Effects of College Student Smartphone Addiction/Overuse Intervention Program: A Systematic Review and Meta-Analysis

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Background

In 2015, the penetration rate of smartphones in Korea was 88%, exceeding more than 40 million smartphone subscribers. The sudden increase compared to 31.3% in 201 is meaningful compared to the statistics that 72% of the US population has smartphones in 2015 (Ryu, Mam, Eom, 2016; Smith, 2015). As it can be seen from the results of the study that 95.1% of smartphone users in Korea use mobile internet more than once a day and more than 90% of them use smartphone several times a day (Ryu, Mam, Eom, 2016), we are currently living in a smartphone era in which people use smartphones as an essential item for life.

This study conducted a systematic review and meta-analysis on the effectiveness of the smartphone addiction improvement intervention program to provide an objective basis for the improvement effects of the smartphone addiction/overuse mediation program on college students' smartphone addiction, depression, self-control, and anxiety.

Purpose:

This study is to identify the effect of intervention program on college students' smartphone addiction, depression, self-control, and anxiety improvement by conducting a systematic review of literature and meta-analysis on randomized experimental studies or similar experimental research papers that reported the effects of smartphone addiction/overuse programs

Methods:

Literature search strategy

Since this study is a method of analyzing the existing study results, we collected domestic and international papers in Korean and English from June to September 2017 after receiving the prompt examination which is exempt from a consent from the Institutional Review Board, the institution to which the research belongs. Search engines include Pubmed, MEDLINE, Embase, CINAHL National Assembly Library, DBpia (Nurimedia), KISS[Korea Studies Information Co., Ltd.], KMbase (Korean Medical Database), KoreaMed, NDSL (National Digital Science Library), RISS (Research Information Service System) and Cochrane Library. The keywords used in the search are as follows: 'university, college' for study targets, 'smartphone addiction, smartphone overuse' for study topics, 'experiment (intervention, program, effect, therapy, treatment)' for study methods. In the search engines, college student AND smartphone addiction AND program, college student AND smartphone addiction AND intervention, college student AND smartphone addiction AND effect, college student AND smartphone addiction AND prevention, college student AND smartphone addiction AND treatment etc. were combined.

Inclusion and exclusion criteria

The following is a description based on PICOTS-SD (Participants, Intervention, Comparisons, Outcomes, Timing of outcome measurement, Settings, Study Design), which is a general description form of systematic review.

The selection criteria are as follows: 1) papers applying the smartphone addiction / overuse intervention program to college students among domestic journals and theses or papers published in overseas journals from 1999 when the papers on smartphone addiction began to be published until 2017 2) random experimental studies, similar experimental studies, 3) papers published in the form of journals or dissertations, 4) papers reporting the minimum statistical values (mean, standard deviation) and the number of subjects required to calculate effect size. Exclusion criteria are 1) no- experimental studies, 2) studies that cannot estimate the size of effects etc.

Study selection and assessment of risk of bias

First, we searched through the title and abstract of the thesis and as a result, a total of 24,210 papers were searched such as Pubmed (7220), MEDLINE (11072), Embase (2314), CINAHL (3324), National Assembly Library (12), DBpia (39), KISS (30), KMbase (3), KoreaMed (4), NDSL (36), RISS (156) etc. Among the first selected papers, 2,020 studies were duplicated and 22,190 papers were selected secondarily. In the process of checking the titles and abstracts of the papers selected secondarily, 22,173 papers that did not meet the selection criterion were excluded and 14 papers were selected for the third time. We reviewed the full text of the papers, among which 4 dissertations with the same titles and journals selected in duplicate were excluded, 10 research papers were selected finally. The finally selected papers were all Korean papers.

Data Analysis

The effect size of college students' smartphone addiction/overuse intervention was analyzed using Cochrane Library's RevMan 5.3 program.

Results:

24,210 studies were retrieved, of which 10 studies met the inclusion criteria. Meta-analysis showed that smartphone addiction/overuse intervention had statistical significance in reducing smartphone addiction among university students (standardized mean differences= –8.43; 95% CI= -10.98, -0.61). **Conclusion:** This systematic and meta-analysis suggests that of smartphone addiction/overuse intervention has an effect on improving smartphone addiction.

Conclusion:

This systematic and meta-analysis suggests that of smartphone addiction/overuse intervention has an effect on improving smartphone addiction. However, further studies are required to evaluate the effects of smartphone addiction/overuse intervention on depression, self-control and anxiety.

Title:

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Keywords:

Addiction, Meta-analysis and Smartphone

References:

Ryu, S. S., Nam, G. W., & EOM, N. R. (2016). The survey on internet overdependence in 2016. Korea National Information Society Agency.

Smith, A. (2015). U.S. smartphone use in 2015[internet]. Washington(DC): Pew Pearch Center; [cited at 2016 Jan 28]. Available.

Abstract Summary:

The purpose of this study was to evaluate the effectiveness of smartphone addiction/overuse intervention among university students. Searches were conducted through Pubmed, MEDLINE, Embase, CINAHL National Assembly Library, DBpia, KISS, KMbase, KoreaMed, NDSL and RISS.

Content Outline:

Background

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