

# Exploring The Relationship Between the Duration of Social Media Use and Online Social Anxiety in Chinese University Students

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**Abstract.** The ubiquity of social media use has given rise to the concern that it may cause online social anxiety (OSA). The study aims to ascertain whether the length of social media usage and OSA level are related to Chinese university students. This research designed a questionnaire based on SAS-SMU developed by Alkis et al. and adopted SPSS for data analysis. According to the results, all respondents use WeChat daily, and the majority of them rely significantly on social media. Additionally, it is found that those who use social media less frequently have lower OSA levels than those who use it more frequently. Therefore, it is concluded that the duration of social media use is positively associated with Chinese university students' OSA levels. This phenomenon can result from several reasons, such as excessive exposure to anxiety-provoking content online, indulgence in the virtual world of social media, and the gap between ideality and reality. College students' reliance on social media may lead to serious consequences like increased OSA levels, declined offline communication skills, failure of close relationships, and self-denial. This research also provides some practical suggestions such as limiting the length of social media use and conducting self-evaluation about OSA level regularly to prevent the negative effects of social media. The research provides insights into studies on OSA and inspirations for future research on this topic.

**Keywords:** Social media; online social anxiety (OSA); SAS-SMU; Chinese university students.

## 1. Introduction

The 21st century has witnessed the rapid development of Internet-based technologies that laid solid foundations for the occurrence of diverse social media platforms. Studies on social media have flourished as a result of the dramatic increase in the number of social media platforms and their active users over time.

However, with the surge of social media use, the concern that it may become a new stressor leading to negative emotions also rises [1]. One of the major worries is that social media use can cause social anxiety disorder (SAD), which is a common negative psychological state manifested as the fear of interacting with others or being scrutinized and evaluated by others in the context of social interaction [2]. It is suggested in the research done by Weisman et al. that SAD is associated with self-perceived low social status, low self-esteem, submissive behaviors, and lower feelings of intimacy in friendships and romantic relations [3]. As the distinctions between online and offline interactions continue to blur, it is proved that SAD can also be triggered by social media [4]. Although online and face-to-face SAD have much in common, they are still distinct in degree and form [5]. The degree of online social anxiety (OSA) is usually lower than that of social anxiety felt in face-to-face interactions [6]. In form, both online and face-to-face SAD involve interaction anxiety and fear of negative evaluation, but OSA is more connected with the interactive and niche characteristics of social media [7]. It is also worth noting that privacy concern is unique to OSA as it results from the anonymity and disorder of social networks [8].

Up to now, many researchers from different countries have investigated social media use and OSA. However, research on the relationship between social media use and OSA in China is still necessary because social media usage patterns and characteristics vary in China and other countries. Furthermore, even though research has shown a positive relationship between OSA and the duration of social media use among Indonesian teenagers, research carried out in China did not concentrate on

the relationship between the duration of social media usage and OSA severity [9]. Therefore, this research aims to examine the connection between the duration of social media use and the severity of OSA. The research's subjects are college students, who are a staple among social media users. Based on the research findings of Silmi et al., the following hypotheses are proposed:

H1: Chinese college students' OSA levels rise as the duration of social media use increases.

Ho: Chinese college students' OSA levels have nothing to do with the duration of social media use

## 2. Methodology

Researchers have developed and refined a variety of scales to measure social anxiety levels about various social contexts. Additionally, some scales are specifically designed to measure OSA levels. Among these, Social Anxiety for Social Media Users (SAS-SMU) developed by Alkis et al. has been proven to be an effective tool for measuring OSA.

This study's questionnaire is based on established scales from relevant studies, which helps to assure the validity of the research. Chinese researchers have examined the SAS-SMU's (Chinese version) suitability for Chinese university students and proved its high validity [10]. The original SAS-SMU scale measures four dimensions of respondents' OSA: interaction anxiety (IA), shared content anxiety (SCA), self-evaluation anxiety (SEA), and privacy concern anxiety (PCA) [11]. This categorization is also adopted in this study. Moreover, this research questionnaire includes some innovations. Firstly, considering the fact that the original scale was developed by Turkish researchers, the questionnaire used in this study involved some adaptations to make it more suitable for Chinese university students. Secondly, this questionnaire was also based on Chinese university students' common experiences of social media use. Before designing the questionnaire, a brief survey was conducted to investigate the common problems and anxiety some Chinese university students faced while using social media. The survey found that many students were concerned about the exposure of their virtual identity, which was not included in the original scale. Therefore, this questionnaire also involved questions such as "I feel worried if my friends have access to my social media accounts that I want to keep anonymous and private" and "I feel awkward if my friends recognize my virtual identity online".

There are three sections in this research questionnaire: questionnaire description, demographic information, and measurement scales. The goal of the study and the precautions taken to guarantee the authenticity of questionnaire responses and data are described in the first section. The second part aims to understand the basic profile of the research participants for descriptive statistical analysis. The third part consists of measurement scales designed on a 5-point, Likert-type basis. After the translation and adaptation of the original scale, the measurement scales in this research involve 5 questions about SCA, 5 questions about PCA, 5 questions about SEA, and 6 questions about IA.

The scale was posted on several different online platforms such as WeChat and school forums. The convenience sampling method and social media snowball sampling method were adopted while recruiting the participants. A total of 108 questionnaires were collected (46 males and 62 females). The sample consisted of 104 undergraduates, 3 postgraduates, and 1 doctoral student from different universities. Invalid questionnaires that took less than 1 minute to answer and regular answers were eliminated while processing the data, leaving 107 valid questionnaires. The final efficiency of the questionnaire is 99%.

## 3. Results

### 3.1. Descriptive Statistical Analysis

After data collection, arrangement, and processing, the results of the questionnaire are worth analyzing in depth. The questionnaire shows that all respondents use WeChat daily. Other popular social media platforms among Chinese university students include Weibo, RED, Bilibili, and

YouTube. It is found from the questionnaire results that most female respondents use Weibo and RED frequently while male respondents tend to use Bilibili and Zhihu more often.

Then, the average scores of each question are calculated. It is found that among the 21 questions, the third question "I feel anxious if others publicly judge my shared content" has the lowest average score of 2.31, and the question "I feel worried if my friends have access to my social media accounts that I want to keep anonymous and private" has the highest mean score of 3.55. Then, the average scores of questions in each of the four dimensions (SCA, PCA, SEA, IA) in the questionnaire are also calculated. Among the four dimensions evaluating OSA level, respondents have the lowest average score (2.43) in the SCA section and the highest mean score (3.14) in the PCA part. Hence, it can suggest that the respondents have relatively less anxiety about their shared content but are quite concerned with their online privacy.

After the statistical analysis of the questions in the research questionnaire, it is also essential to examine the features of the time respondents spend on social media. According to the amount of time spent on social media per day, the respondents are divided into three groups. Respondents who use social media for less than 1 hour belong to the category of "light social media users", those who spend between 1 and 5 hours daily on social media are categorized as "moderate social media users", and those who use social media for over 5 hours every day belong to the group of "heavy social media users". Among all respondents, 74 (69.2%) are moderate social media users, 29 (27.1%) are heavy users, and only 4 (3.7%) are light users. It is also worth noting that among all female respondents, 46 (74.2%) are moderate social media users, 14 (22.6%) are heavy users, and only 2 (3.2%) are light users. The percentages of moderate, heavy, and light users among male respondents are similar to those among female respondents, with the proportions being 65.2%, 30.5%, and 4.3% respectively. Hence, it is obvious that dependence on social media is quite ubiquitous among Chinese university students.

### 3.2. Correlation Analysis

After the categorization of respondents, each group's average scores on every question are calculated and analyzed through SPSS since all subjects were divided into three groups, two paired t-tests were conducted in this study respectively for light and moderate social media users, and moderate and heavy social media users.

Based on the results of the paired t-test, the discrepancies between the paired data turn out to be significant. As Table 1 illustrates, the average score (2.74) of light social media users is lower than that (2.75) of moderate social media users. The mean score of light social media users and that of moderate social media users shows a 0.05 level of significance ( $t=-2.682$ ,  $p=0.014^*$ ). Therefore, the first t-test indicates that light social media users have lower OSA levels than moderate social media users. The second paired t-test comparing the average score of moderate and heavy social media users demonstrates that the average score (2.75) of moderate social media users is lower than (2.76) of heavy users. According to the result shown in Table 1, the mean score of the moderate social media users and that of the heavy social media users shows a 0.01 level of significance ( $t=-3.627$ ,  $p=0.002^{**}$ ), suggesting that moderate social media users have lower OSA level than heavy social media users. Hence, it is obvious that light social media users have the lowest OSA levels and heavy social media users have the highest OSA levels. Given that a low p-value suggests less evidence in favor of the null hypothesis ( $H_0$ ), the results of the two paired t-tests proved that Chinese college students' OSA levels rise as the duration of social media use increases, supporting the alternative hypothesis ( $H_1$ ).

**Table 1.** The result of the Paired T-Tests of the Average Scores of Three Categories of Social Media Users

Items	Mean difference (Paired1- Paired2)	<i>t</i>	<i>p</i>
The average score of light social media users Paired Average score of medium social media users	-0.01	- 2.682	0.014*
The average score of medium social media users Paired Average score of heavy social media users	-0.01	- 3.627	0.002**

## 4. Reasons

The results of the SPSS analysis demonstrate that the duration of social media use positively correlates with Chinese university students' OSA levels. There are some interpretations of this phenomenon.

### 4.1. Excessive Exposure to Anxiety-Inducing Content

People are more likely to be exposed to content that could cause OSA the longer they use social media. According to a study, people who used social media for over two hours daily had a higher likelihood of experiencing anxiety than people who used it for less than 30 minutes every day [12]. Additionally, Rudatiningtyas discovered that people may unknowingly be exposed to unpleasant emotions if they use social media immoderately [13]. If a person only spends little time on social media every day, likely, he or she will likely not be exposed to anxiety-inducing content at all, and vice versa. Therefore, as time spent using social media increases, OSA levels will naturally rise.

### 4.2. The Neglect of Real-Life Experiences

Being addicted to social media can also make university students unaware of the changes in their real lives. Sometimes college students may find that they have missed some important events and information due to their addiction to social media, making them confused and anxious when they return to the real world from cyberspace. Overusing social media can also reduce the time college students communicate with others offline and decrease their ability for face-to-face interaction, leading to a declined quality of offline communications. As people are more engaged in online activities, they are inclined to ignore their surroundings, which may undermine close relationships that require face-to-face interactions to preserve. This decline in communication skills and failure of close relationships can contribute to increasing anxiety.

Moreover, indulgence in social media can cause procrastination and low efficiency in completing tasks, which makes college students anxious when deadlines for their work arrive. Addiction to social media may also make university students neglect the necessity to explore personal identity and values, leading to mental emptiness and self-denial which are important contributors to anxiety.

### 4.3. The Gap between Real Life and Virtual Illusions

On social media sites, people can always post their best images to receive compliments and likes from others, even people's original and true selves are not always reflected in the images that are displayed [14]. Since college students are at a stage where they desperately need the approval of others, they may pretend to have a good time on social media while they are actually suffering from miserable lives in reality. Hence, many students tend to indulge in the virtual world of social media to escape the burden of real life. As a result, when they have to face the chasm between the illusion on social media and reality, their OSA level will increase dramatically.

## 5. Impacts and Suggestions

### 5.1. Impacts

According to the research results, most respondents are moderate social media users. But there are still some heavy users. Social media is a double-edged sword. It is undeniable that social media has provided people with lots of benefits such as the convenience of establishing or maintaining interpersonal connections and access to academic or entertaining resources [15]. However, overusing social media can trigger OSA which is a negative interpersonal experience and is bound to influence an individual's psychology and behaviors. Psychologically, OSA can cause social media fatigue and give rise to negative emotions [16]. On some occasions, OSA can even trigger depression. Behaviorally, users with OSA are more inclined to show signs of social inactivity and usually have lower social capabilities [17]. Numerous research has also proved that the excessive use of social media can reduce students' academic achievement, damage their cognitive ability, and cause anxiety disorders [18].

### 5.2. Suggestions

As mentioned, excessive use of social media and OSA can impair people's overall health and development to a great extent. Therefore, this research also provides some suggestions to deal with the possible impacts.

#### 5.2.1 Limit social media usage time

This research demonstrates that social media usage time correlates with an increased degree of OSA. Hence, limiting the length of social media use is the root of the problem. Personally, Chinese university students should improve their self-control and the awareness that real life is much more important. They should spend more time exploring the world and improving themselves. For instance, they can replace the time they would have spent using social media by doing other meaningful activities such as reading, socializing, playing musical instruments, or exercising, etc. It is also beneficial for them to make daily plans and improve time management. They can set a maximum daily social media usage time and mark out urgent tasks, which can prevent them from feeling anxious about missing important information. From the social media platforms' perspective, they can offer users the choice to switch on anti-indulgence mode. Besides, they can also prevent overuse by sending alert notifications to users at regular intervals.

#### 5.2.2 Conduct self-evaluation about OSA level regularly

It is highly recommended that college students use mature questionnaires proven to be scientific and effective to self-evaluate their OSA levels regularly and then adjust their social media use. From this perspective, the questionnaire in this research may serve as a useful tool for self-evaluation. It measures OSA level from four dimensions, which can help respondents find out which aspect of OSA worries them most. For instance, this research found that questions belonging to the dimension of PCA have the highest average scores, which shows that respondents are most worried about their privacy on social media. Hence, students can gain knowledge about managing social networking privacy concerns and the way to modify their privacy settings to safeguard their online information [15]. Besides, social media platforms should carry out detailed privacy policies and effective measures to enhance platforms' privacy protections [19].

## 6. Conclusions

This study aims to explore the association between Chinese university students' duration of social media use and their OSA levels. The study discovered a positive relationship between the amount of time Chinese university students spend on social media and their OSA levels. It is also found that most of the students belong to the category of moderate social media users. However, heavy users

still take up a non-negligible proportion. According to the results, privacy anxiety is the respondents' biggest issue, and they are worried about their private accounts being recognized by acquaintances.

Further analysis of this phenomenon found that excessive exposure to anxiety-provoking content online, indulgence in the virtual world of social media, and the gap between ideality and reality can contribute to rising OSA levels. As a negative interpersonal experience, OSA can impair people's health both mentally and physically. Based on the research findings, this study proposes some solutions. For university students, they should try their best to avoid indulgence in social media by spending more time on self-enrichment. They can also improve their time management to refrain from addiction to social media. Moreover, it is also suggested that they carry out self-evaluations by using mature questionnaires regularly and adjust their social media usage habits according to the results. For social media platforms, they can provide users with anti-addiction mode and alert notifications to help limit the time people spend on social media. They should also shoulder the responsibility to make reasonable adaptations to their functions so that anxiety-inducing elements of social media can be discouraged, and positive factors leveraged.

The current research provides some insights into OSA, but there still exists room for improvements and further investigations. Future studies can broaden the coverage of samples and increase the diversity of respondents while distributing questionnaires. Besides, researchers who are interested in OSA can further discover whether gender, age and the kind of social media platforms can also influence OSA level.

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