While the Internet became an indispensable component of our contemporary life, public and academic attention is also gathered to its negative impact, namely Internet addiction (IA). Although clinico-demographic and behavioral factors are hypothetically implicated in the mechanism of IA, it still remains largely unknown how such factors are linked to IA severity. Thus, this study sought to examine relationships among IA severity and factors potentially associated with IA in Japanese students in different educational stages. In this study, a questionnaire-based survey was conducted, which included questions about types of online activities and clinico-demographic information, the Internet Addiction Test (IAT) for IA severity, and the K6 scale for psychological distress in 3224 students at elementary, junior and senior high schools, and universities. A multiple regression analysis was performed to predict IA severity with clinico-demographic and behavioral factors. Results showed that IA severity was significantly positively related to the following factors: e-messaging, social networking service (SNS), games, holiday internet usage, and K6 scores, while IA severity had negative correlation with using Internet for educational purposes, age of first exposure to the Internet, and sleep duration. Age was not related to IA severity among participants using both SNS and e-messaging. This study showed that IA was linked to various online activities and the degree of psychological distress. This indicates the importance of comprehensive assessment of online behavior and psychological factors for further understanding of IA.