A Research on the Relationship between the use of social media platforms and its impact on the mental well-being of high school students

Kailang Yue(Kyle) Xiaozhi

Xi(Kevin)

G12 AP Statistics

Beijing National Day School,

Beijing, Ch

1 Introduction

According to the 49th Statistical Report on the Development Status of the Internet in China released by China Internet Network Information Centre (CNNIC) on 25 February 2022, as of December 2021, the number of Internet users in China was 1.032 billion, of which the number of mobile phone users reached 1.029 billion, accounting for 99.7%. In terms of the length of time spent online, China's Internet users spend 28.5 hours online per week, with an average of about 4 hours online per day. With the popularity of mobile terminals and the development of mobile applications, as of December 2021, the scale of instant messaging users in China was as high as 1.007 billion, and the usage rate of instant messaging applications reached 97.5%. This indicates that mobile social applications represented by instant messaging have become an important part of mobile internet users' online life. At the same time, instant messaging, short video and live streaming, mobile payment and shopping, news and information APPs and applets with interactive attributes are the most commonly used applications in users' mobile phones. People are gradually moving from socialising under multiple constraints of space, time, scenarios and objects to a less restricted, broader and multi-object socialising. Social media has played an

important role in people's productive lives, helping them to change from "strong social relations" to a broader "pan-social" social network. The "pan-social" aspect lies in the wide range of interactions. In the online social media scenario, users can connect with anyone and create "circles". Ideally, one person is the node where the user can get to know everyone else. On the other hand, "pan-social" is also unfamiliar, which means that the depth of interaction between the two parties is superficial. With the development of advanced technologies such as big data and artificial intelligence, social media is no longer just about communication, but is increasingly embedded with a full range of interactive features, bringing 'interconnection' to all aspects of life. The QR-code based friend-adding function makes it easier for users to meet new friends or follow people of interest; location sharing based mobile taxi software makes it easy for people to have transportation wherever they are; pop-ups during video playback make it possible for people in different spaces and times to interact together in the same video scene; online courses and office software normalise online learning and office work; and live webcasting extends real-time interaction to all aspects of life. Online courses and office software have normalised online learning and working, and live streaming has extended real-time interaction to all aspects of society. Today, the media and society have become one, and the real-time interactive nature of social media has pushed social relationships to 'connect everything', and social networks and social models have been transformed as a result.

Social media has gradually broken the limitations of traditional interpersonal communication in space and time, enabling interaction between the virtual and the real, changing people's social and behavioural patterns, innovating the mode of information dissemination on online platforms and ensuring the coexistence of a plurality and singularity of communication symbols. Social media users have thus gained a two-way subjectivity with more initiative than before, "contacting" and "knowing" more people than ever before, gaining more social capital than ever before, and being able to see, share and even produce and acquire more information than ever before. The pervasive and widespread nature of social media makes it inevitable for people to connect and relate to others, whether actively or passively, if they are in a social network. But behind the expanding range of interactions is what appears to be a reflection of the user being active in the collective, but in fact a diminished sense of personal presence and experience. This often creates and amplifies anxiety in real life, which can lead to a number of physical and psychological problems. For example,

many users suffer from insomnia, fatigue, muscle tension, social stress, privacy anxiety, time pressure, information processing stress and even resistance to information prompts on social media platforms as they frequently send, receive and browse information.

What's more, the rapid development and popularity of social media applications such as WeChat and Weibo have constructed a far more extensive mediated living space for people than the real world. In using social media, users invest a lot of time and energy, receiving, sharing and posting more information than ever before, and reaching out to and meeting more people than ever before. Although social media has expanded users' online social capital, horizons and life circles, it has also to some extent brought undesirable consequences to users such as over-reliance on the internet, receiving too much information, social pressure, privacy leaks, conflicting opinions, excessive upward comparisons, and even led to negative emotions and psychology such as social media anxiety. University students use social networks more frequently and more intensively than other groups in their studies, life and social life, and also suffer from social media anxiety. Therefore, it is necessary to systematically examine the social media use and influence of university students, explore the relationship between their social media use behaviour and social media anxiety and its causes, and then find ways to solve the problem.

Based on theories related to social media, social capital and social comparison, this paper uses questionnaires and quantitative analysis to investigate the impact of social media use intensity on individual social media anxiety from the perspective of social media users' behaviour, in order to balance users' social media use behaviour and promote individual psychological health. It also provides a reference for optimising the construction and operation of social network media platforms and promoting the healthy development of the media environment.

2 Research Question

The group will be investigating the relationship between the use of social media platforms and its impact on the mental well-being of high school students. In the era of technology, our group observes that a majority of high school students actively engage with different social media platforms. We wonder if using these platforms correlates with poor mental well-being amongst high school students. Three primary

sources are relevant to assess the relationship between social media usage and mental well-being. These include the study on "The Impact of Social Media on Mental Well-Being among Adolescents", which examines the positive and negative effects that frequent social media use could have on adolescents, as well as "The Social Media Paradox: An Examination of Mental Health, Self- esteem, and Cyberbullying among Adolescents", which looks at the connection between online harassment and the mental health of teenagers. Lastly, "Teenage Social Media Use and its Impact on Mental Health: A Review of the Literature" provides a comprehensive understanding of the topic, citing various researches and data collected on a global scale.

3 Sampling and Experimental Design

1° Variables: Social media use (hours per day) and mental well-being (measured through an established self-report mental health scale).

2° Type of study: The study is an observational, cross-sectional study, as the group will analyze the data from a single point in time without manipulating any factors.

3° Data collection: Data will be collected through questionnaires designed by the group, which will measure the time spent on social media and the mental well-being of high school students.

4° Scope of inference: These data can be generalized to the population of high school students worldwide, taking into account cultural and regional variations.

4 Questionnaire

The questionnaire consists of 5 questions：

i. Do you regularly use social media platforms？

YES   NO

ii. How many social media outlets do you use regularly?

1-2 3-4   5-6   >6

iii. On average, how many hours per day do you spend on social media platforms?

＜4 h   about 4 h   about 6 h   about 8 h   > 8 h

iv. Please rate your overall mental well-being during the past month on a scale from 1-10, where 1 represents very poor and 10 represents excellent.

1-2   3-4   5-6   7-8   9-10

v.   What is your gender? (This information will only be used for research purposes and will not be shared with other parties.)

Remember that in order to reduce response bias, we would place personal questions such as gender at the end.

Man woman

Questionnaire on the impact of social media platforms on mental health

Thank you for taking the time out of your busy schedule to complete the survey 🥰
感谢您在百忙之中抽出宝贵时间完成调查🥰

* 1. Do you regularly use social media platforms?
您是否经常使用社交媒体平台?

○ YES

○ NO

* 2. How many social media outlets do you use regularly?
你经常使用的社交媒体有几个?

○ 1-2

Fig. 1 the questionnaire details

4 Questionnaire results

We received a total of 90 valid questionnaires. The specific data results are shown below.
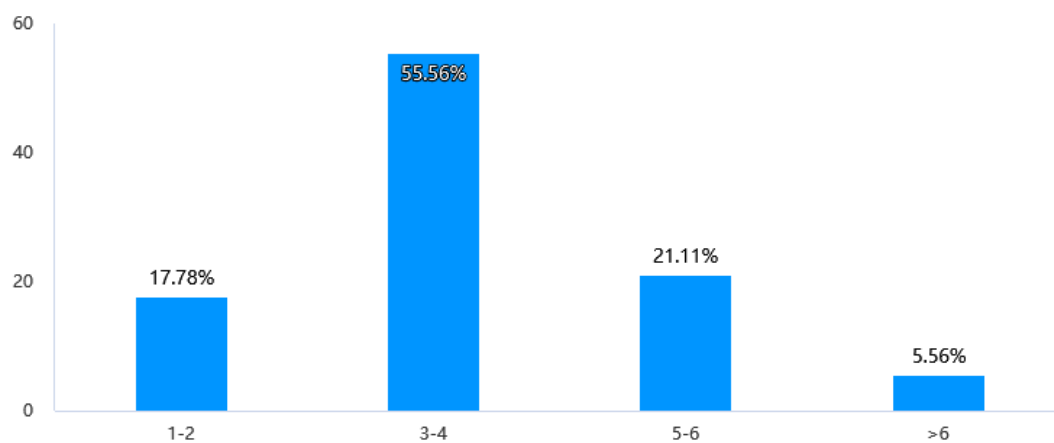
1　Do you regularly use social media platforms？

name	count		
YES	89		98.89%
NO	1		1.11%
total	90		
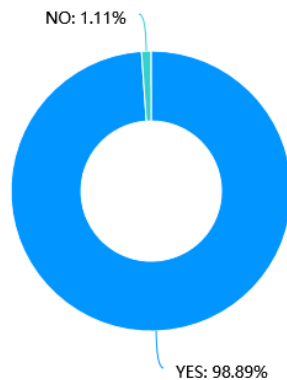
2　How many social media outlets do you use regularly?

name	count		
1-2	16		17.78%
3-4	50		55.56%
5-6	19		21.11%
>6	5		5.56%
total	90		

3 On average, how many hours per day do you spend on social media platforms?

| name	count		
1.少于四小时（＜4 h）	16		17.78%
2.四小时左右(about 4 h)	32		35.56%
3.六小时左右(about 6 h)	24		26.67%
4.八小时左右(about 8 h)	11		12.22%
5.八小时以上(> 8 h)	7		7.78%
total	90		
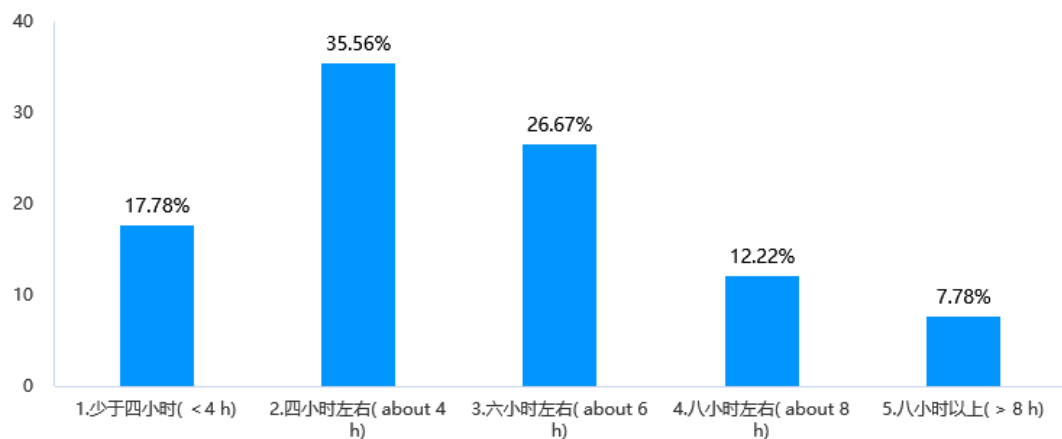
4 Please rate your overall mental well-being during the past month on a scale from 1-10, where 1 represents very poor and 10 represents excellent.

name	count		
1-2.	13		14.44%
3-4.	11		12.22%
5-6	20		22.22%
7-8	27		30%
9-10	19		21.11%
total	90		
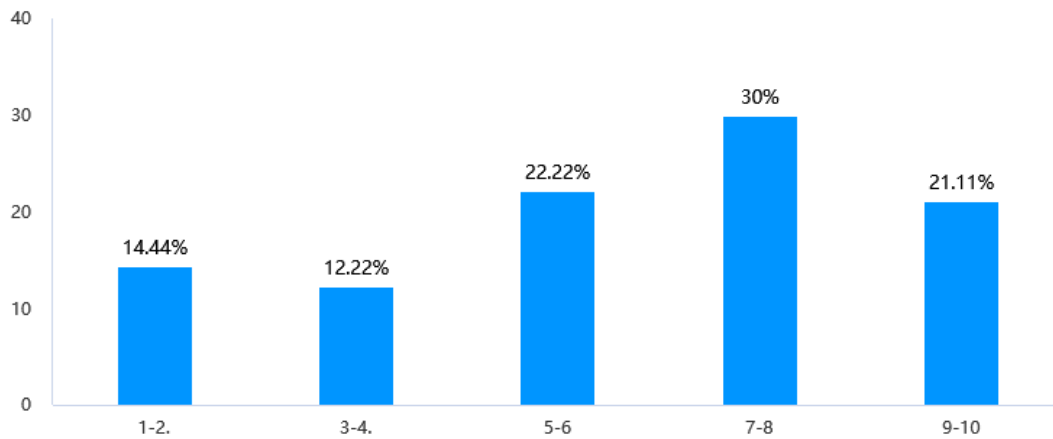
5   What is your gender? (This information will only be used for research purposes and will not be shared with other parties.)

选项	小计	比例
1.男(man)	46	51.11%
2.女(woman)	44	48.89%
total	90	

2.女(woman): 48.89%   1.男(man): 51.11%
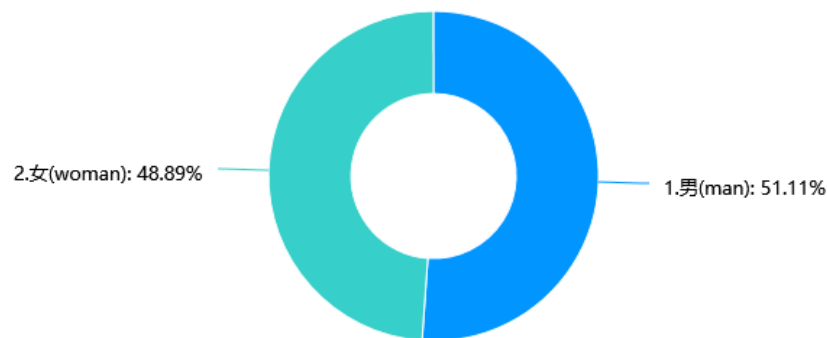
5 Data analysis

The results of our analysis of the data reveal that

1 For the high school students with the worst psychological status, almost the same amount of time was spent on various types of social interaction (in every time period)

2 For those in relatively poor psychological condition, the more time spent on social

interaction, showing a positive correlation

3 High school students in a better psychological state show less time spent on social interaction.
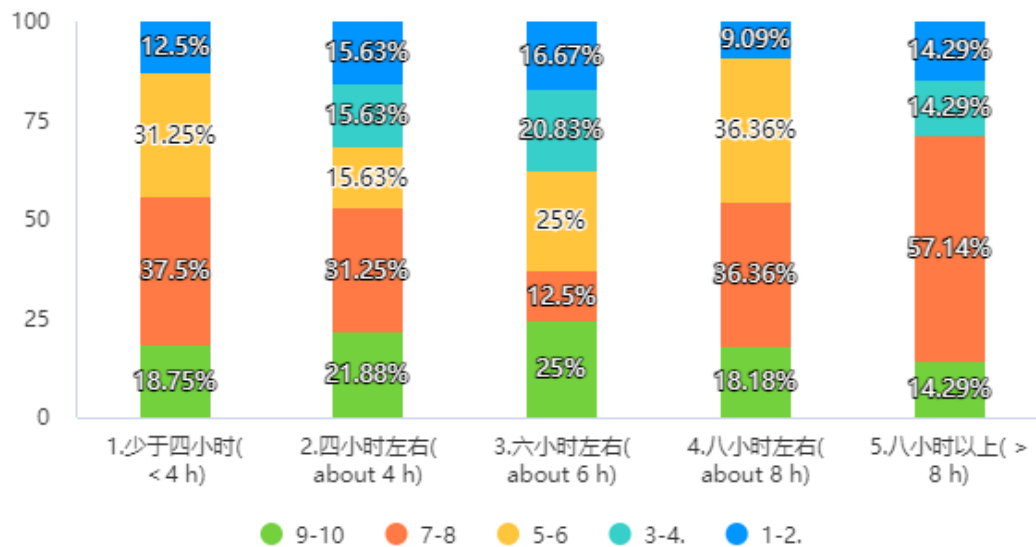
The details are shown in Fig. 2.

Fig. 2 data result 1

Similar to the results above, we analysed the results of How many social media outlets do you use regularly in relation to psychological conditions. It can be found that the more social media used for psychological status 5-6 (middle) is 5-6, or 42.11%. For the better psychological high school students, the number of social media is less. The percentage of the better mental health (7-8 /10) is 40%.
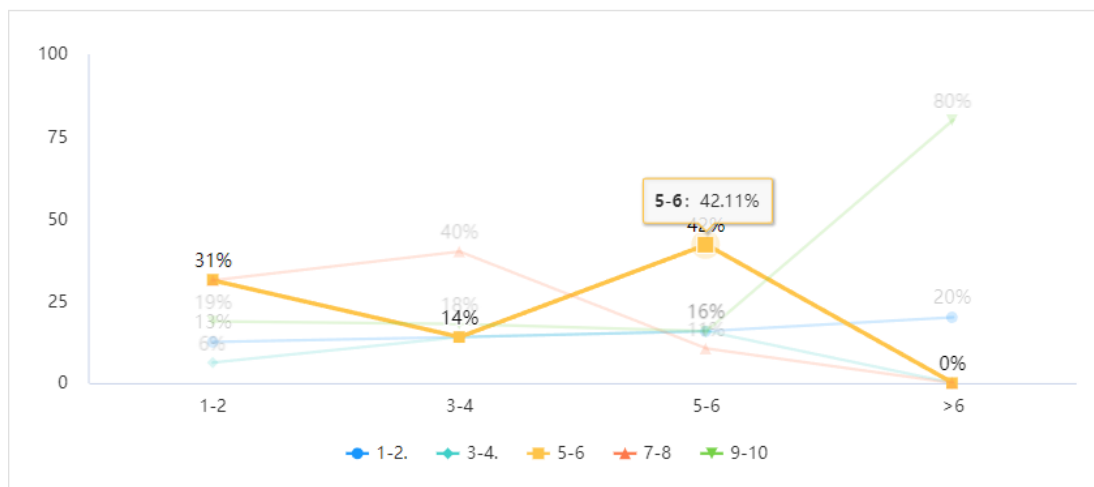
The details are shown in Fig. 3 & Fig. 4.
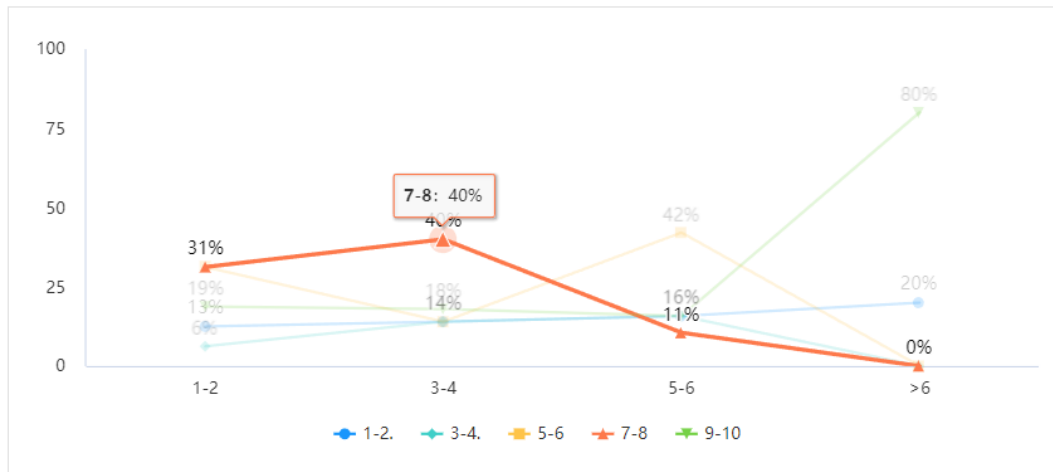

Fig. 3 data result 2

Fig. 4 data result 3

We also found that the regression coefficient was 4. We also find that the regression coefficient is -2. This is a negative value, indicating that there is a linear relationship. Furthermore, there is a significant correlation between the intensity of social media use and psychological status, and all of them are negatively correlated. It can also be said that there is a significant correlation between the intensity of social media use and social media anxiety, and that both are positively correlated.

The more intense the social media use (as reflected by the number and duration of social media), the worse the psychological condition.The analysis we use here was carried out in SPSS software.

Meanwhile, the results of the reliability and validity analyses in this section provided proof of data availability for the subsequent hypothesis testing. In the reliability tests, the Cronbach's α coefficients were all above 0.8, according to which the author concluded that the variables in this study were highly reliable and had good internal consistency and stability.

Finally, we also analysed the impact of gender. We can find that both men and women are in agreement regarding the above findings. This also reflects the validity of the questionnaire.

Fig. 5 data result overview

6 Conclusion

Based on a questionnaire survey, this study explores the research on the use of social media platforms and their impact on the psychological health of high school students. It provides a reference for high school students to establish a scientific view of media, optimise their social media usage behaviour and promote their psychological health, and also provides a reference for the improvement of social media platforms from the user's perspective.

This study designed the research questions and research hypotheses based on the offline questionnaire survey in the pre-testing phase, accordingly designed and implemented the online questionnaire survey, and conducted reliability checks and correlation analysis on the 90 questionnaire data collected, so as to answer the research questions and verify the hypothesis model.

High school students experience a certain degree of social media anxiety when using social media platforms, and the more intense the use of social media platforms and the more social media anxiety, the worse the mental health of high school students.

The results were consistent for both boys and girls.

7 Research Outlook

In contemporary society, social media has long been a part of people's lives. From its beginnings as a substitute for texting and emailing to communicate with others, social media has now even taken on a part of the role of work production. While technological advances have pushed people's lives in a good direction, they have also made people think more about social media itself. Behind the seemingly pleasant act of swiping through Twitter and friends, there are also some negative effects. The phenomenon of social media anxiety is not an isolated case, but an inevitable stage in the process of technological development. Therefore, in the future, research on social media anxiety can be deepened in more ways:

Firstly, the subject of research could be more comprehensive. The phenomenon of social media anxiety does not only exist among young people such as high school students, so there can be multiple options in terms of research objects and research directions, for example, the impact of the ageing of social media anxiety phenomenon on older groups under APP, the impact of the normalisation of WeChat office on workplace groups, and so on.

Secondly, the connotations of psychological issues can be explored in greater depth. Content sharing, self-evaluation and privacy are all part of social psychological problems, but there is more to it than that. In future research, social psychological problems can be further subdivided.

Thirdly, it is important to enrich theories and make use of multidisciplinary intersections to deepen research. The object of social media anxiety research is social media users, and social media users are inseparable from the nourishment of the general social environment, therefore, the study of social media anxiety involves multiple disciplines such as communication, sociology and psychology, and is inherently complex.

7. References

[1] Anderson, M., & Jiang, J. (2018). Teens, Social Media & Technology 2018. Pew Research Center.

Retrieved from https://www.pewinternet.org/2018/05/31/teens-social-media-technology-2018/

[2] Best, P., Manktelow, R., & Taylor, B. (2014). Online communication, social media and adolescent well-being: A systematic narrative review. Children and Youth Services Review, 41, 27- 36. doi:10.1016/j.childyouth.2014.03.001

[3] Fardouly, J., Diedrichs, P. C., Vartanian, L. R., & Halliwell, E. (2015). Social Comparisons on Social Media: the Impact of Facebook on Young Women's Body Image Concerns and Mood. Body Image, 13, 38-45. doi:10.1016/j.bodyim.2014.12.002

[4] Kowalski, R. M., Giumetti, G. W., Schroeder, A. N., & Lattanner, M. R. (2014). Bullying in the digital age: A critical review and meta-analysis of cyberbullying research among youth. Psychological Bulletin, 140(4), 1073-1137. doi:10.1037/a0035618