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The Status of and Relationship between Loneliness and Internet Addiction Among College Students

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Abstract

Objective To explore the status of college students' Internet addiction and loneliness, and explore the impact of loneliness on Internet addiction. **Methods** 1229 undergraduates are selected by stratified random sampling method, and they are investigated with the Young Internet Addiction Impact Index (IAII) and the Revised UCLALS3 Loneliness Scale-Version 3 (UCLALS3). **Results:** (1) The scores of IAII and UCLALS3 of this group are (50.66 ± 12.83) and (43.63 ± 8.16) respectively. (2) The incidence of Internet addiction in this group is 75.25%; The incidences of low, medium and high loneliness are 22.17%, 33.64% and 44.19%, respectively; ⑶There are significant differences in the incidences of Internet addiction and loneliness between boys and girls at all levels (χ^2=31.492, 43.256; All P<. 001). ⑷The result of linear regression analysis shows that the total score of UCLALS3 positively predicts the total score of ITII (β=.368, P<.001). **Conclusion** Internet addiction is a common behavior problem of college students, and loneliness may be one of the main influencing factors of college students' Internet addiction.

Key words: Internet Addiction, Loneliness, Influencing Factors, Linear Regression Analysis

1. Introduction

Loneliness is a painful experience that an individual undergoes when his/her actual social relation is obviously inferior to the expected status, and meanwhile, he/she feels not accepted due to isolation from others or lack of contact [1-2]. The young college students experience high-level loneliness universally. Almost every college student feels lonely, among them, the rate of medium or serious loneliness is 61.4~95.5% [3-6]. The loneliness could predict forwards the psychological and behavioral problems of college students such as smartphone addiction [3,7-8], distress in romantic relationships and sex [5], depression [9], and suicidal ideation [6]; and predict negatively mental health status [10] and subjective well-being [11]; loneliness could reduce sleep quality [8,12-13], and increase morbidity and mortality rates of multiple diseases [12-13].

Network technology has broadened people's horizons, facilitated people's lives, and made great contributions to the progress of society, but there are also drawbacks, among which the harm caused by Internet addiction is huge. Internet Addiction Disorder (IAD) refers to the phenomenon of obvious social and psychological damage caused by excessive use of the Internet [14]. College students have become a high-incidence group of Internet addiction [15]. Internet addiction can cause extensive physical and psychological harm to individuals, such as affecting individuals' sleep quality [16], causing cognitive decline [17], producing emotional disorders such as depression and anxiety [18], and even social dysfunction [19]. There are many reasons for Internet addiction, one of which is bad mood. The ACE model established by Young points out that the three characteristics of the network itself, namely, concealment, convenience, and remoteness from reality, will lead to excessive Internet access. Concealment refers to the fact that individuals can hide their names in the network and freely vent their emotions without feeling uneasy; Convenience means that individuals can meet their various needs through the network without leaving home; Being away from reality means that when encountering various difficulties in life, individuals can seek comfort and stimulation through the Internet [14]. It can be seen that the root cause of Internet addiction is that the Internet can meet all kinds of needs, even those that addicts cannot meet in the real world, such as emotional needs. That is to say, addicts have

great emotional deficiency in the real world. So, do the Internet addicts have a higher loneliness than general population? How does loneliness affect Internet addiction? This paper aims to answer these questions.

2. Objects and Methods

2.1 Objects

The stratified random sampling method is adopted to select a total of 1300 undergraduates from 7 universities including Guangdong Pharmaceutical University, Jinan University, Guangzhou Academy of Fine Arts, Guangdong University of Technology, Xinghai Conservatory of Music, Guangdong Institute of Physical Education and Guangdong Institute of Finance. 1299 valid questionnaires are collected, and the effective rate is 94.5%. There are 717 boys and 582 girls; 1002 only-children and 297 non-only-children; 741 urban students and 558 rural students; 343 freshmen, 310 sophomores, 269 juniors, 251 seniors, and 126 fifth-year students. The age ranged from 17 to 24 years old, with an average of (19.54 ± 1.38) years old.

2.2 Tools

2.2.1 Revised UCLA Loneliness Scale-Version 3 (UCLALS3) [20]

Compiled by Russell, et al. (1978) **[20]** and revised by Liu Ping [21] into the Chinese version. UCLALS3 contains 20 items, with a single dimension. The Likert 4-point scoring method is adopted to score from 1 to 4 points corresponding to “never” to “always”. The higher the total score, the serious the loneliness. Those with total score >44 are highly lonely, <28 are lowly lonely, while 28≤ total score ≤44 are medium lonely. In this study, the Cronbach’s a coefficient of the scale is 0.889.

2.2.2 Internet Addiction Impairment Index (IAII)[22]

Compiled by Young KS (1999)[22], University of Pittsburgh, USA. A total of 20 items are divided into 4 dimensions, namely tolerance (TO), compulsion and withdrawal reaction (CW), time management (TM), interpersonal and health problems (IH). The Likert 5-point scoring method is used to score from 1 to 5 points corresponding to “almost not” to “always”. The higher the total score, the higher the degree of addiction. 0-30 points are non-Internet addicts, 3l-49 points are mild Internet addicts or Internet addicts, 50-79 points are moderate Internet addicts, 80-100 points are serious or severe Internet addicts. In this study, the Cronbach's a coefficient of the total table is 0.873, and the Cronbach's a coefficients of each dimension is 0.751-0.822.

2.3 Data Processing

SPSS 20.0 is used for statistical analysis. Descriptive statistics is used to calculated the mean scores and standard deviations; Pearson product difference correlation is used to explore the correlation among variables; Linear regression is used to analyze the influences of loneliness on Internet addiction.

3. Results

3.1 Common Method Deviation Test

Since the data are all from the questionnaire (self-report of the subjects), there may be common bias. Harman single factor test [23] is used to test the common method deviation. The results showed that there are 17 factors with eigenvalues greater than 1, and the first factor explains 24.34% of the total variation, which is less than the critical criterion of 40%. Therefore, the influence of common method bias on the results of this study can be excluded.

3.2 The level of college students' Internet addiction and loneliness

The IAII total score is (50.66 ± 12.83), and the UCLALS3 total score is (43.63 ± 8.16).

3.3 Incidence of Internet addiction among college students

3.3.1 Overall incidences

984 students in this group score more than 40 in IAII, accounting for 75.25% of the sample. Among them, 869 are mild Internet addicts, accounting for 66.90% of the sample; 79 are moderate Internet addicts, accounting for 6.08% of the sample; 36 are severe Internet addicts, accounting for 2.77% of the sample.

3.3.2 Comparison of the incidences of Internet addiction at various levels between boys and girls

It can be seen from Table 1 that there are significant differences in the incidences of Internet addiction at various level between boys and girls (χ^2 =31.492, *P* <.001).

Table 1 Differences in the incidences of Internet addiction at various levels between boys and girls *n (%)*

Addition level \ Gender	Boys	Girls	χ^2	*P*
Non-internet addiction (NonA)	133 (18.55)	182 (31.27)	31.492	<.001
Mild internet addiction (MiA)	508 (70.85)	361 (62.03)		
Moderate internet addiction (MoA)	50 (6.97)	29 (4.98)		
Severe internet addiction (SvA)	26 (3.63)	10 (1.72)		

3.3.3 Comparison of Incidences of Internet addiction among 5 grades

It can be seen from Table 2 that there are no statistical differences in the incidences of Internet addiction at various levels among 5 grades (χ^2=7.712, *P*=.807).

Table 2 Differences in the incidences of Internet addiction at various levels among 5 grades *n*(%)

Addition level \ Grade	Freshmen	Sophomore	Junior	Senior	Fifth-year students	χ^2	*P*

NonA	82 (23.91)	78 (25.18)	68 (25.32)	60 (23.92)	27 (21.43)	7.712	.807
MiA	224 (65.29)	204 (65.81)	181 (67.29)	175 (69.69)	85 (67.51)		
MoA	23 (6.71)	20 (6.49)	14 (5.21)	13 (5.22)	9 (7.08)		
SvA	14 (4.09)	8 (2.52)	6 (2.18)	3 (1.17)	5 (3.98)		

3.4 The incidences of loneliness among college students

2.4.1 Overall incidences

There are 288, 437, and 574 students with low, medium, and high loneliness, accounting for 22.17%, 33.64%, and 44.19% of the sample respectively.

3.4.2 Comparison of the incidences of loneliness between boys and girls

It can be seen from Table 3 that there are significant differences in the incidences of loneliness at various levels between boys and girls (χ^2= 43.256, *P*<.001).

Table 3 Differences in the incidences of loneliness at various levels between boys and girls *n*(%)

Gender / Loneliness level	Boys	Girls	χ^2	*P*
Mild loneliness	246 (34.29)	105 (18.02)	43.256	<.001
Moderate loneliness	183 (25.50)	191 (32.79)		
Severe loneliness	288 (40.21）	286 (49.19)		

2.4.3 Comparison of the incidences of loneliness in various grades

It can be seen from Table 4 that there is no statistical difference in the incidences of loneliness at different levels in various grades（χ^2=6.070, *P*=.639).

Table 4 Differences in the incidences of loneliness at different levels in various grades n (%)

Grade / Loneliness level	Freshmen	Sophomore	Junior	Senior	Fifth-year	χ^2	*P*
Mild loneliness	88 (25.71)	86 (27.69)	67 (24.92)	74 (29.49)	33 (26.18)	6.070	.639
Moderate loneliness	112 (32.72)	93 (30.30)	102 (37.89)	85 (33.91)	44 (34.92)		
Severe loneliness	143 (41.57)	131 (72.31)	100 (37.19)	92(36.60)	49 (38.90)		

2.5 Correlation analysis of Internet addiction and loneliness among college students

It can be seen from Table 5 that the total score of IAII and all dimensions have significant positive correlation with the total score of UCLALS3 (r=. 368 to . 668, all P <. 001).

Table 5 Correlation Analysis of IAII and UCLALS33 scores

Dimension	M±SD	1	2	3	4	5	6
1. TO	11.23±3.09						
2. CW	12.76±3.28	.648**					
3. TM	12.23±3.54	.764**	.827**				
4. IH	10.43±4.19	.584**	.619**	.465**			
5.IAII	46.66±12.83	.770**	.725**	.663**	.627**		
6.UCLALS3	43.63±8.16	.564**	.453**	.157**	.688**	.368**	

2.6 Linear regression analysis of the predictive effect of UCLALS3 score on IAII total score

Taking the total score of IAII as the dependent variable and the total score of UCLALS3 as the independent variable, the linear regression is carried out within the 95% confidence interval, and the result is shown in Table 6.

It can be seen from Table 6 that UCLALS3 total score positively predicts the total score of IAII (β=. 368, *P* <.001).

Table 6 Linear regression analysis of the impact of UCLALS3 total score on IAII total score.

Dependent	Independent	B	SE	β	*t*	*P*	R^2	R_{adj}^2

variable	variable						
IAII	UCLALS3	.186	.023	.368	7.099	<.001	.179	.175

4. Discussion

The total scores of IAII and UCLALS3 of this group are (46.66 ± 12.83) and (43.63 ± 8.16), respectively. 75.25% of college students have the tendency of Internet addiction. The IAII total score, UCLALS3 total score, the incidence of Internet addiction, and the incidences of moderate and severe loneliness are significantly higher than the results of previous studies [2, 4, 9, 24-26]. It suggests that college students' behavior problems such as Internet addiction and loneliness are becoming more and more serious with the passing of time.

This study finds that the incidence and severity of Internet addiction of boys are higher than those of girls, while the level of loneliness and the incidence of moderate and severe loneliness of girls are higher than those of boys, consistent with the results of previous studies [2, 4, 9, 24-26], suggesting that Internet addiction and loneliness are common psychological and behavioral problems for boys and girls, while boys and girls have different susceptibility to these two problems.

This study finds that there is no significant grade difference in Internet addiction and loneliness at all levels, which is consistent with the results of previous studies [2, 4, 9, 24-26]. It is suggested that the university stage is not the key period for the development of Internet addiction and loneliness.

This study finds that loneliness is a positive independent predictor of Internet addiction. The reason may be driven by individual needs. Self-determination theory points out that [27-28], the lack of psychological needs will increase the individual's fear of the lack of needed objects. Individuals with high loneliness have a lack of social needs, and they also lack information and resources from the real social environment, which makes them afraid of the lack of interpersonal relationships, and also worry about missing some valuable information and resources [29], and then rely on online media to meet social needs, obtain relevant information and resources, which is more likely to lead to Internet addiction.

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