学 位 論 文 の 要 旨

氏名　　　祝原　あゆみ

論 文 内 容 の 要 旨
INTRODUCTION

Internet addiction (IA) has increased with the rapid spread of Internet use in recent years. IA has been found to be uncontrollable and damaging with excessive use of this technology.

Recently the Ministry of Education, Culture, Sports, Science and Technology - Japan (MEXT) reported that many teachers and staff members working at schools had stress and poor mental health, therefore, the number of their school workers with mental illness had increased. It is well known that school teachers tend to have burnout syndrome (BOS) as one of the related symptoms of poor mental health. The Maslach Burnout Inventory (MBI) was defined BOS with three sub-concepts; "emotional exhaustion", "depersonalization", and "personal accomplishment". On the one hand, the MEXT has promoted incorporating the Information and Communications Technology in schools. Teachers will have increased opportunities to use the Internet necessarily in the future. We are afraid that IA will increase among teachers in the near future. There were few studies about the relationship between at-risk IA and BOS among school teachers based on a nationwide scale.

This study aims to research the relationship between at-risk IA and the Internet usage or BOS by conducting a nationwide cross-sectional survey and examining the factors associated with IA.

MATERIALS AND METHODS

This study was a cross-sectional survey by anonymous questionnaire. We randomly selected 140 junior high schools in Japan (selection rate: 1.3%) using the National School

Directory. All teachers belonged to the sampled schools enrolled as the subjects in this study. This survey was carried out in August and September 2016. Responses were obtained from 73 junior high schools (response rate 52.1% in target schools) and 2,080 teachers (response rate 62.5% among teachers). Of all responses, 1,696 eligible respondents (eligible response rate 51.0% in target teachers) participated in this study except 384 incomplete responses for analysis.

We asked participants for their backgrounds, Internet usage, degree of IA and BOS. Background information was included age, gender, position at school and duration of service for school personnel. Internet usage was devices used for Internet access, activities on the Internet, and average time spent on the Internet per day. We asked participants about IA, which was defined using the Internet Addiction Test (IAT). We divided the participants into either the non-IA group (IAT score $<$ 40, n=1600), the at-risk IA group (40 $\leqq$ IAT score, n=96). The questionnaire asked participants about BOS, which was defined using the Japanese Burnout Scale (JBS). It was created after referring to the MBI and adapted to actual situations in Japan. The BOS consists of three factors; "emotional exhaustion" assesses feelings of being emotionally overextended and exhausted by one's work, "depersonalization" assesses an unfeeling and impersonal response toward recipients of one's service, care, treatment, or instruction, and "personal accomplishment" assesses feelings of competence and successful achievement in one's work with people. These are rated on a 5-point Likert scale from "not at all" (1) to "very" (5). Score of each factor of BOS were divided into quartile. To compare the difference between at-risk IA and non-IA, we used Mann-Whitney test, chi-square test and Student's t–test according to variables. To analyze the relationship between the IAT score and each quartile of each three factors of the JBS, we used both ANOVA and ANCOVA adjusted by relevant confounding factors. To clarify the contribution of each independent variable to the at-risk IA group, we used multiple logistic regression analysis.

The study protocol was approved by the Ethics Committee of Shimane University.

RESULTS AND DISCUSSION

In our study, mean IAT scores were 46.68 ± 6.23 in the at-risk IA group and 25.51 ± 4.82 in the non-IA group. The at-risk IA was associated with being younger, having a shorter length of service in school, higher prevalence of having a smartphone, playing games, hobbies or entertainment, shopping, and surfing the Internet, using many hours for Internet. The means of IAT scores according to the quartiles of three factors of JBS, the "emotional exhaustion" and "depersonalization" were positively associated with IAT scores. However, the highest quartile of "decline of personal accomplishment" had the lowest IAT scores with statistical significant. By the logistic regression analysis, the odds ratio and 95% confidence interval of each risk factor with at-risk IA were activity on Internet such as surfing the Internet (Odds ratio: 1.88, 95%Cl:

1.16-3.05) and gaming (Odds ratio:1.83, 95%Cl: 1.13-2.98), time spent on Internet access for private purposes for 60 minutes or more, in both weekdays (Odds ratio: 3.30, 95%Cl: 1.69-6.44) and weekend (Odds ratio: 2.71, 95%Cl: 1.19-6.18). Furthermore, the odds ratio to the at-risk IA were higher with increasing the quartiles on "depersonalization" (Odds ratio: lower quartile 3.21, higher quartile 3.29, and highest quartile 6.04). On the other hand, highest quartile for "decline of personal accomplishment" had significantly lower odds ratio (Odds ratio: 0.38, 95%Cl: 0.19-0.78) with at-risk IA.

We found at-risk IA has a relationship with Internet use for private purpose, playing games and surfing the Internet among junior high school teachers by a nationwide random sample. Moreover, we clarified the relationships between some factors of BOS and at-risk IA. First, we found the positive relationship with "depersonalization" of BOS and at-risk IA, even adjusting for characteristics and Internet usage. Our study also found a highest quartile for "decline of personal accomplishment" had lower odds ratio with at-risk IA. Our results indicated that teachers with at-risk IA might use the Internet as coping with psychosocial stress because they had to work hard and become exhausting mentally and physically, as following BOS. Then, they may be imprisoned in the world of the Internet in trying to escape real problems, and as a result, they may feel troublesome or not be able to build better relationships with their students and colleagues. It also seems that teachers with "decline of personal accomplishment" tend to reject contact with real society in addition to society via the Internet. We guess that teachers with at-risk IA may have higher of personal accomplishment in the Internet world. Our findings show that at-risk IA may occur in teachers who want to escape from the real world.

CONCLUSION

We examined the Internet usage and related factors in junior high school teachers with at-risk IA by conducting a nationwide cross-sectional survey. Our study proved that at-risk IA was associated with using Internet for many hours for private use, using gaming and surfing the Internet. Then, this study clarified the relationship between at-risk IA and some factors of BOS among junior high school teachers. Of the three factors of BOS, "depersonalization" had a positive relationship with at-risk IA. Therefore, our results suggest that findings of early stages of "depersonalization" may prevent at-risk IA among junior high school teachers. Then, teachers with at-risk IA may have higher personal accomplishments in the Internet world. Our results suggest that teachers should be instructed to use the Internet properly. Our findings will contribute to improve school mental health among teachers.