

WeChat Addiction Suppresses the Impact of Stressful Life Events on Life Satisfaction

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Abstract

The current study examined the influences of stressful life events and WeChat addiction on life satisfaction, and investigated the mediating role of WeChat addiction on the relationship between the two research variables. A total of 463 undergraduates completed self-reported scales for stressful life events, WeChat addiction, and life satisfaction. Structural equation modeling was used to analyze the questionnaire data. The results showed the suppressing effect of WeChat addiction on the negative impact of stressful life events on life satisfaction. Stressful life events affect life satisfaction both directly and indirectly. Stressful life events are positively associated with WeChat addiction, which exerts positive impact on life satisfaction. The contributions of the findings are discussed.

Keywords: stressful life events, WeChat addiction, life satisfaction, suppressing effect

Introduction

WECHAT, A PREVALENT social network site (SNS) in China and abroad, has attracted 846 million monthly active users in the third quarter of 2016.¹ According to the investigation of China Internet Network Information Center (CINIC), by the end of 2016, 79.6% of the Chinese netizens (731 million) considered WeChat the most commonly used mobile application.² The tendency observable in recent years includes a growing number of monthly WeChat active users¹ and an increasing amount of time spent on WeChat.³ Daily usage of SNSs via smart phones is positively associated with addictive tendencies.⁴ Both smart phones and WeChat being of high popularity among Chinese undergraduates, WeChat addiction and its negative effects need to receive substantial attention from researchers.⁵

Major life events have been found to be able to contribute to changing subjective well-being (SWB), and have very different effects on the two main components of SWB, namely, affective well-being and life satisfaction.⁶ The association between stressful life events and negative effects is moderated by emotional support⁷ and positive expectations,⁸ and mediated by humility⁹ and coping.¹⁰ The third variable effects are crucial for elucidating the relationship between stressful life events and deleterious outcome, and are informative in mitigating the negative relationship. Is there a

possibility for WeChat addiction to be a third variable related to both stressful life events and negative outcome?

Stressful life events, WeChat addiction, and life satisfaction

Perceived stress is negatively correlated to an individual's life satisfaction,¹¹ which reflects an individual's evaluation of his or her life as a whole.¹² Negative life events were adversely associated with life satisfaction.¹³ However, the strength of the associations varied with type of life events.¹⁴ In comparison to positive life events, negative life events are more conspicuous in predicting adolescents' life satisfaction.¹⁵ Exposure to stressful life events has been associated with reduced life satisfaction.⁷ In a sample of 155 Brazilian children aged between 7 and 16 years, a study has concluded that stressful life events contributed to predicting life satisfaction.¹⁶

Although pathological gambling is the only behavioral addiction in DSM-V, an increasing number of studies have been conducted on other potential behavioral addictions, such as cyberaddiction⁴ and smartphone addiction.¹⁷ Cyberaddiction is progressively common around the world and is positively associated with stress or mental health problems.⁴ Previous studies have concluded that stressful life events contribute to cyberaddiction, such as Internet addiction¹⁸ and online game addiction.¹⁹

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The use intensity of SNSs is found to be connected to mental status. Life satisfaction is positively affected by use intensity of WeChat⁵ and Facebook.²⁰ Blachnio, Przepiorka, and Pantic²¹ assigned the participants into three groups: ordinary, intensive, and addicted Facebook users, and concluded that Facebook addiction is positively related to life satisfaction in the first and second group, whereas in the third group, Facebook addiction is negatively related to life satisfaction.

To the best of our knowledge, no research has investigated the association between WeChat addiction and life satisfaction. WeChat, on which a great number of popular free games are available, is a prevalent SNS on the Internet. Addiction to WeChat shares some common characteristics with other cyberaddictions, such as immersion into virtual social network and isolation from real social ties. Based on the above literature, WeChat addiction is expected to serve as a bridge linking stressful life events to life satisfaction.

The current study

Although a lot of research emphasis has been placed on the effects of stressful life events on SWB, the mechanisms by which stressful life events affect life satisfaction in the context of WeChat remain to be explored. The aims of the present research were (1) to examine the associations among stressful life events, WeChat addiction, and life satisfaction in undergraduates, and (2) to investigate the mediatory role of WeChat addiction in the link between stressful life events and life satisfaction. We proposed two possible hypotheses. (1) Stressful life events would be negatively and significantly associated with life satisfaction. (2) WeChat addiction would significantly mediate the relationship between stressful life events and life satisfaction. Establishing these relationships is crucial for informing interventions that promote life satisfaction of WeChat users.

Methods

Participants

Four hundred sixty-three undergraduates from south mainland China volunteered to take part in the study. The sample is adequate for the current study according to Bentler and Chou²² and Nunnally's²³ suggestions on sample size. In the sample, 247 were females and 216 were males. Their ages ranged from 17 to 23 years ($M = 19.12$, $SD = 0.98$). The sample was slightly skewed toward freshmen and sophomores (34.3% freshman, 33.9% sophomore, 22.9% junior, 8.9% senior). All the participants were WeChat users.

Measures

Stressful life events. The Adolescent Self-rating Life Events Checklist (ASLEC) was used to measure subjective suffering from stressful life events experienced during the past year.²⁴ The ASLEC lists 26 stressful life events covering five types of life stress: interpersonal stress (e.g., being misunderstood, being treated coldly, loss of face in public), academic stress (e.g., failing an examination, having a heavy workload), being punished (e.g., being criticized, being fined), bereavement (e.g., death of parent or parents' divorce), and stress of adaptation (e.g., living far away from family). The participants were required to assess the influ-

ence of each life event. ASLEC yields scores ranging from 0 (not at all) to 5 (very much). The score of 0 indicates that the participant experienced no life stress during the past year. A higher score indicates that the life stress is more severe. Cronbach's alpha in this study was 0.882.

WeChat addiction. We developed the five-point Likert-type WeChat Addiction Scale (WAS) to gauge excessive involvement in WeChat activities. WAS comprises five items: "I feel despaired when I haven't logged onto WeChat for one day." "I would be depressed if WeChat shut down." "I am proud to tell others that I use WeChat." "I feel I am part of the WeChat community." "WeChat has become part of my daily routine." WAS yields scores that are indicative of the severity of WeChat addiction, higher scores indicating more severe addictions. Cronbach's alpha was 0.815.

Life satisfaction. The Satisfaction with Life Scale (SWLS) was used to measure the cognitive evaluation of life overall.²⁵ In accordance with Park, Kee and Valenzuela²⁶ and Valenzuela, Park and Kee,²⁰ we used the five-point Likert-type SWLS for assessing life satisfaction in this study. Cronbach's alpha was 0.820.

Procedure

Participants voluntarily completed a questionnaire survey consisting of the ASLEC, WAS, and SWLS in school during a specified class period lasting ~20 min. They did not write their names on the measures and were assured of confidentiality of their responses.

Data analysis

SPSS for Windows²⁷ was used for data analyses of descriptive statistics and correlations. Mplus 7.0 software²⁸ was adopted for structural equation modeling analyses of the relationships among stressful life events, WeChat addiction, and life satisfaction. Independent variables of the hypothesized model included stressful life events and WeChat addiction. The mediatory variable was WeChat addiction, and the outcome variable was life satisfaction. The maximum likelihood approach was used to estimate the parameters of the hypothesized model. The following four indices were adopted to measure the goodness-of-model fit: (1) chi-square statistics, (2) comparative fit index: adequate if ≥ 0.90 , (3) Tucker-Lewis index: adequate if ≥ 0.90 , and (4) root-mean-square error of approximation: good if ≤ 0.05 and acceptable if ≤ 0.08 .²⁹

Results

Descriptive analyses

Findings from preliminary analyses showed that skewness and kurtosis scores ranged from -0.35 to 1.35, and all variables were relatively normally distributed (skewness and kurtosis ≤ 2). The results of descriptive analyses showed few and mild stressful life events and moderate life satisfaction among Chinese undergraduates (Table 1). The mean value of WeChat addiction is 3.17 (Table 1). According to Young's suggestions on the cutoff scores for rating Internet addiction severity,³⁰ the score indicates a moderate level of WeChat addiction. There was a negative and significant

TABLE 1. DESCRIPTIVE STATISTICS AND PEARSON CORRELATIONS OF THE RESEARCH VARIABLES

Variables	M	SD	Minimum	Maximum	Skewness	Kurtosis	1	2	3
1. Stressful life events	0.88	0.60	0	5	1.14	1.35	1		
2. WeChat addiction	3.17	0.80	1	5	-0.31	0.13	0.111*	1	
3. Life satisfaction	2.94	0.76	1	5	-0.29	-0.35	-0.152**	0.101*	1

$N=463$; * $p<0.05$; ** $p<0.01$.

correlation between stressful life events and life satisfaction; WeChat addiction was significantly related to both stressful life events and life satisfaction (Table 1).

Hypotheses examination

Two structural equation models were developed to test the hypotheses. Model 1 (M1) was developed to test the total effect of stressful life events on life satisfaction. Results of M1 showed good model fit (Table 2). According to the results of M1, stressful life events significantly influenced life satisfaction ($\beta=-0.172$, $p=0.002$, Table 3). Model 2 (M2) tested the direct and indirect effects of stressful life events on life satisfaction. The indirect effects were examined by the bootstrapping method with 1000 samples. The goodness-of-fit of the M2 was satisfactory (Table 2). The path diagram of M2 is demonstrated in Figure 1.

As shown in Table 3, stressful life events exerted positive influence on WeChat addiction ($\beta=0.135$, $p=0.023$). WeChat addiction was positively related to life satisfaction ($\beta=0.167$, $p=0.009$). Stressful life events have direct and negative influence on WeChat addiction ($\beta=-0.194$, $p=0.005$). Finally, stressful life events accounted for 1.8% variance in WeChat addiction; stressful life events and WeChat addiction accounted for 5.7% variance in life satisfaction.

According to Rucker, Preacher, Tormala and Petty³¹ and Wen and Ye,³² our results showed that WeChat addiction mediates the association between stressful life events and life satisfaction ($\beta=0.023$, $p<0.05$). Because the sign of the indirect effect was opposite to that of the total effect, WeChat addiction suppressed the total effect by its omission. The mediation effect of WeChat addiction in the total effect was 11.62%.

Discussion

The two hypotheses were confirmed: the negative association between stressful life events and life satisfaction, and the association being mediated by WeChat addiction. These findings provide a new perspective for exploring the psy-

chosocial mechanisms by which life events affect individual happiness.

First, stressful life events are inversely connected to life satisfaction, although indirectly, revealing the importance of life experience on life satisfaction. Our finding is consistent with those of previous studies that have claimed that the experience of stressful or negative life events is associated with reduced levels of life satisfaction.^{7,13,33} It supports the bottom-up theory,¹² which hypothesizes that life satisfaction is largely due to the experience of life events. The descriptive analyses showed that Chinese undergraduates suffer mild life stress ($M=0.88$). It is reasonable that stressful life events only accounted for 1.8% variance in WeChat addiction.

Second, stressful life events are positively associated with WeChat addiction. Chinese undergraduates experience life stressors and negative feeling, and use WeChat to anesthetize their emotions. WeChat addiction is a way to relieve negative emotions and experiences caused by stressful life events, concurring with the conclusion that the Internet can provide an escape for the user from stress accumulated in an offline environment.¹⁸ The descriptive analyses indicated that Chinese undergraduates experience few stressful life events ($M=0.88$). It seems quite logical that they report moderate WeChat addiction ($M=3.17$). Previous studies have asserted that coping style significantly exerts third variable effect on the influence of stressful life events on Internet addiction^{34,35} and online game addiction.¹⁹ So, it is recommended that future studies examine the mediating and/or moderating effect of coping style on the association between stressful life events and WeChat addiction.

Third, our results revealed the positive impact of WeChat addiction on life satisfaction, a finding roughly similar to that there is no negative correlation between smart mobile phone addiction and life satisfaction.³⁶ The scores of the Chinese undergraduates' WeChat addiction are moderate ($M=3.17$). They seem to be in the stage of WeChat euphoria²¹ when they rationally use WeChat as a tool to enhance friendship and to get useful information,⁵ and get a feeling of well-being from the alleviation of stress. Cyber communication is

TABLE 2. MODEL FIT

Model	Fit indices				
	χ^2	df	CFI	TLI	RMSEA
M1	76.192***	34	0.970	0.961	0.052
M2	163.331***	87	0.965	0.958	0.044

$N=463$; *** $p<0.01$.

CFI, comparative fit index; TLI, Tucker-Lewis index; RMSEA, root-mean-square error of approximation; M1, model 1; M2, model 2.

TABLE 3. STANDARDIZED ESTIMATES FROM THE STRUCTURAL MODELS

Model	Effects	Path	Coefficient
M1	Total effects	SLE \rightarrow LS	-0.172**
M2	Direct effects	SLE \rightarrow WA	0.135*
		WA \rightarrow LS	0.167**
		SLE \rightarrow LS	-0.194**
	Mediating effects	SLE \rightarrow WA \rightarrow LS	0.023*

* $p<0.05$; ** $p<0.01$.

SLE, stressful life events; LS, life satisfaction; WA, WeChat addiction.

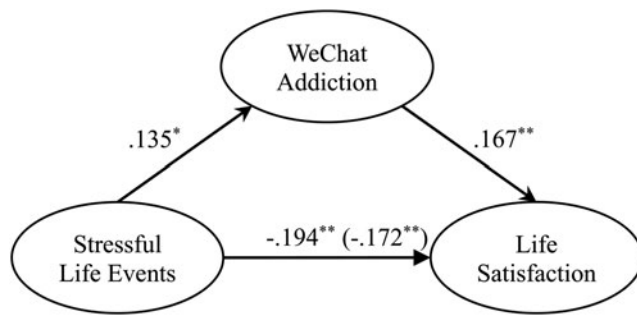


FIG. 1. The path diagram of the structural model 2. * $p < 0.05$; ** $p < 0.01$.

less anxiety provoking than face-to-face communication for users living in challenging social situations.⁴ The higher level of life satisfaction may be explained by the fact that a great dose of dopamine is released while using WeChat. Dopamine, as a neurotransmitter, plays an important role in enhancing feelings of enjoyment.³⁷ If they are more and more involved in WeChat and develop an extreme WeChat addiction, the state of euphoria will become a habit and dopamine tolerance will increase, so their life satisfaction will be lower in the future, just as the inverse link between Facebook addiction and life satisfaction.^{21,38} Our results imply that moderate WeChat addiction is beneficial for life satisfaction.

The fourth contribution is to confirm the significance of considering WeChat addiction's mediational role in understanding the association between stressful life events and life satisfaction. The present study illustrated the importance of including both environmental and intrapersonal factors in understanding undergraduates' life satisfaction. The suppressing effect of WeChat addiction on the total effect (11.62%) indicates that moderate WeChat addiction can buffer the negative influence of stressful life events on life satisfaction. This finding is in line with the compensatory Internet use theory,³⁹ which postulates that life adversities can motivate individuals to seek psychological comfort through cyberspace. Our findings support the act of launching WeChat public libraries.⁴⁰ However, college administrative sections should pay attention to the emergence of extreme WeChat addiction.

This study only presents preliminary conclusions on the associations among stressful life events, WeChat addiction, and life satisfaction in undergraduates. Certain limitations of the present study have to be acknowledged. First, the sample was drawn from south mainland China. Thus, the generalizability of the findings remains tentative, pending further studies. Second, the study is cross-sectional in nature, and more information should be obtained from longitudinal investigations to further promote the understanding of the causality among stressful life events, WeChat addiction, and life satisfaction. Third, there are no cutoff scores for rating WeChat addiction severity. For future research, it would be helpful to determine the severity cutoff scores of WeChat addiction. Furthermore, the link between WeChat addiction and dopamine is only a deduction. Future research on the causality of WeChat addiction would benefit from brain imaging studies in addicts and in-depth investigation of the pathogenesis of WeChat addiction.

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No competing financial interests exist.

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