The Relation of Internet Addiction and Excessive Daytime Sleepiness in Korean College Students

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Abstract. Purpose: Purpose of this descriptive research is to examine the relation of internet use and sleep quality, excessive daytime sleepiness (EDS) of university students for preparing the basic data to develop nursing intervention which could be helpful to sleep management which is a major factor of university student’s health management. Method: Study subjects were targeting 228 university students. The correlation between internet addiction disorder and sleep quality, excessive daytime sleepiness (EDS) was analyzed using Pearson’s Correlation. Results: Sleep quality, excessive daytime sleepiness (EDS) and internet addiction disorder showed significant correlation

1 Necessity of the research

Internet in Korea is a medium which is deeply settled at our life in informatization times. According to ‘2014 internet use survey’ by Korea Internet & Security Agency, the number of internet users per 100 people in 2006 was 78.1, which increased to 84.3 users in 2014. At the ages of 20’s and 30’s, internet use rate shows 99.8% of high percentage[1], general life of 20’s to 30’s university students is spread mostly by internet utilization and the internet becomes the core media in university students’ communication media[2]. Increase of internet use provides various benefits, but the internet addiction symptoms are being reported which could give serious influences to social and personal health. Internet addiction is a psychological disorder that internet user is addicted to the internet which is similarly addicted to drugs, alcohol and gambling and is an addiction state that the user is addicted to internet and shows the pathological symptom like dependence, tolerance and withdrawal symptom[3]. Internet addiction symptom acts as an influencing factor to personal health, but there are insufficinet researches about internet addiction of the university students who have relatively less control even though they have various exposures to the internet. In particular, there is no research about the relation between internet addiction and the sleep[4] which is an essential living area to human beings and important to maintain physical health. Reasons of university students’ sleep disorder and excessive daytime
sleepiness (EDS) are classified into environmental factors and intrinsic factors. Therefore, this study was conducted to search the correlation between internet addiction disorder and sleep quality, excessive daytime sleepiness (EDS).

2.2 Purpose of this study

Purpose of this study is to examine internet use and sleep related influencing factors and to prepare for the basic data to develop nursing intervention which could be helpful to sleep management which is the major factor in university student’s health management.

3 Study method

3.1 Study design

This study is a descriptive research the relation of the university student’s sleep aspects and excessive daytime sleepiness (EDS) level, excessive daytime sleepiness (EDS).

3.2 Study subject

Study subjects were targeting the university students in two universities with snow ball recruitment method and research subjects were casted by explaining the study purpose to data collection assistant student and 228 students who understood and agreed to the research participated in the experiment.

3.3 Data collection period and method

In this study, data were collected from 2015 January to 2015 March and questions were asked to study subjects and small gifts were presented for the survey.

3.4 Study tools

(1) Internet use addiction

Regarding internet use addiction, Jung’s study tool was used which was manufactured by referring Young[3]’s Internet Addiction Test and Goldberg(1996)[6]’s addition diagnosis standards.
This study tool includes a total of 20 questions and question contents are mobile phone use related compulsive behavior, emotional change, behavioral problems and the scores are measured by 5 point Likert scale. Higher scores mean high level of internet use addiction.

(2) Excessive daytime sleepiness (EDS)
Epworth Sleepiness Scale (ESS) was developed by Johns (1991)[5], and translated version by Joo and other[6] was used for this study.

ESS is composed of 8 questions to measure the sleepiness in everyday life with 4 point scale. Ranges of the scores are from 0 to 24 points and higher scores mean the subject feels more sleepiness and the scores of excessive daytime sleepiness(EDS) are higher than 11 points. Reliability of the tool was 0.82 in Johns (1991)’s test-retest and Cronbach α coefficient was 0.88.

(3) Sleep quality
Sleep quality was measured by Sleep Quality Scale (SQS) which was developed by Yi [7]. SQS is a 4 point scale with 28 questions and higher scores mean bad sleep quality. Cronbach α coefficient at the time of development was 0.92 and retest reliability was 0.81.

3.5 Data analysis method
Collected data were analyzed using SPSS 18.0. General characteristics of the subjects were analyzed with average, standard deviation and percentage. Correlation between internet addiction disorder, sleep quality and excessive daytime sleepiness(EDS) was analyzed using Pearson ‘s Correlation.

4 General characteristics of study subjects and average of major variables
Average age of study subjects was 19 years old and mostly (67%) 1st grade students. 75% of subjects were non-smokers and 55% didn’t drink. Most subjects didn’t have diseases and scores of sleep quality was 24 points which was relatively good, but some subjects had bad score of 75 points out of 100. Average of excessive daytime sleepiness(EDS) was 7.84 points and highest score was 24 points, which showed much higher scores than cut line score, 11 points. Average of internet addiction disorders was 25 points and highest score was 63 points.

| Table 1. General characteristics of study subjects and average of major variables, N=228 |
|-----------------------------------------------|-----|-----|-----|-----|-----|-----|
| Variable Category | N  | %   | M   | SD  | Min | Max |
| Average age        |     |     |     |     |     |     |
| 1st grade students |     |     |     |     |     |     |
| Non-smokers        |     |     |     |     |     |     |
| Non-smokers        |     |     |     |     |     |     |
| Sleep quality      |     |     |     |     |     |     |
| Excessive daytime  |     |     |     |     |     |     |
| EDS                |     |     |     |     |     |     |
Correlation between sleep quality, excessive daytime sleepiness (EDS) and internet addiction disorder. Sleep quality, excessive daytime sleepiness (EDS) and internet addiction disorder showed significant correlation like Table 2.

Table 2. Correlation between sleep quality, excessive daytime sleepiness (EDS) and internet addiction disorder N=228

<table>
<thead>
<tr>
<th></th>
<th>Sleep quality</th>
<th>EDS</th>
<th>Internet addiction</th>
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<tr>
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<td>0.285</td>
<td>0.322</td>
</tr>
<tr>
<td>EDS</td>
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<td>1</td>
<td>0.285</td>
</tr>
<tr>
<td>internet addiction</td>
<td>0.322</td>
<td>0.285</td>
<td>1</td>
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<tr>
<td>P-value</td>
<td>p &lt; .01</td>
<td>p &lt; .01</td>
<td>p &lt; .01</td>
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</tbody>
</table>
5 Discussion

Results of this study showed significant correlation between sleep quality, excessive daytime sleepiness (EDS). Considering that the sleep is a major factor in health and an influencing variable for learning effect of university student, it is considered that internet addiction should be managed which is an influencing factor of sleep quality and excessive daytime sleepiness (EDS).

References

2. Shin, J. S. “Study about university student’s internet addiction and communication anxiety”, Graduate school of social welfare policy, Department of social welfare, Sangji University, Dissertation for master’s degree (2008).