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## Prevalence of Internet addiction and its association with social support and other related factors among adolescents in China



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#### ABSTRACT

A cross-sectional study design was applied amongst a random sample (n = 10158) of Chinese adolescents. Self-completed questionnaires, including demographic characteristics, Internet use situation, Youth Internet Addiction Test, Youth Social Support Rating Scale and Zung Self-rating Depression Scale were utilized to examine the study objectives. Among the study population, the prevalence rate of Internet addiction was 10.4%, with 1038 (10.2%) moderately and 21 (0.2%) severely addicted to the Internet. Results from the multivariate logistic regression analyses suggested that a variety of related factors have significant effects on Internet addiction (parental control, per capita annual household income, academic performance, the access to Internet, online activities). The correlation coefficients showed that Internet addiction was negatively correlated with social support and positively associated with depression. Social support had a significant negative predictive effect on Internet addiction. The mediating effect of depression between social support and Internet addiction was remarkable.

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#### Introduction

The use of the Internet has allowed us the convenience of accessing anything at our fingertips. In adolescents especially, the Internet has become a readily accessible means for entertainment, communication, education and information retrieval (Kormas, Critselis, Janikian, Kafetzis, & Tsitsika, 2011; Wang et al., 2011). Nonetheless, the negative impact of addiction has pervasively affected day to day function (Anderson, 2001); school performance and relationships with their parents (Tsai &

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Lin. 2001): Worst of all, extensive Internet use may generate adverse effects on the psychosocial development of adolescents, which may result in many of them experiencing mental health problems including depression, loneliness, low selfesteem, and anxiety (Dong & Wang, 2013; Young & Rogers, 1998). An increasing number of studies have revealed that addictive online behaviors are very similar to alcoholism, substance addiction and pathological gambling (Ha et al., 2006; Ng & Wiemer-Hastings, 2005; Petry, 2006). With the increased popularity of the Internet, Internet addiction has emerged as a social and mental health issue among youths. Although official diagnostic criteria do not currently exist, Young defined Internet addiction as the excessive, obsessive-compulsive, uncontrollable, tolerance-causing use of the Internet, which also causes significant distress and impairments in daily functioning (Young, 1998, 1999). Internet addiction has the following types: cyber-sexual addiction, cyber-relational addiction, game addiction, information overload, and net compulsions, In recent years, Internet addiction has been reported in both Western and Eastern societies among adult and adolescent groups (Bakken, Wenzel, Gotestam, Johansson, & Oren, 2009; Milani, Osualdella, & Di Blasio, 2009; Siomos, Dafouli, Braimiotis, Mouzas, & Angelopoulos, 2008; Yen, Yen, Chen, Tang, & Ko, 2009). Several studies have also examined the prevalence of Internet addiction during the past few years (Cao & Su, 2007; Park, Kim, & Cho, 2008; Siomos et al., 2008; Villella et al., 2011). Although data from those studies reported inconsistent occurrence rate of Internet addiction, there is no doubt that Internet addiction has emerged as a rapidly growing problem in young people that has attracted world-wide attention. Adolescence is a critical period for addiction vulnerability (Pallanti, Bernardi, & Ouercioli, 2006), when compared to adults, adolescents are more likely to adopt patterns of excessive Internet use (Tsitsika et al., 2009). Generally speaking, Internet addiction is common among adolescents, and related factors are found at both home and school. Close attention should be paid by both parents and teachers to these factors. Effective measures are needed to prevent the spread of this problem.

Social support is a commonly identified risk factor in higher and lower income settings, although its impact is likely to vary between cultures and varying family/social contexts (Cankorur, Abas, Berksun, & Stewart, 2015). Lacking support from parents, friends, teachers, those adolescents seek social support via interacting with others on the Internet (Tichon & Shapiro, 2003). A cohort study conducted by Chen Xin on the relationship between Internet addiction and social support revealed that the lower the social support score the higher the incidence of Internet addiction, with less social support a risk factor for adolescents' online addiction (Chen et al., 2007). The predictive effect of social support on Internet addiction is obvious (Wu, Cai, & Yin, 2012). Research also revealed that young people use the Internet more frequently than people in older age categories (Lupac & Sladek, 2008) and are in higher need of peer social inclusion and support (Brown & Larson, 2009). Previous studies have found that there was a significant positive correlation between depression and Internet addiction, with the former an effective predictive effect on the latter (Gao, Gao, & Wang, 2011; Ozcan & Buzlu, 2007). Furthermore, it is reported that the lack of social support can lead to depression, which may increase the susceptibility to Internet addiction (Ybarra, 2004).

To date, however, few studies have assessed the association between Internet addiction and social support among adolescents. For this reason, a large-scale, cross-sectional study was carried out in Anhui province. This study investigated the status of Internet addiction in adolescents. The aims included 1) investigating the prevalence of Internet addiction and understanding the current situation of Internet addiction in adolescents; 2) exploring related factors with Internet addiction; and 3) Analyzing the mediating effect of depression between social support and Internet addiction.

#### Materials and methods

#### **Participants**

The participants were recruited from vocational high schools and higher vocational colleges in five cities (Chuzhou, Fuyang, Chaohu, Tongling, Anqing) of Anhui province using stratified cluster random sampling. The vocational high schools and higher vocational colleges students are a unique population group in China. Compared with ordinary high schools and university students, students in vocational high schools and higher vocational colleges have their own characteristics in employment, learning environment and pressure. Due to the particularity of the role, students' psychological reaction is more complex and they often easy to turn to the Internet to seek out support and vent frustrations, making them a possible high-risk population of Internet addiction (Gao et al., 2011; Niu & Dong, 2010; Niu & Liu, 2012). Therefore, these students are more representative. Before the study began, informed consent was obtained from all of the study participants. In 2014, a total of 10574 adolescents were enrolled. There were 10158 students responding to the questionnaire (the response rate was 96.07%), including 4716 males (46.4%), 5442 females (53.6%). The mean age of the participants was 18.50 years (SD = 1.38), with a range from 14 to 24 years. Of 10158 students invited, 2487 (24.5%) were the only child, 7671 (75.5%) were the non-only child. 76% were from rural areas, the other 24% from urban areas. The sample was randomly divided into two equal parts for splithalf analysis. Sample 1 included 5112 participants, Sample 2 included 5046 participants. The study was approved by the ethics committee of Anhui Medical University.

#### Measurements

#### Demographic characteristics and internet use situation

Demographic characteristics and Internet use situation collected in the survey included gender, age, whether they were the only-child, residence, parental education level, parental control, per capita annual household income, academic

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