comparison, social influence, and unclear self-concepts under social media use are negatively predictive of psychological anxiety. The chain mediation effects indicate that social comparison and social influence under social media use negatively predict the clarity of self-concept, thus having a negative impact on the psychological health of young women. Therefore, young women should strengthen their self-concepts, control their frequency of social media usage, avoid addiction, and pay special attention to their frequency of passive use, in order to protect their psychological health. Our study provides some practical implications and insights regarding the relationship between young women's social media use and psychological health.

## KEYWORDS

Social media; young women; mental health; social comparison and influence; clear self-concept

## Introduction

According to e-marketer's "Digital 2023 April Global Statshot Report" report, the monthly global social media users are expected to reach 3.86 billion in 2023, which is equivalent to 48.3% of the global population, and there is still space for this quantity to increase [1]. On average, users spend nearly two and a half hours per day on social media platforms. The rapid expansion of social media has changed the world, and the way people think and interact on a global scale [2]. During this period, mental health problems have become increasingly prominent. Data shows that the total number of individuals aged 18–23 who reported experiencing severe depression in a year increased by 83% between 2008 and 2018 [3]. Therefore, some scholars believe that the spread of

social media may be an important contributing factor to mental health problems. For example, some research results have shown that the use of social media may lead to negative consequences, such as psychological anxiety among females [4,5], suicide and self-harm [6,7], poor sleep [8], anxiety and depression [7,9], life satisfaction [10,11], body dissatisfaction [12], and the emergence of some destructive behaviors. The occurrence of these problems may be related to the user's age, personality, social media usage time, and gender.

Statistics show that globally, women are twice as likely to suffer from depression as men. In the United States, between 10–25 out of 100 women suffer from severe depression, while the number is only 5–12 for men. A similar situation exists in China (<https://www.lpsee.com/20710.html>). Such situations



may be influenced by socio-economic and family factors [13], such as employment [14], education, household chores, child care, and income [15]. Additionally, women tend to place more emphasis on their appearance and body than men. In February 2021, a questionnaire survey conducted by China Youth Daily found that the number of college students with appearance anxiety was as high as 59.3%, with 59.67% of females experiencing moderate levels of appearance anxiety, while the proportion among males was only 37.14% [16]. The excessive concern of women for their appearance is no longer a subculture issue in some circles, but has become a phenomenon that requires widespread social attention [17].

As can be seen, academia has conducted a large number of studies investigating social media platforms and women's mental health separately. However, few studies have explored the correlation between social media platform usage and women's mental health, data shows that as of March 2023, out of the over 3 billion daily active users of the social media giant Meta's applications, 50.4% are female users [18]. Some studies have shown that single women are more likely to be dependent on the Internet than other women, with young and employed women being more dependent, and mental health issues often being associated with social media dependence [19]. In addition, among other generations, young people are at a higher risk of developing mental health problems. Half of all lifelong mental illnesses occur at age 14, and three-quarters occur at age 20 or older [20]. Therefore, this study focuses on young women who use social media as study subjects and, following the definition of the United Nations Educational, Scientific and Cultural Organization (UNESCO), an age group of 14–34 is defined.

Empirical studies conducted abroad have shown that using social networking sites may not be the direct cause of mental health problems. Rather, it is the mediating mechanism between social media use and mental health problems that is the core issue [21,22]. Related research on mediating mechanisms has involved self-concept clarity, social comparison, positive self-presentation, self-esteem, rumination, and more [23]. Adolescence is a transitional period from dependence on adults to independence and autonomy. It is the age of self-concept and identity development and is vulnerable to factors such as gender, family, peers, culture, and trends. Social networking sites provide a broader way to influence self-concept clarity, such as through interpersonal communication, self-disclosure, social comparison, and feedback from others. However, most of the relevant empirical studies use the Self-Concept Clarity Scale (SCCS) developed by Campbell et al. [24], which does not include components related to body and appearance self-concepts that are more important for women in today's society. This study aims to explore such issues to more comprehensively reveal the impact of social media use on young women's self-concepts.

In addition, the impact of social comparison and social contagion on users' mental health has also been a hot trend in recent years. However, most academic literature only focuses on the social comparison bias-the cognitive differences caused by the positive information-induced comparison effect that leads to jealousy and psychological

anxiety-and less on the assimilation effect induced by negative information. Representative studies on the contagion mechanism have shown that it not only exists in happiness but also in negative psychological conditions, such as anxiety, depression, and women's psychological anxiety, which accompany social network diffusion [25]. Compared to men, women have stronger empathy and need more social support, making them more susceptible to social influence [26]. Compared to other age groups, young people are more susceptible to peer influence, such as reacting to subcultures within their social networks, and are more likely to accept and assimilate such cultures. The influence of this mechanism of socialization on this group may also impact their self-concept clarity [27].

Young women aged 18–23 are more likely to experience psychological anxiety, regardless of age or gender differences when compared with other age groups. They are also a group that uses social media extensively. Therefore, this article hopes to discuss the mediating factors that affect the mental health of young women in social media, combining the above three aspects.

## Literature and Hypothesis

### *Social comparison behavior and psychological anxiety in women*

Social comparison refers to the process of collecting and comparing information from similar individuals in order to obtain a clear self-evaluation when objective information about one's own evaluation is lacking [28]. The use of social media provides a broader platform for social comparison, where massive social information such as other people's photos, videos [2], life experiences, and personalized recommendations of similar groups can trigger social comparison behavior in individuals. The convenience, instantaneity, and cross-regional nature of social networks can also make social comparison immediate [29] and have a profound impact on an individual's self-awareness and self-construction [2]. Positive information in the online environment is more likely to trigger social comparison, leading to thoughts of others being better than oneself and feelings of inadequacy while browsing such information, leading to comparison and further triggering negative emotional experiences, such as jealousy [30], depression [31], low self-esteem, frustration [31], and problem behavior.

Individual differences exist in the formation of social comparison. Research has shown that personality plays a key role, with unstable personality traits (meaning a person's poor stability in emotions, behavior, and cognition, susceptible to external environmental influences and changes) positively correlated with upward social comparison and feelings of jealousy [32,33]. Sensitivity to depression or anxiety can also lead to different negative effects of social comparison. Furthermore, the purpose of a user's use of social media also has a relevant impact, with motivations to collect information, seek attention, and spend time on social media more likely to trigger social comparison [34].

On the other hand, social comparison depends on the way social media is used-active use and passive use [35,36].

Active use refers to active sharing of personal updates and interactions with others, while passive use refers to users only browsing others' information without participating in interaction. Impression management is often present in individual self-disclosure on social media [36], presenting a positive and perfect aspect of themselves. For example, women may post photos that have been edited to appear more beautiful. Real-time empirical research suggests that passive use of social networking sites is more likely to lead to social comparison [37].

Therefore, we propose the following hypotheses:

Hypothesis 1a: The longer young women use social media, the more social comparison behavior they exhibit.

Hypothesis 1b: The more optimistic the personality of young women, the less social comparison behavior they exhibit during the use of social media.

Hypothesis 1c: The more young women use social media passively, the more social comparison behavior they exhibit.

Hypothesis 1d: The more social comparison behavior young women exhibit on social media, the more psychological anxiety problems they experience.

#### *Social influence and psychological anxiety in women*

Simply put, the socialization mechanism can be summed up as "Those who are near vermilion become red; Those who are near ink become dark.", leading to the development of individuals in a subtle and implicit way through groups [38]. The production of social contagion mechanism depends on persistent interaction and the small group norms that result from it [38]. It is based on "social influence," and people react to the social influence they receive. The progressive steps of this mechanism are compliance, identification, and internalization [39]. The information cocoon effect caused by the personalized recommendation function of social media creates small, group-labeled subgroups that influence individuals in their daily interactions.

Studies have found that nearly 20% of students reported feeling more depressed or anxious when their friend's posted information about personal anxiety or depression online. Kramer's research shows that if participants are exposed to fewer positive (negative) information posts from their Facebook contacts, they are more likely to reduce their own positive (negative) information posts [40]. Emotional contagion theory suggests that people's senses transmit emotional information, and this information spreads in interpersonal communication in an automatic, unconscious way, causing the users who receive the emotion to have a consistent emotional experience with the user who stimulated it [26]. Many scholars have suggested that women are more concerned about the emotions of others, making them more susceptible to imitation and emotional contagion than men [41].

In social media interactions, men tend to use dominant language, while women are more focused on receiving likes, support, and positive information when they actively post updates about themselves [42]. With the development of the internet, opportunities for public expression have gradually increased, and individual users can express information and convey their views on platforms without being limited by time and space. However, due to the massive amount of

information and difficulty in distinguishing truth from falsehood, many users often find it difficult to make the correct judgments. Especially in situations where opinions are being expressed, users need to improve their information processing abilities to accurately express their positions. Therefore, when women express their opinions about something, in order to obtain positive information and gain the identity recognition of members of their online social circle and maintain a sense of "belonging," individuals gradually accept, comply with, and even assimilate the thoughts and behaviors of their peers [43].

Based on this, we propose the following hypotheses:

Hypothesis 2a: The longer young women use social media, the more they are affected by social contagion.

Hypothesis 2b: The higher the degree of identification young women have on social networking sites, the higher the degree of social contagion they are affected by.

Hypothesis 2c: The more social contagion young women experience on social media, the more psychological anxiety problems they experience.

#### *Clarity of self-concept and psychological anxiety in women*

Self-concept clarity reflects the degree of clarity that individuals have about themselves, including the three aspects of the clarity of self-concept content, the internal consistency of personal attributes, and stability [24]. Self-concept clarity is closely related to people's judgments and evaluations of daily life. According to the depression cognitive theory, the way individuals view themselves and handle problems may lead to the generation of depressive emotions, indicating that self-concept clarity can affect an individual's psychological adaptation in dealing with various problems. One cognitive issue is negative self-perception, and existing research shows that the lower the degree of self-concept clarity, the higher the degree of negative emotions, stress perception, depression, anxiety, and other negative emotions [44,45]. Such individuals are confused about their own attributes, leading to the generation and persistence of depressive emotions.

On the other hand, in the era of the widespread Internet, social networking sites, as an important environmental factor, profoundly affect the shaping and development of an individual's self-concept. During the use of social networking sites, individuals have more comprehensive and diverse means to explore and experiment with different aspects of themselves. However, there is a risk of irreconcilable differences between these different aspects, leading Valkenburg and Peter to propose the "self-concept differentiation" hypothesis, suggesting that social networks have a negative impact on self-development [46]. Some studies have found a negative correlation between the frequency of use of social networking sites and an individual's level of self-concept clarity [47]. In addition, an individual's self-exploration and self-expression behavior on the network is negatively correlated with their self-concept clarity [48]. Social networking site usage is also significantly positively correlated with issues related to an individual's physical appearance [49], but negatively correlated with their self-esteem [24]. These empirical research results partially verify the hypothesis.

Based on this, we propose the following hypotheses:

Hypothesis 3a: The longer young women use social media, the lower the level of clarity of their self-concept.

Hypothesis 3b: Young women with lower levels of self-concept clarity during the use of social media will experience more psychological anxiety problems.

#### *The interaction between social comparison or contagion and the clarity of self-concept*

When young women use social media, they are affected by social comparison, social influence, and the clarity of their own self-concept, all of which can serve as mediating variables between social media use and anxiety. However, these variables are not independent, but rather linked in some way. A clear self-concept refers to the degree to which a person's self-awareness is defined, stable over time and internally consistent [50]. When individuals lack a clear sense of their own identity, they rely more on external influences to define themselves [50], and may be more likely to compare themselves to others to determine where they stand relative to them [51]. In other words, these individuals may use social comparison as a way to collect information about who they are and how they fit into society. Evidence suggests that lower levels of self-concept clarity are related to a greater tendency to engage in social comparison [51].

In addition, social media users automatically recognize and perceive negative emotions when encountering negative information, resulting in increased negative emotions and decreased positive emotions such as anxiety and depression. At the same time, when facing negative behavioral information presented by others on social networks, individuals tend to pay attention to similarities between themselves and such people, and thus associate themselves with these negative behaviors, imitating and reproducing them. In this process, they identify and internalize these attitudes, leading to unclear self-concepts and ultimately increasing their negative emotions [52]. On social media, the comparative effect of positive information and the assimilation effect of negative information coexist, which can lead to a series of maladaptive outcomes for individuals, such as negative emotions and unclear self-concepts.

Based on these findings, we hypothesize that:

Hypothesis 4a: The more social comparison a young woman experiences, the lower her level of self-concept clarity will be.

Hypothesis 4b: The more social influence a young woman is exposed to, the lower her level of self-concept clarity will be.

## **Data, Variables and Methods**

### *Data*

Convenience sampling was used to select 360 young women aged 18 to 35 with experience using social networking sites such as QQ, WeChat, Xiaohongshu, and Weibo for a questionnaire survey. After collecting and organizing the data, 338 valid questionnaires were obtained, with an effective rate of 93.89%. From the perspective of age, educational level, and occupation, the data sample collected in this survey conforms to the age characteristics of the

main user group of social media use and the respondents generally have a higher level of education, as shown in the Table 1. Therefore, it can be considered that the sample of this survey has a certain representativeness and can reflect the behaviors and attitudes of social media use reasonably well.

Moreover, in order to further improve the rigor of the survey, the questionnaire was conducted anonymously, and some items of the scale were expressed in reverse.

### *Variable operationalization*

#### *Generalized anxiety disorder scale (GAD-7)*

The dependent variable of this study is the anxiety index of young women, and the Generalized Anxiety Disorder Scale (GAD-7) is used for the scale. Many studies have demonstrated the good reliability and validity of the GAD-7 scale. For example, Tahia Anan Dhira conducted a study on university students in Bangladesh and found that the GAD-7 scale has reliability and factor validity [53], while Emily Pickering's research found that the use of GAD-7 in routine clinical practice is reliable [54]. The GAD-7 scale consists of seven items, with each item scored on a 4-point scale (0–3), and the total score is obtained by summing the scores of the seven items, as shown in the Table 2. According to the scoring criteria, the scale is divided into four groups: 0–5 points, 6–9 points, 10–14 points, and 15–21 points, corresponding to no anxiety, mild anxiety, moderate anxiety, and severe anxiety, respectively [55]. In this study, the Cronbach's  $\alpha$  coefficient of the scale was 0.937.

#### *Social comparison scale (SCS)*

Social comparison refers to the process of collecting and comparing information from similar individuals in order to obtain a clear self-evaluation when objective information about one's own evaluation is lacking [28]. The Social Comparison Tendency Scale developed by Wang et al. [55] was used in this study. The scale consists of 11 items and includes two dimensions: ability and opinion. It is mainly used to evaluate individual differences in the social

**TABLE 1**

**Results of descriptive statistical results (N = 338)**

| Statistical item | Category                                  | Frequency | Percentage % |
|------------------|---|-----------|--------------|
| Age              | 18–23                                     | 253       | 74.9         |
|                  | 24–29                                     | 62        | 18.3         |
|                  | 30–35                                     | 23        | 6.8          |
| Education level  | Junior college and below                  | 117       | 34.6         |
|                  | Undergraduate                             | 206       | 60.9         |
|                  | Master degree and above                   | 15        | 4.4          |
| Occupation       | Students                                  | 187       | 55.3         |
|                  | Employees of enterprises and institutions | 97        | 28.7         |
|                  | self-employed                             | 54        | 16.0         |
| Total            |   | 338       | 100.0        |

TABLE 2

Results of descriptive statistical results (N = 338)

| Question   | Option                          |
|--|---------------------------------|
| Feeling anxious, worried, and agitated                               | Never, Rarely, Sometimes, Often |
| Unable to stop or control worry                                      | Never, Rarely, Sometimes, Often |
| Worrying too much about various things                               | Never, Rarely, Sometimes, Often |
| Feeling very tense and unable to relax                               | Never, Rarely, Sometimes, Often |
| Feeling extremely anxious to the point of being unable to stay still | Never, Rarely, Sometimes, Often |
| Becoming very upset or easily angered                                | Never, Rarely, Sometimes, Often |
| Feeling as if something terrible is going to happen                  | Never, Rarely, Sometimes, Often |

comparison process of abilities and opinions [56]. All items were scored on a 5-point scale, with higher scores indicating a stronger tendency toward social comparison. Specifically, individuals who score higher on this scale are more likely to associate what happens to others with themselves and have a greater interest in the behavior and thoughts of individuals who are more similar to themselves (including similar living environment, living conditions, and life experience). In order to make the measurement more targeted, this study limited the scope of comparison in the original questionnaire to “on social networking sites”, such as “I often compare my situation with others when using social networking sites.” In this study, the Cronbach’s  $\alpha$  coefficient of the scale was 0.945.

#### *Passive social network site use scale (PSNSUS)*

Passive social media use refers to the behavior of users who only browse other *people’s information without engaging in interaction*. The Passive Social Network Site Use Scale (PSNSUS) was developed by Liu et al. [57], translated by Hatfield et al. [40], was used to evaluate the social networking site use of the research participants. The scale consists of four items, scored on a five-point scale, where a higher score indicates a greater tendency for passive social network site use. As personal pages on social networking sites contain personal updates, links, and photos, “browse friends’ pages without interacting with them” is related to the other three items and requires correlation. In this study, the Cronbach’s  $\alpha$  coefficient of the scale was 0.967.

#### *Social contagion scale (SCS)*

The Social Contagion theory, based on an individual perspective, emphasizes the interaction and influence between people. It suggests that actors can not only be infected by others’ emotions, thoughts, and behaviors but also unconsciously imitate and synchronize with others’ facial expressions, speech styles, and body movements, thus triggering and deriving similar emotions and healthy behaviors [58].

In this study, the emotion contagion in social media was measured using items such as “I feel more anxious because of comments from friends with anxiety or pressure” and “I feel happy when friends make positive or uplifting comments.” Additionally, social contagion was also reflected in users’ tendency to be influenced by groupthink and the opinions of others when consuming and responding to shared information on social media. Therefore, this study used four questions such as “I am influenced by the opinions of those who interact with me when they mostly express different views from mine” and “I am influenced to forward and like a post when many others have already done so” to represent the impact of the online communities on individuals and the influence of social media friends on personal emotions, opinions, and behavior.

All items were scored on a 5-point scale, and a higher score indicated a higher degree of social contagion in social media. In this study, the Cronbach’s  $\alpha$  coefficient of the scale was 0.945.

#### *Self-concept clarity scale (SCCS)*

The clarity of self-concept reflects the level of individual’s understanding of themselves. The SCCS developed by Campbell et al. [24], translated by Niu et al. [58], was used in this study to measure the clarity and consistency of an individual’s self-concept. The scale consists of 12 items, and for clarity dimensions, there are two additional items that are relevant to body self-concept and appearance self-concept, which are relatively more concerned by contemporary women’s groups. A clarity item is “I think dressing up and changing my appearance is because of the overall aesthetics of society.” For consistency dimensions, an item is “Sometimes I am very satisfied with my appearance, sometimes very dissatisfied.” All items are scored on a 5-point Likert scale (1 “strongly disagree” to 5 “strongly agree”), and a higher score indicates a lower level of self-concept clarity. In this study, the Cronbach’s  $\alpha$  coefficient of the scale was 0.96.

#### *The life orientation test (LOT)*

The revised version of the Life Orientation Test (LOT), developed by Wen in 2012 [59], was used in this study. The scale includes 6 items such as “In uncertain situations, I often expect the best outcome” and uses a 5-point Likert scale (1 “strongly disagree” to 5 “strongly agree”). Three of the items are reverse-scored. A higher score indicates a higher level of optimism. In this study, the Cronbach’s  $\alpha$  coefficient of the scale was 0.84.

#### *Others*

In this study, age, education level, occupation, and online approval were used as control variables. The social behaviors of liking and commenting express others’ recognition and approval. When individuals receive likes and comments, they feel understood and accepted by others, which stimulates social identity. Therefore, the number of likes, comments, and reposts received when posting comments on social media (WeChat Moments, Little Red Book) was used to show the degree of recognition experienced by the participants during their social media usage.

TABLE 3

## Descriptive statistical results and correlation analysis between variables

| Variable                                   | M     | SD    | 1        | 2       | 3       | 4       | 5       | 6       | 7       | 8 |
|--|-------|-------|----------|---------|---------|---------|---------|---------|---------|---|
| 1. Duration of daily use of social media   | 3.04  | 1.327 | 1        |         |         |         |         |         |         |   |
| 2. Social support received on social media | 3.37  | 1.279 | -0.008   | 1       |         |         |         |         |         |   |
| 3. Psychological anxiety index             | 16.51 | 6.21  | 0.106    | 0.490** | 1       |         |         |         |         |   |
| 4. Optimism index                          | 14.62 | 8.08  | -0.159** | 0.236** | 0.164** | 1       |         |         |         |   |
| 5. Degree of social comparison             | 31.05 | 11.61 | 0.080    | 0.410** | 0.716** | 0.201** | 1       |         |         |   |
| 6. Passive use of social networking sites  | 9.85  | 5.68  | 0.042    | 0.201** | 0.291** | 0.726** | 0.363** | 1       |         |   |
| 7. Degree of social contagion              | 19.30 | 7.06  | -0.031   | 0.724** | 0.623** | 0.328** | 0.515** | 0.251** | 1       |   |
| 8. Self-concept clarity                    | 40.74 | 19.37 | 0.093    | 0.451** | 0.949** | 0.190** | 0.723** | 0.320** | 0.608** | 1 |

Note: \*\* $p < 0.01$ , \* $p < 0.05$ .

## Results

### General situation and related analysis of social media use by young women group

This section describes the mean and standard deviation of the sample data for each variable, as shown in the Table 3. In this study, the average daily usage time of social networking sites for adolescents was rated as  $3.04 \pm 1.33$ , which corresponds to at least 4–5 h of daily usage time for young women. The average score for passive social media use frequency was  $9.85 \pm 5.68$ , indicating that approximately 25% of young women tend to use social networking sites passively without actively presenting themselves. The average score for social comparison tendency on social networking sites was between 20–42 out of a total score of 55 ( $31.05 \pm 11.61$ ), indicating that social comparison tends to be more frequent among young women on the internet. The mean score for social contagion was  $19.30 \pm 7.06$  out of a total score of 30, and the average score for self-concept clarity (the higher the score, the more ambiguous the self-awareness) was around 45.86. The score for psychological anxiety level in young women was in the range of  $16.51 \pm 6.21$ , indicating that anxiety problems are generally common and serious in young women.

Correlation analysis is used to study whether variables have a correlation relationship, and the correlation coefficient is used to measure the degree of correlation between variables. In this study, SPSS 25.0 statistical tool was used to conduct Pearson correlation analysis to study whether there is a significant correlation between the eight latent variables in the hypothetical model, so as to preliminarily verify whether the research hypothesis is established.

The correlation coefficient matrix showed that the daily usage time of social media is not significantly correlated with social comparison, while passive use frequency of social networking sites is significantly positively correlated with social comparison ( $p < 0.01$ ) and the Pearson correlation coefficient is greater than 0.3, indicating a strong correlation. Thus, conclusion 1a is not supported, and it can be concluded that the longer young women use social media, the more they are influenced by social comparison in the context of passive use of social media. The optimism

index (the higher the index, the less optimistic) is significantly negatively correlated with social comparison, indicating a strong correlation, validating conclusion 1b. Passive use of social networking sites is significantly positively correlated with social comparison ( $p < 0.01$ ,  $r = 0.363$ ), and the correlation is strong, confirming conclusion 1c. Daily usage time of social media is not necessarily correlated with social contagion, while passive use of social media is significantly positively correlated with social contagion and self-concept clarity, validating conclusions 2a and 3a in the context of passive use of social media. Social recognition received on social media is positively correlated with social contagion, validating conclusion 2c. Social contagion, social comparison, and self-concept clarity are positively correlated with psychological anxiety with  $p < 0.01$  and  $r > 0.3$ , indicating a strong correlation, validating conclusions 1d, 2c, and 3b. In addition, social contagion and social comparison are significantly positively correlated with self-concept clarity, validating conclusions 4a and 4b. The above analysis results show that there is a certain correlation between the research variables set in the model and their influencing factors. However, further analysis and exploration are necessary to investigate the deeper causal relationships and the extent of their impact.

### Testing mediating effects

The results of the mediation analysis are shown in the Table 4. Passive use of social media frequency has a direct positive predictive effect on women's social comparison level ( $= 0.36$ ,  $p < 0.01$ ), social contagion ( $= 0.25$ ,  $p < 0.01$ ), and low self-concept clarity ( $= 0.29$ ,  $p < 0.01$ ). Social comparison ( $= 0.317$ ,  $p < 0.01$ ) and social contagion ( $= 0.544$ ,  $p < 0.01$ ) can positively predict lower self-concept clarity, and lower self-concept clarity ( $= 0.872$ ,  $p < 0.01$ ) can positively predict psychological anxiety in young women.

The results of the Bootstrap method for further testing the mediation effects are shown in the Tables 5 and 6, which indicate that the mediation effect of self-concept clarity is significant through two mediation chains: First, the indirect effect of passive use of social networking sites  $\rightarrow$  social comparison  $\rightarrow$  psychological anxiety has a confidence interval that does not include 0, indicating that this indirect effect is significant, with a mediation effect level of 8.06%.

TABLE 4  
Correlation coefficient matrix

| Regression equation                   |                                       | Significance of regression coefficients |         |       |          |
|---------------------------------------|---------------------------------------|---|---------|-------|----------|
| Dependent variable                    | Independent variable                  | R <sup>2</sup>                          | F       | β     | t        |
| Passive use of social media frequency | Passive use of social media frequency | 0.13                                    | 51.06   | 0.36  | 7.15**   |
| Passive use of social media frequency | Passive use of social media frequency | 0.06                                    | 22.58   | 0.25  | 4.75**   |
| Clarity of self-concept               | Passive use of social media frequency | 0.08                                    | 30.62   | 0.29  | 5.53**   |
| Clarity of self-concept               | Passive use of social media frequency | 0.601                                   | 167.386 | 0.043 | 1.152    |
|                                       | Level of anxiety in females           |   |         | 0.317 | 7.840**  |
|                                       | Social contagion level                |   |         | 0.544 | 12.951** |
|                                       | Passive use of social media frequency |   |         | 0.905 | 795.505  |
| Level of anxiety in females           | Level of anxiety in females           | 0.905                                   | 795.505 | 0.069 | 3.193**  |
|                                       | Social contagion level                |   |         | 0.060 | 2.392*   |
|                                       | Clarity of self-concept               |   |         | 0.872 | 32.680** |

Note: \*\* $p < 0.01$ , \* $p < 0.05$ .

TABLE 5  
Mediation analysis path 1

|   | Effect value | Boot standard error | Boot CI lower limit | Boot CI upper limit | Relative mediation effect |
|---|--------------|---------------------|---------------------|---------------------|---------------------------|
| Passive use of social networking sites → social comparison → psychological anxiety                        | 0.0278       | 0.0136              | 0.0018              | 0.0538              | 8.06%                     |
| Passive use of social networking sites → self-concept clarity → psychological anxiety                     | 0.0656       | 0.0375              | -0.0127             | 0.1360              | 19.02%                    |
| Passive use of social networking sites → social comparison → self-concept clarity → psychological anxiety | 0.2514       | 0.0392              | 0.1786              | 0.3355              | 72.89%                    |
| Total indirect effect   | 0.3449       | 0.0564              | 0.2280              | 0.4523              |                           |

TABLE 6  
Mediation analysis path 2

|  | Effect value | Boot standard error | Boot CI lower limit | Boot CI upper limit | Relative mediation effect |
|--|--------------|---------------------|---------------------|---------------------|---------------------------|
| Passive use of social networking sites → social contagion → psychological anxiety                        | 0.0206       | 0.0066              | 0.0073              | 0.0344              | 6.08%                     |
| Passive use of social networking sites → self-concept clarity → psychological anxiety                    | 0.1778       | 0.0433              | 0.0938              | 0.2666              | 52.48%                    |
| Passive use of social networking sites → social contagion → self-concept clarity → psychological anxiety | 0.1405       | 0.0312              | 0.0790              | 0.2061              | 41.47%                    |
| Total indirect effect  | 0.3388       | 0.0538              | 0.2312              | 0.4451              |                           |

The indirect effect of passive use of social networking sites → self-concept clarity → psychological anxiety is not significant, indicating that passive use of social networking sites cannot directly affect psychological anxiety through the mediation effect of self-concept clarity. The indirect effect of passive use of social networking sites → social comparison → self-concept clarity → psychological anxiety has a confidence

interval that does not include 0, indicating that this indirect effect is significant, with a mediation effect level of 72.89%, indicating that passive use of social networking sites can lead to psychological anxiety among young women through a chain mediation effect of social comparison and self-concept clarity. Second, the confidence interval of the indirect effect of passive use of social networking sites →

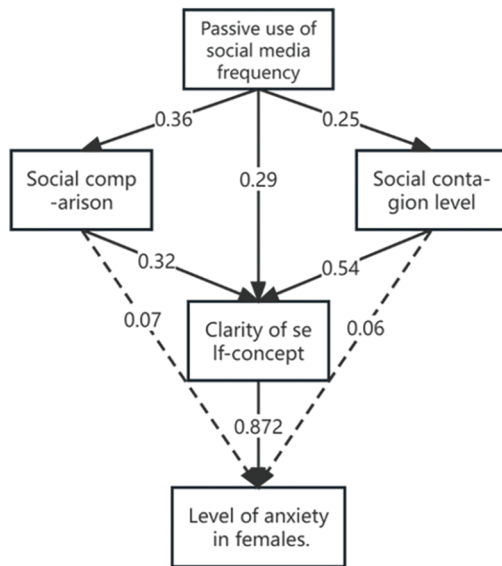


FIGURE 1. Mediation model.

social contagion → psychological anxiety does not include 0, indicating that the mediation effect of self-concept clarity is significant, with a mediation effect level of 6.08%. The mediation effect of passive use of social networking sites → self-concept clarity → psychological anxiety is significant, with a mediation effect level of 52.48%. The indirect effect of passive use of social networking sites → social contagion → self-concept clarity → psychological anxiety is significant, indicating that passive use of social networking sites can lead to psychological anxiety among young women through a chain mediation effect of social contagion and self-concept clarity. The specific path is shown in Fig. 1.

## Discussion

The research findings indicate a positive relationship between the use of passive social media and psychological anxiety in women, suggesting that the use of passive social network sites may increase the risk of psychological anxiety in women. However, further regression analysis revealed that the production of psychological anxiety in women is not directly attributable to the specific attributes of passive social network sites themselves. Rather, it depends on the mediating effects between social comparison or social contagion and clarity of self-concept, which indirectly predict psychological anxiety in women. Specifically, the results suggest that using passive social network sites can influence women's psychological anxiety through the mediating effect of social comparison, and can indirectly predict psychological anxiety in a positive way through the mediating effect of clarity of self-concept. Additionally, the mediating effect of social contagion can also indirectly predict psychological anxiety in women in a positive way, and this effect is further mediated by clarity of self-concept, which predicts psychological anxiety in women in a negative way. Moreover, among the three factors, the impact of clarity of self-concept on psychological anxiety in women is far greater than that of social comparison and contagion. Therefore, the use of passive social network sites is not a

direct cause of psychological anxiety in women but is rather a risk factor for psychological anxiety via a complex mediating pathway.

### Mediating effect of clarity of self-concept

Research shows that in the internet age, social media provides people with a more convenient way to access information about others. For young women who have less exposure to society and are still improving their self-awareness, passively receiving information about others' self-disclosure on the internet can interfere with their self-concept formation and be influenced by the behavior and thoughts of others. Specifically, the more young women use passive social network sites, the lower their clarity of self-concept. This study distinguishes between the use of social media and the use of passive social media, and the results show that the use of social networking sites (including active and passive use) has no significant effect on young women's individual. However, passive use of social networking sites has a significant impact on young women, and the intensity of passive use is negatively correlated with individuals' clarity of self-concept, which also implies that active use of social media has a positive impact on clarity of self-concept. Individuals with low levels of clarity of self-concept may become sensitive, insecure, and believe that they lack support and recognition from social networks, which can lead to negative emotions such as depression and loneliness and ultimately result in psychological anxiety among young women. Thus, the longer young women use social media, the lower their clarity of self-concept. During the use of social media, young women with lower clarity of self-concept are more likely to experience psychological anxiety.

### Mediating effect of social comparison on social media

This study examines the relationship between passive social media use and psychological anxiety in young women. The results show that young women's active social comparison behavior in social media can act as a chain mediator between their self-concept clarity and social media use, and between their passive social media use and psychological anxiety. Specifically, the more time young women spend using social media, the more they engage in social comparison behavior, the lower their clarity of self-concept, and the higher their psychological anxiety.

In social media, there are various groups of people who share information, making it easier for users to find groups similar to themselves. However, these groups also increase the frequency of social comparison behavior. In other words, young women are more likely to compare themselves to others while using social media, which can lead to a decline in their self-evaluation level, overly optimistic evaluations of others' information, and negative evaluations of themselves [58]. At this stage, individuals tend to ignore positive feedback and social support from others, leading to anxiety. Social comparison is an important factor contributing to the decline of self-evaluation, making individuals less confident about their abilities. Therefore, the study results indicate that the more young women use passive social media, the more often they engage in social



comparison behavior, and the more likely they are to experience psychological anxiety.

#### *Mediating effect of social contagion on social media*

In addition, passive social contagion can form a chain mediation with self-concept clarity, playing a chain mediation role in the relationship between passive use of social networking sites and psychological anxiety in women.

For many people, social media has become a daily part of staying in touch with friends, family, colleagues, and even strangers. Pew Research Center data shows that 64% of Facebook account users visit the website every day, and membership rates among teenagers and young people are high. University students often contact people with depression, anxiety or suicidal thoughts through social media, and are thus exposed to comments and information that can cause social contagion. Moreover, although many young women find comfort and social support on social media, when vulnerable individuals come into contact with people describing negative behaviors (such as extreme thoughts and suicidal behavior), social contagion can also occur. An empirical study from China shows that if individuals are in a group where the average negative emotion is higher, their negative emotions will gradually become closer to that of the group. For other groups, such as students and women who have a higher need for social interaction, their social frequency is also higher, and they are more likely to be influenced by the emotional state of the group [60]. According to current research, nearly 20% of young women stated that they felt more depressed or anxious when their friends posted information online about their personal anxiety or depression. When confronted with this information, the user tends to focus more on their similarities with others and imitate and reproduce the behavior to some extent, ultimately leading to an increase in their own negative behavior and internalizing these views, resulting in an unclear self-concept. Therefore, this study concludes that the longer young women use passive social media, the more they are influenced by the social environment, the lower their self-concept clarity, and the more likely they are to experience psychological anxiety. Passive social media use can indirectly positively predict psychological anxiety in women through the chain mediator of social influence and self-concept clarity.

#### *Shortcomings and prospects*

This study revealed the relationships between passive social media use, social comparison, social contagion, clarity of self-concept, and psychological anxiety among young women. Not only did it focus on the cognitive differences caused by jealousy and psychological anxiety induced by positive information comparison effects under social media use but also on the assimilation effects induced by negative information. However, this study still has the following shortcomings: firstly, the study only used a single questionnaire. Considering the subjective emotions and personality traits of the research subjects, in future research, on the one hand, the model can be improved by using them as moderating variables. On the other hand, network analysis techniques can be used to quantify comments,

published content, and other information in social media for increasing the scientific validity of research. Secondly, according to the characteristics of the related research, the causal relationships obtained in the study may not be entirely reliable. In future research, tracking experiments can be conducted to further verify the results. In addition, there may be multiple indirect paths between social media use and psychological anxiety. Therefore, it is necessary to focus on the complex experiences and mechanisms of young women in social media to improve the completeness of the models comprehensively.

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**Availability of Data and Materials:** Data can be obtained by contacting the authors.

**Ethics Approval:** This study was performed in line with the principles of the Declaration of Helsinki. The studies involving human participants were reviewed and approved by the Secretariat of Academic Committee at Hangzhou Dianzi University (No. 2024006). The participants provided their written informed consent to participate in this study.

**Conflicts of Interest:** The authors declare that they have no conflicts of interest to report regarding the present study.

#### References

1. Kemp S. We Are Social & Meltwater. Digital 2023 April global statshot report. Available from: <https://investor.fb.com/investor-news/press-release-details/2023/Meta-Reports-First-Quarter-2023-Results/default.aspx> [Accessed 2023].
2. Gosling SD, Mason W. Internet research in psychology. *Annu Rev Psychol.* 2015;66:877–902.
3. Wu Y, Wu L, Niu GF, Chen ZZ, Liu LZ. The effects of WeChat moments use on depression among college students: the roles of negative social comparison and self-concept clarity. *Psychol Dev Educ.* 2020;36(4):486–93 (In Chinese). doi:10.16187/j.cnki.issn1001-4918.2020.04.12.
4. Chang EC, Wan L, Li P, Guo Y, He J, Gu Y, et al. Loneliness and suicidal risk in young adults: does believing in a changeable future help minimize suicidal risk among the lonely? *J Psychol Interdiscip Appl.* 2017;151(5):453–63. doi:10.1080/00223980.2017.1314928.
5. Royal Society For Public Health. Status of mind: social media and young people's mental health and wellbeing. London: Royal Society for Public Health; 2017.

6. Hartas D. The social context of adolescent mental health and wellbeing: parents, friends and social media. *Res Pap Educ.* 2021;2019(1):1–19. doi:10.1080/02671522.2019.1697734.
7. Twenge JM, Joiner TE, Rogers ML, Martin GN. Increases in depressive symptoms, suicide-related outcomes, and suicide rates among U.S. adolescents after 2010 and links to increased new media screen time. *Clin Psychol Sci.* 2018;6(1):3–17. doi:10.1177/2167702617723376.
8. Kelly Y, Zilanawala A, Booker C, Sacker A. Social media use and adolescent mental health: findings from the UK millennium cohort study. *E Clin Med.* 2019. doi:10.1016/j.eclinm.2018.12.005.
9. Hunt MG, Marx R, Lipson C, Young J. No more FOMO: limiting social media decreases loneliness and depression. *J Soc Clin Psychol.* 2018;37:751–68. doi:10.1521/jscp.2018.37.10.751.
10. Brailovskaia J, Ströse F, Schillack H, Margraf J. Less Facebook use—more well-being and a healthier lifestyle? An experimental intervention study. *Comput Hum Behav.* 2020;108:106332. doi:10.1016/j.chb.2020.106332.
11. Hall JA, Johnson RM, Ross EM. Where does the time go? An experimental test of what social media displaces and displaced activities' associations with affective well-being and quality of day. SAGE Publications. 2019;21(3):674–92. doi:10.1177/1461444818804775.
12. Rana S, Kelleher M. The dangers of social media and young dental patients' body image. *Dent Update.* 2018;45(10):902–10. doi:10.12968/denu.2018.45.10.902.
13. Velde SVD, Bracke P, Levecque K. Gender differences in depression in 23 European countries. Cross-national variation in the gender gap in depression. *Soc Sci Med.* 2010;71(2):305–13. doi:10.1016/j.socscimed.2010.03.035.
14. Leupp K. Depression, work and family roles, and the gendered life course. *J Health Soc Behav.* 2017;58:422–41. doi:10.1177/002214651773730918.
15. Kosidou K, Dalman C, Lundberg M, Hallqvist J, Isacson G, Magnusson C. Socioeconomic status and risk of psychological distress and depression in the stockholm public health Cohort: a population-based study. *J Affect Disorders.* 2011;134(1–3):160–7. doi:10.1016/j.jad.2011.05.024.
16. Liu XF. Body in closure: the generation of negative body image of young women in the social media environment. *China Youth Stud.* 2023;(5):103–10 (In Chinese). doi:10.19633/j.cnki.11-2579/d.2023.0069.
17. Wang YF, Yu F. Distortion of women' s beauty by media mirroring-from “A4 waist” and “i6 legs”. *Young Rep.* 2017;(17):14–5 (In Chinese).
18. ITBEAR Tech News. Meta announces first quarter 2023 financial results, surpasses 3 billion global subscribers. Available from: <http://www.itbear.com.cn/html/2023-04/454374> [Accessed 2023].
19. Rachubińska K, Cybulska AM, Grochans E. The relationship between loneliness, depression, internet and social media addiction among young polish women. *Eur Rev Med Pharmacol Sci.* 2021;25(4):1982–9. doi:10.26355/eurrev\_202102\_25099.
20. National Alliance on Mental Illness. Mental health by the numbers. Available from: <https://www.nami.org/mhstats> [Accessed 2023].
21. Tandoc EC, Ferrucci P, Duffy M. Facebook use, envy, and depression among college students: is facebooking depressing? *Comput Hum Behav.* 2015;43:139–46. doi:10.1016/j.chb.2014.10.053.
22. Blease CR. Too many ‘friends’ too few ‘likes’? Evolutionary psychology and ‘Facebook depression’. *Rev Gen Psychol.* 2015;19(1):1–13. doi:10.1037/gpr0000030.
23. Thomas A. Self-concept, weight issues and body image in children and adolescents. *Psychol Adolesc.* 2003;88:17–29.
24. Campbell JD, Trapnell PD, Heine SJ, Katz IM, Lavallee LF, Lehman DR. Self-concept clarity: measurement, personality correlates, and cultural boundaries. *J Pers Soc Psychol.* 1996;70(1):141–56.
25. Qian Z. Conformity or contagion? A study on psychological health from the perspective of peer networks in classrooms. *Soc.* 2023;43(1):203–40.
26. Strack F, Martin LL, Stepper S. Inhibiting and facilitating conditions of the human smile: a nonobtrusive test of the facial feedback hypothesis. *J Pers Soc Psychol.* 1988;54(5):768–77. doi:10.1037/0022-3514.54.5.768.
27. Yao Y, Cheng C. Peer networks and adolescent mental health. *Youth Studies.* 2021;(5):24–34.
28. Li CN, Ma TY, Zhang H. Social comparison in social networks: research status and outlook. *J Beijing Normal Univ (Soc Sci Ed).* 2019;(6):22–31 (In Chinese).
29. Coyne SM, Mcdaniel BT, Stockdale LA. “Do you dare to compare?” Associations between maternal social comparisons on social networking sites and parenting, mental health, and romantic relationship out-comes. *Comput Hum Behav.* 2017;70:335–40.
30. Chou HTG, Edge N. ‘They are happier and having better lives than I am’: the impact of using Facebook on perceptions of others' lives. *Cyberpsychol Behav Soc Netw.* 2012;15(2):117–21. doi:10.1089/cyber.2011.0324.
31. Fardouly J, Diedrichs PC, Vartanian LR, Halliwell E. Social comparisons on social media: the impact of Facebook on young women's body image concerns and mood. *Body Image.* 2015;13:38–45. doi:10.1016/j.bodyim.2014.12.002.
32. Rozgonjuk D, Ryan T, Kuljus JK, Täht K, Scott GG. Social comparison orientation mediates the relationship between neuroticism and passive Facebook use. *Cyberpsychol.* 2019;13(1). doi:10.5817/CP2019-1-2.
33. Wallace L, James TL, Warkentin M. How do you feel about your friends? Understanding situational envy in online social networks. *Inf Manage.* 2016;54(5):669–82. doi:10.1016/j.im.2016.12.010.
34. Verduyn P, Ybarra O, Resibois M, Jonides J, Kross E. Do social network sites enhance or undermine subjective well-being? A critical review. *Soc Issues Policy Rev.* 2017;11:274–302. doi:10.1111/sipr.12033.
35. Burke M, Marlow C, Lento TM. Social network activity and social well-being. In: *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems, Atlanta, Georgia, USA, 2010*; pp. 1909–12. doi:10.1145/1753326.1753613.
36. Lerner RM, Lerner JV, Almerigi JB, Theokas C, Phelps E, Gestsdottir S, et al. Positive youth development, participation in community youth development programs, and community contributions of fifth-grade adolescents. *J Early Adolesc.* 2005;25(1):17–71. doi:10.1177/0272431604272461.
37. Cheng C, Kaili W. Regional gender equalization and mental health of adolescents in China. *J Xi' Jiaotong Univ (Soc Sci).* 2020;40(6):80–8 (In Chinese). doi:10.15896/j.xjtuskxb.202006008.
38. Aronson E. *Social Animals (12th Edition)*. Translated by Xing Zhanjun and Huang Liqing. Shanghai, China: East China Normal University Press; 2007.

39. Kramer ADI, Guillory JE, Hancock JT. Experimental evidence of massive-scale emotional contagion through social networks. *Psychol Cogn Sci*. 2014;111(24):8788–90. doi:10.1073/pnas.1320040111.
40. Hatfield E, Cacioppo JT, Rapson RL. Emotional contagion. *Curr Dir Psychol Sci*. 1993;2(3):96–100. doi:10.1111/1467-8721.ep10770953.
41. Hayat T, Lesser O, Samuelazran T. Gendered discourse patterns on online social networks: a social network analysis perspective. *Comput Hum Behav*. 2017;77:132–9.
42. Brechwald WA, Prinstein MJ. Beyond homophily: a decade of advances in understanding peer influence processes. *J Res Adolesc*. 2011;21(1):166–79. doi:10.1111/j.1532-7795.2010.00721.X.
43. Campbell JD. Self-esteem and clarity of the self-concept. *J Pers Soc Psychol*. 1990;59(3):538. doi:10.1037//0022-3514.59.3.538.
44. Constantino MJ, Wilson KR, Horowitz LM, Pinel EC. The direct and stress-buffering effects of self-organization on psychological adjustment. *J Soc Clin Psychol*. 2006;25(3):333–60. doi:10.1521/jscp.2006.25.3.333.
45. Valkenburg PM, Peter J. Online communication among adolescents: an integrated model of its attraction, opportunities, and risks. *J Adolesc Health Official Publication Soc Adolesc Med*. 2011;48(2):121–7. doi:10.1016/j.jadohealth.2010.08.020.
46. Israelashvili M, Kim T, Bukobza G. Adolescents' over-use of the cyber world-Internet addiction or identity exploration. *J Adolesc*. 2012;35(2):417–24.
47. Davis K. Young people's digital lives: the impact of interpersonal relationships and digital media use on adolescents' sense of identity. *Comput Hum Behav*. 2013;29(6):2281–93.
48. Tiggemann M, Slater A. Net girls: the internet, Facebook, and body image concern in adolescent girls. *Int J Eat Disorder*. 2013;46(6):630–3.
49. Vogel EA, Rose JP, Roberts LR, Eckles K. Social comparison, social media, and self-esteem. *Psychol Pop Media Cult*. 2014;3(4):206–22.
50. Butzer B, Kuiper NA. Relationships between the frequency of social comparisons and self-concept clarity, intolerance of uncertainty, anxiety, and depression. *Pers Individ Differ*. 2006;41(1):167–76. doi:10.1016/j.paid.2005.12.017.
51. Rodriguez Buritica JM, Eppinger B, Schuck NW, Heekeren HR, Li SC. Electrophysiological correlates of observational learning in children. *Dev Sci*. 2015;19:699. doi:10.1111/desc.12317.
52. Dhira Tahia A, Rahman Mahir A, Razzaque SA, Jeenat M. Validity and reliability of the generalized anxiety disorder-7 (GAD-7) among university students of Bangladesh. *PLoS One*. 2021;16(12):1–16.
53. Pickering E, Rebecca R, Schloss J. Anxiety patient reported outcome tool (GAD-7) use in complementary medicine teaching clinics throughout Australia. *Adv Integr Med*. 2021;2021(1):20–6. doi:10.1016/j.aimed.2020.02.006.
54. Silwal S, Dybdahl R, Chudal R, Sourander A, Lien L. Psychiatric symptoms experienced by adolescents in Nepal following the 2015 earthquake. *J Affect Disord*. 2018;234:239–46. doi:10.1016/j.jad.2018.03.002.
55. Wang MJ, Shi JQ, Wang L. Reliability test of the Chinese version of the social comparative tendency scale. *Chinese J Ment Health*. 2006;(5):302–305+316 (In Chinese).
56. Frison E, Eggermont S. Exploring the relationships between different types of Facebook use, perceived online social support, and adolescents depressed mood. *Soc Sci Comput Rev*. 2016;34(2):153–71. doi:10.1177/0894439314567449.
57. Liu Q, Niu G, Fan C, Zhou Z. Passive use of social network site and its relationships with self-esteem and self-concept clarity: a moderated mediation analysis. *Acta Psychol Sinica*. 2017;49(1):60–71.
58. Niu GF, Sun XJ, Zhou ZK, Tian Y, Liu QQ, Lian SL. The effect of adolescent social networking site use on self-concept clarity: the mediating role of social comparison. *Psychol Sci*. 2016;39(1):97–102. doi:10.16719/j.cnki.1671-6981.20160115.
59. Wen JJ. Reliability and validity of the life orientation test among college students. *Chinese J Ment Health*. 2012;26(4):305–9.
60. Li C, Lin W. Are negative emotion contagious?—based on perspective of class social network. *China Econ Q*. 2019;18:597–616 (In Chinese). doi:10.13821/J.CNKI.CEQ.2019.01.09.