

META-ANALYSIS STUDY ON THE EFFECT OF DIFFERENT VARIABLES ON NOMOPHOBIA AND PHOMOPHOBIA

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ABSTRACT

The goal of this study is to investigate the effect sizes of some variables related to nomophobia and fomophobia. Relational effect sizes between Ego Integrity, Social Media Use, Technology Addiction and Psychological Disorders were examined. The data were obtained from thesis and article studies conducted between 2016-2019. Study data were obtained from smartphone addiction (nomophobia) and fear of kidnapping (fomophobia). Studies meeting the criteria were obtained from popular databases such as Web of Science and Scopus. The study universe includes studies on nomophobia and homophobia addictions. Criterion sampling method was used in the selection of studies representing the universe. The data are based on the data obtained from the nomophobia and fomophobia measurement tools, the reliability of the measurement tools, and the arithmetic mean, standard deviation, correlation and sample size values of the quantitative studies. In accordance with these criteria, a total of 45 studies were included in the meta-analysis. In the meta-analysis, Begg and Mazumdar Rank Difference Correlation, Classic Fail-Safe N Test, Forest Chart, Q value, p significance level were calculated. The significance level of the research is 0.05. The results of the study were discussed within the scope of literature studies. Among the results of this study, the effect size of fomophobia on Psychological Disorders was remarkable. It is expected to shed light on the experts working in this field in order to better understand the psychological problems that arise with the new addictions of the digital age.

Keywords: Psychological disorders, technology addiction, using social media, ego.

INTRODUCTION

The use of smart phone is rapidly spreading especially among the young people. Most of the teenagers and young adults spend most of their times on the Internet connection. The increase in social media use and the demand on the new trends in functional features of telephones increases the interest in the Internet and technology.^{1,2} Being unable to access to the Internet on daily routines or the lack of device causes in youngsters discomfort, social relation failures and decrease in school success.^{2,3,4,5} During the developmental progress from adolescence to the adulthood, some tendencies are mentioned those represent the formation of addiction. Those tendencies are; the fear of losing the communication, fear of the lack of device, being unable to switch off the smart phone while sleeping or leaving it, decrease in social relations or feelings and behaviors such as individual anxiety. Those indications have similar symptoms with many disorders within the DSM-5 diagnosis criteri.⁶ The literature reveals that the nomophobis states in young adults have relationship with personality dimensions, adaptation, taking responsibility, emotional balance and openness to the development.⁷ In case of communication loss and being unable to access to the information, there is a median and high increase in nomophobic levels as well as sleep disorders.^{8,9} The adolescents having tendency towards nomophobia continuously carry charging cables with them, check their smart phones right after they wake up, they go to bed with their smart phones, connect to the social media actively every day, check their smart phones at least 50 times daily, they have at least 4 social media account memberships and spend at least 7 hours daily on social media.¹⁰ When there is a tendency towards the excessive demanding from social support need and like that have a positive effect on personal development; they can turn into the technology addiction and related some of the psychological disorders. Among the new psychological addictions of the new era, there are netlestphobia, nomophobia, fomophobia and selfilist. The current accessible digital addiction and related studies will be dealt within the scope of the literature through this study. The factors that affect the digital addiction and the effects of digital addiction on the mental state will be analyzed. This study has the characteristic of being the first meta-analysis study conducted through the literature associated with the types of digital addiction. Therefore, the meta-analysis results are expected to enlighten the experts conducting studies in the area.

METHOD

The data of this study are gathered according to the documentary analysis and those data are analyzed through meta-analysis technique. Meta-analysis is a kind of analysis that paves the way for reaching a general result by combining the findings obtained from different studies.¹¹

Data Collection

The data were obtained from the thesis and article studies conducted between years 2016-2019. The based data in the study were obtained from the measurement tools of (Fomophobia) the fear of missing out the trends and (Nomophobia) smart phone addiction. The studies complying with the criteria were reached from the index of ULAKBIM, YÖK, Google Academics, EBSCO host, Scopus and Web of Science. The target population of the study covers the studies related to the addiction of nomophobia and fomophobia. The criterion sampling method was used in the choice of studies representing the target population. Accordingly; the criteria were based as; the data to be obtained from the nomophobia and fomophobia measurement tools, the reliability of these tools to be given, the arithmetic average of quantitative studies to be given as well as standard deviation and values of the sampling size to be given. According to those criteria, total 45 studies were included into the meta-analysis. The sampling size that was included to the study is 18,558.

Data Analysis

Before the data analysis, the data was coded through descriptive coding according to the sub themes. The descriptive coding was presented on Table 1.

Table 1 Descriptive Coding Tabel

General Coding	Variables
Ego Integrity	Social Support Belonging Populairty Self Respect Sense of Leadership Sense of Internal Integrity Socialability Positive Ego Perception
Social Media Use	Facebook Use Social Media Preference Snapchat Use Social Media Participation Social Network Sites Use Twitter Use
Psychological Disorder	Anxiety Depression Hostility Stress of Being Unpopular Sense of Loneliness Stress of Being Not Belonging
Technology Addiction	Smart Phone Use Frequency Smart Phone Addiction Excessive Internet Use Facebook Addiction Message Control Frequency Social Media Use Frequency Problematic İnternet Use Problematic Smart Phone Use Social Network Addiction Frequency of Being Unremained on the Connection

The bias values of the studies included to the meta-analysis were analyzed according to order difference correlation test of Begg and Mazumdar. The level of reliability was analyzed through Classical Fail-Safe N Test. The Homogeneity test was determined by analyzing Cone graphic, Q value and p significance level. The size effect was

calculated according to the g value of Hedges. The significance level in the study was 0.05. The data gaps were taken as the base for explaining the size effect levels (-0.15 - 0.15 unimportant; 0.15 – 0.40 low; 0.40-0.75 median; 0.75-1.10 high; 1.10-1.45 very high; higher than 1.45 perfect).¹¹

FINDINGS

In the study, the size effect of nomophobia was analyzed firstly according to the gender variable. Before the data analysis; the publication bias related to the individual studies were tested. According to Begg and Mazumdar rank order difference test, Tau coefficient was close to 1.00 and p value was higher than 0.05 (Tau= 0.279, p= 0.058). These findings show that the studies do not have publication bias. According to the homogeneity test; the data gathered heterogenously (Q=82.370, df=16, *p<0.001). Therefore; the general effect size was calculated according to Random Effect Model. The size effect study uneasiness was analyzed through forest plot that is illustrated on Figure 1.

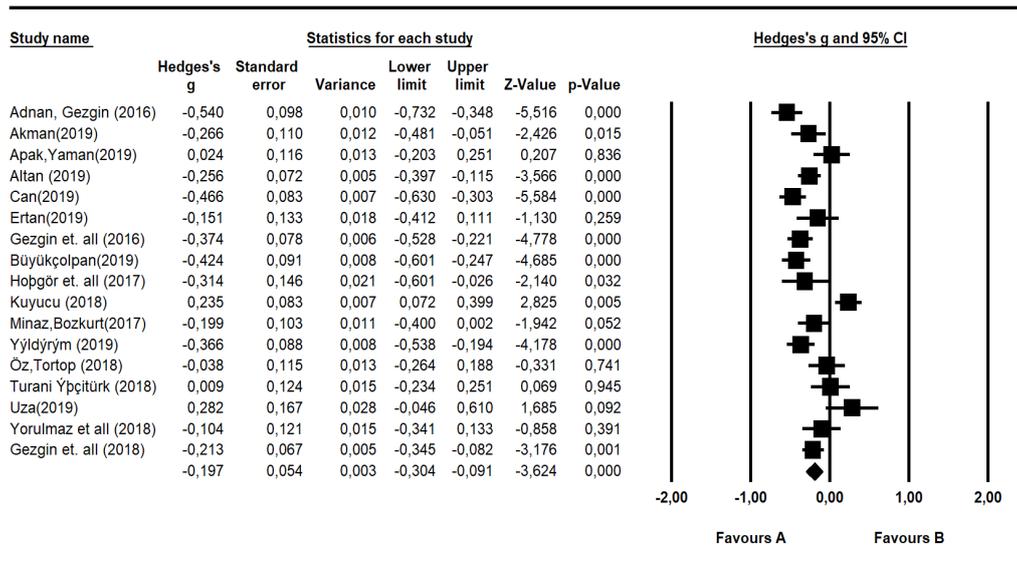


Figure 1 Forest Plot

The study uneasiness according to the gender distributes between -2.00-2.00 on Figure 1. The general effect size of nomophobia according to the gender was represented on Table 2.

Table 2 Nomophobia Effect Size According to the Gender

Variable	g	Serror	z	Lower Limit	Upper Limit	*p
Nomofobi	-0.197	0.054	-3.624	-0.318	-0.069	0.000

*p<0.001; Hedges's g=g; Lower Limit-Upper Limit: 95 percent confidence interval.

In terms of females; the total effect size has been found higher according to the gender variable on Table 2 (g=-0.197).

On the second phase of the study, fomophobia effect size values were measured according to the descriptive codings. Before the analysis; the publication bias was tested by Begg and Mazumdar Rank correlation analysis. As a result of the analysis (Tau coefficient is close to 1 and p>0.05), the publication bias was found. The reliability level of the studies included to the analysis was analyzed through Classic fail-safe N Test. The analysis results were given on Table 3.

Table 3 Classic fail-safe N Test Results

Variable	*p	**Alpha
Ego Integrity		1524
Psychological Disorder		2190
Technology Addiciton	0.05	2905
Social Media Use		1756

*p>0.05; **Alpha= Number of studies that will create difference

There is a need to conduct additional study with the minimum “Alpha” amount that will change the analysis results on Table 3. According to those data; the reliability of the study is high. According to the homogeneity test; the general effect size was analyzed within the base of Random Model ($p < 0.001$). The general effect size analysis results according to the descriptive codes are given on Table 4.

Table 4 Fomophobia Effect Size According to Descriptive Codes

Variable	Hedges’g	Serror	z	Lower Limit	Upper Limit	*p	Hedges’g
Ego Integrity	0.621	0.158	3.922	0.311	0.931	0.000	Median
Psychological Disorder	1.224	0.270	4.528	0.694	1.754	0.000	Very High
Technology Addiction	0.819	0.132	5.215	0.560	1.078	0.000	High
Social Media Use	0.538	0.112	4.781	0.317	0.758	0.000	Median

* $p < 0.001$; Hedges’s $g = g$; Lower Limit-Upper Limit: 95 percent confidence interval.

On Table 4; the effect size of Ego Integrity variable on Fomophobia has been found as positive and on the median level ($g = 0.621$). In other words; the effect size of social support, belonging, popularity, self-respect, sense of leadership, sense of internal integrity, sociability and positive ego perception variables on Fomophobia was positive and on the median level. The effect size of fomophobia on psychological disorders is positive and on the very high level ($g = 1.224$). In other words; anxiety, depression, hostility, stress of being unpopular, sense of loneliness and stress of not belonging have effect on fomophobia positively and on very high level. The size effect of technology addiction on fomophobia was positive and on the high level ($g = 0.819$). This means; there has been a positive and high level effect size on fomophobia according to Smart Phone Use Frequency, Smart Phone Addiction, Excessive Internet Use, Facebook Addiction, Message Control Frequency, Social Media Use Frequency, Problematic Internet Use, Problematic Smart Phone Use, Social Network Addiction and Frequency of Being Unremained on the Connection. Among the findings, the Sociak Media Use has been found to cause a positive and median level effect size on fomophobia ($g = 0.538$). In other words; it can be said that the variables of Facebook Use, Social Media Preference, Snapchat Use, Social Media Participation, Social Network Sites Use and Twitter Use has a positive and median level effect size on fomophobia.

DISCUSSION

Within this study; the effect size has been analyzed between nomophobia and fomophobia and the psychological disorders, technology addiction, social media use, ego integrity and gender differences. According to the gender variable the effect size of nomophobia in this study has been found as on the median level and on females it was higher. The literature studies reveal the nomophobic addiction in females as median, high and very high level. The results of the literature studies support the results related to gender variable in this study.^{1,3,4,8,12,13,14,15,16,17,18,19,20,21,22,23, 24,25,26} Some of the literature studies reveal results that the digital addiction levels do not show difference according to the gender.^{2,3,4,13,22,27,28,29} Those different results might be due to the sampling size and its distribution within the scope of the study. The fomophobia’s causing very high level effect size on psychological problems is seen as essential in terms of the awareness about the disorder that era causes addiction. The literature studies support the results of this study under the subjects of nomophobia and depression and anxiety; social belonging and stress of being unpopular and the fomophobia; fomophobia and social anxiety; aggressiveness and feeling good; anxiety, depression, stress and fomophobia; nomophobia and psychological problems; social relations and technology use; loneliness, hope and nomophobia; concerns, stress, problems in social relations and fomophobia; academic success, sleep disorders and nomophobia.^{10,12,16,20,25,30,31,32,33,34,35,36,37}

The technology addiction has a median effect size on fomophobia whereas high level on social media use. This study’s results are supported by the literature studies about nomophobia and smart phone addiction and the Internet; nomophobia and being unable to stay far from the smart phone, carrying a spare charger, and Internet addiction; fomophobia and Facebook addiction and social media use.^{12,15,32,35,38,39,40,41,42,43,44} According to the ego integrity there is a positive and median level effect size on fomophobia. This effect is on the positive dimension within the ego integrity needs. The essential of ego integrity as social support, belonging, popularity, self-respect, sense of leadership, internal integrity, sociability and positive ego perception increase the effect size on fomophobia. The increase on this effect supports the possibility of the reason of the ego needs on the unhealthy level. The results of this study are supported by the literature study results about fomophobia and the need for social relations, being accepted and sense of self-sufficiency; nomophobia and wish of self-realization and being unable to establish communication; fomophobia and sense of belonging and popularity among adolescents; fomophobia and ego-respect.^{12,18,23,44,45,46,47,48}

RESULTS

As a result; the literature studies on digital addiction have been revealed as general results through the meta-analysis method. The effect size between the psychological problems and nomophobia and fomophobia of the digital addiction types has been on the remarkable level. To concentrate on studies about reducing the destructive psychological effects of digital addiction is suggested. The digital addiction effect has been higher on the significant level in females in terms of the gender. It is suggested to concentrate more on the studies about the reasons of this effect on the females. The general effect size of technology addiction on fomophobia has been found high. The reason of this effect can be due to the technology tool role. Conducting studies on this topic is suggested. The social media use variable has caused an effect size on fomophobia on the median level. This effect on fomophobia is thought be related to the social media use duration and aim. New meta-analysis studies are suggested to conduct that would reveal the effect size of the digital addiction according to the variables.

There are a few limitations in this study. Firstly; the general effect size obtained from the gender difference covers the Turkish sampling. In order to reach generalizable results for gender difference, more studies on foreign sampling need to be added to the literature. As this study covers the domestic and foreign samplings of effect sizes according to the descriptive codes about fomophobia, the results are generalizable. However, the types of digital addictions except nomophobia and fomophobia that met the criteria were excluded from the analysis. If this limitation makes for sufficient quantitative studies in the literature about the different addiction types; then they are suggested to be included to the meta-analysis.

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