



Social Network Site Usage Among Adolescents: Effects on Mental and Physical Well-being

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Foreword

Submitted in partial fulfillment of the requirements of the BSc Psychology degree, Reykjavik University, this thesis is presented in the style of an article for submission to a peer-reviewed journal.

Abstract

Social network sites have increased substantially in popularity in our society where the majority of users are adolescents. Social network sites are various web-based platforms that enable individuals to create profiles, interact with friends and family, share photos and information, play games, and chat through instant messaging. Whereas adolescence is a vulnerable period to susceptibility to various social influences it is important to examine the effects social network sites may have. The study consisted of archival data from the Icelandic Centre for Social Research and Analysis (ICSRA), *Youth in Iceland 2013*. Participants of the current study were a random sample of 2.070 adolescents from a population of 11.116 Icelandic high school students. The majority of participants were from the age 16 to 19 years old. The main results of the study indicated that adolescents who use social network sites more frequently are adversely affected by the usage (both mental and physical well-being) as well as having indirect effects on depression through self-esteem.

Keywords: SNSs, Internet use, adolescents, well-being, self-esteem, depression

Abstract – Icelandic

Notkun samfélagsmiðla hefur aukist verulega í vinsældum í okkar samfélagi þar sem meirihluti notenda eru unglingar. Samfélagsmiðlar eru ýmis vettvangur á internetinu þar sem einstaklingar geta búið sér til prófil, átt samskipti við vini og fjölskyldu, deilt myndum og upplýsingum, spilað leiki og átt samræður í gegnum spjallforrit. Unglingsárin eru viðkvæmt tímabil þar sem unglingar eru næmir fyrir ýmsum félagslegum áhrifum og þess vegna er mikilvægt að skoða hver áhrifin eru af notkun samfélagsmiðla. Spurningalisti frá Rannsóknunum og greiningu úr könnuninni *Ungt fólk á Íslandi 2013* var notaður við gerð rannsóknarinnar. Valin voru svör 2.070 þátttakenda af tilviljun úr heildarþýði 11.116 framhaldsskólanema. Meirihluti þátttakenda voru á aldrinum 16 ára til 19 ára. Helstu niðurstöður rannsóknarinnar bentu til þess að unglingar sem nota samfélagsmiðla oftast verða fyrir neikvæðum áhrifum af notkuninni (bæði andleg og líkamleg líðan), þar að auki hefur notkun óbein áhrif á depurð í gegnum sjálfstraust.

Lykilhugtök: Samfélagsmiðlar, internet notkun, unglingar, líðan, sjálfstraust, depurð

Social Network Site Usage Among Adolescents: Effects on Mental and Physical Well-Being,
and Sleep

Over the past decade social network sites (SNSs) have increased substantially in popularity and become part of societies social practices (boyd & Ellison, 2007). SNSs are various web-based platforms that allow people to e.g. interact, play games, converse through instant messaging, and share interests. According to boyd and Ellison (2007) there are three factors required to meet the definition of a SNS; (1) a constructed online profile, (2) a list of the users friends and followers who are interacted with, and (3) a link to each friends, follower or contacts profile. These profiles allow individuals to create new social relationships that would otherwise not be made and maintain existing relationships.

SNSs are accessible from every computer, iPad or smartphone that connects to the Internet and with this easy access people can go online in their home, school, work and even cafés. With the rapid development in a short period of time, SNSs have revolutionized people's communication methods (Kross et al., 2013) and become a part of our culture (Schultz, 2009). As a result of this growth in usage, it is important to focus on the potential adverse effects of excessive use that can be problematic or even addictive (Cao, Sun, Wan, Hao, & Tao, 2011). With hundreds of SNSs varying in technological features, supporting a wide range of practices and interests it seems Facebook has become the most rapidly used SNS with approximately 1.32 billion monthly active users (Contena, Loscalzo, & Taddei, 2015) whereas adolescents are a majority (De Leo & Wulfert, 2013). According to Kuss and Griffiths (2011) adolescence is a vulnerable period to susceptibility to various social influences such as, cognitive, emotional, and physical. Thus, it is important to examine the effects social network sites may have on adolescents.

Although the subject of SNSs has been examined a great deal, researchers seem to disagree on the cause and effect of their relationship to well-being. Studies have shown that

the use of SNSs may have socially and psychologically negative effects on people on one hand (Baek, Bae, & Jang, 2013; Kross et al., 2013; Teppers, Luyckx, Klimstra, & Goossens, 2014), but could as well be beneficial for social connection on the other hand (Barker, 2009; Kalpidou, Costin, & Morris, 2011; Liu & Yu, 2013; Manago, Taylor, & Greenfield, 2012; Steinfield, Ellison, & Lampe, 2008).

Adolescence is a period where individuals are establishing independence, strong identity, and focus is on the self. Feelings of low self-worth in adolescence may be related to decreased well-being and depression (Robertson & Simons, 1989). Depression is often described as disturbances in emotion, sleep, and behavior, thus essential to view what may cause these disturbances (Katona et al., 2005). Brage and Meredith (1994) examined how social factors such as parental control and communication, and self-esteem among other factors interrelated and their effects on adolescents' depression. They found significant direct effects between self-esteem and depression. Their findings included an age predictor in which older adolescents were more depressed than younger adolescents. Gender was as well significantly related to adolescent depression mediated through self-esteem (Brage & Meredith, 1994). Studies have shown that reasons for these incidents of low self-esteem and depression in adolescents can be due to socio-environmental problems and negative beliefs in one self (Robertson & Simons, 1989; Simons & Miller, 1987). Simons and Miller's (1987) findings are consistent with Brage and Meredith's (1994) findings in which adolescents' socio-environmental factors not only had direct effects on depression but indirect effects as well through self-esteem. Since socio-environmental factors have shown these negative effects it can be implied that SNSs usage may have similar effects on adolescents.

Morrison and Gore (2010) found that people who used the Internet excessively (identified as Internet addicts) showed significantly more symptoms of depression than those who did not. SNS addiction can be directly related to Internet addiction and is defined as

being concerned about SNSs, strongly motivated and driven to use SNSs, and devote such amount of time to SNSs that it impairs psychological health, well-being, and other social activities (Andreassen, 2015).

According to Kross et al. (2013) it may seem that SNSs satisfy peoples' basic needs for social connection. However, rather than increase well-being SNSs may have decreasing effects. Kross et al. (2013) examined the influences of Facebook use on young adults over a two week time period. Their results indicated that the more participants used Facebook the worse they felt over time and life satisfaction levels declined from the baseline measurement over the two week period. Participants' moment-to-moment feelings declined as well with more Facebook use (Kross et al., 2013).

Studies have argued that frequent use of SNSs have indirect effects on adolescents' social self-esteem and well-being (Kalpidou et al., 2011; Valkenburg, Peter, & Schouten, 2006). Kalpidou et al. (2011) examined how Facebook use was related to self-esteem and college adjustment. Their findings showed that Facebook use had negative effects on participants' self-esteem similar to Valkenburg et al. (2006) findings, which revealed that the basis for these negative effects on adolescents' self-esteem was the amount of feedback received on their profiles. However, Facebook usage was found to have positive relations to social connection among students with low self-esteem (Kalpidou et al., 2011). Niemz, Griffiths, and Banyard (2005) found in their study that excessive Internet users had lower self-esteem and were more socially disinhibited than non-users. Their results showed that 51% of the sample was experiencing one to three symptoms of decreased self-esteem and general health. Approximately 18% of the sample reported experiencing four or more symptoms.

A recent study has shown that excessive use of SNSs may have negative effects on quality of sleep, health, relationships, and general problems in well-being (Andreassen,

2015). Cao et al. (2011) investigated the prevalence of problematic Internet use among Chinese adolescents. They found that those who used the Internet more were more likely to suffer from psychosomatic symptoms, emotional and behavioral symptoms as well as physiological dysfunction. Furthermore, their results showed that problematic Internet use was more severe in high school students where they experience more serious dramatic problems than other ages. These findings may be due to adolescents' facilitated access to the Internet according to Cao et al. (2011). Adolescents who have been identified as SNS addicts remain on SNSs into the night resulting in less sleep per night and poor sleep quality compared to non-users. Problems in sleep have been directly related to psychological and physiological impairment over time. With this behavior adolescents may further experience anxiety, significant distress, and depression (Andreassen, 2015).

It has been shown that adolescents may be affected in various ways with the use of SNSs and the Internet, although the literature has not clearly established causation. Whereas there are inconsistencies in previous research, it is important to measure the SNS elements separately and not as a single variable. Viewed separately, self-esteem, depression, well-being, health, and sleep all have theoretical connections to SNSs and Internet use. However, no studies were found that examined direct effects of SNSs on all these factors together in a sample of high school students. The goal of the current study is to examine the consequences and effects the SNSs and Internet use have on adolescents' mental and physical well-being and sleep. Based on previous studies the following hypotheses were addressed: 1) Adolescents will be adversely affected by the use of SNSs, 2) SNSs have negative effects on self-esteem, 3) SNSs have direct adverse effects on depression, 4) SNSs have indirect adverse effects on depression mediated through self-esteem, 5) With frequent use of SNSs, adolescents sleep fewer hours per night, and 6) With frequent use of SNSs, adolescents experience more psychosomatic symptoms than those with less use of SNSs.

Method

Participants

The current study was based on archival data from the Icelandic Centre for Social Research and Analysis (ICSRA), *Youth in Iceland 2013* (Kristjánsson et al., 2014).

Participants of the population-based study from ICSRA were 11,116 adolescents' enrolled in 31 Icelandic high schools in 2013. Only those students who attended class the day the questionnaire was administered were participants in the study and a 75% response rate was received. Responses from a random sample of 2,070 participants of the population were used in the current study, 47.8% ($n = 989$) were male and 51.2% ($n = 1,059$) were female but 22 participants did not disclose their gender. Participants' age was between 15 to 23 years old, with a mean age of 17.5 years and standard deviation of 1.44. About 92% of the participants in the study were between the ages 16 to 19 years old. No payments or rewards were given for participation in the study.

Instruments and Measures

The original questionnaire from ICSRA consisted of 95 questions on 35 pages (Kristjánsson et al., 2014). Questions centered around an array of subjects including overall well-being, family relationships, health, and various behaviors and a Likert scale was most widely used. Ten questions regarding social network site usage, participation in social activities at school, self-esteem, depression, health, sleep, age, and gender were selected for the current study (see Appendix A).

Social Network Site usage. To measure participants' social network site usage, five items from the question "How much time do you generally spend doing the following each day?" were utilized. The items that were considered related to SNSs were Internet usage (for the purpose of playing games or using chat rooms), lan, blogs, and various social media

outlets (see Appendix A). The response format was on an 8-point scale on how many hours were spent per day in usage.

Participation in social activities at school. Participation in social activities was measured in the individual's perceived time spent and had the response format ranging from "very much" to "almost none" (see Appendix A). High scores indicated more participation in activities at school.

Self-esteem. The Rosenberg Self-Esteem Scale (RSES) was used to measure participants' self-esteem (Rosenberg, 1965). The RSES assesses the individual's perception of self-worth and consists of 10 items. Five statements were positively worded and five negatively and statements were answered on a 4-point Likert scale anchored by "strongly agree" (1) and "strongly disagree" (4) (see Appendix A). The positive statements in the RSES were reversed to match the negative statements and all ten items were then combined into the self-esteem variable. The scores on the scale ranged from 10 (low self-esteem) to 40 (high self-esteem). The items had high reliability (Cronbach's Alpha = .91) indicating high internal consistency of the Rosenberg scale.

Depression and Psychosomatic Symptoms. The Derogatis Symptom Checklist (SCL-90-R) assesses psychological symptoms and distress (Derogatis & Unger, 2010). Twelve items of the SCR-90-R were used to measure depression and psychosomatic symptoms. Responses were scored on a 4-point Likert-scale anchored by "almost never" (1) and "often" (4) (see Appendix A). Factor analysis was employed to divide the items from SCL-90-R into two factors: depression and psychosomatic symptoms. The KMO test was .93 indicating the data set was adequate for factoring and correlation was high enough for factoring whereas the Bartlett's test was significant ($p < .001$). Eight items were combined to measure participants' depression and four items were combined to measure psychosomatic symptoms. High scores on the scales meant that participants often felt psychosomatic

symptoms and felt more depressed. The depression scale had high reliability (Cronbach's Alpha = .91) as well as psychosomatic symptoms (Cronbach's Alpha = .75), indicating high internal consistency.

Health. Participants' health was assessed from responses to two questions; how good the individual's physical health was on one hand and how good the individual's mental health was on the other hand. Responses were measured from "very good" (1) to "poor" (4) (see Appendix A). Questions on physical and mental health were both reversed and then combined so that high scores meant that participants were in better health.

Sleep. The question on how many hours per night the participant slept was used to get an assessment of participants sleep. The response format was "from more than nine hours" to "less than six hours" per night (see Appendix A). The response format was recoded to get real time in terms of hours of sleep.

The study's independent variables were SNS usage (five separate variables), participation in social activities at school, gender, and age. The dependent variables were, self-esteem, depression, psychosomatic symptoms, health, and hours of sleep.

Procedure

The questionnaire from ISCRA was sent to every high school in Iceland in October 2013 and administered in class by teachers to those students who attended school that day (Kristjánsson et al., 2014). Prior to the survey ISCRA sent letters to parents containing a form of consent (see Appendix B). Parents who did not want their child to take part in the survey replied to the school or ISCRA. Teachers told students that they would be granted anonymity; they were to write neither their name on the questionnaire nor social security number. Students were asked to answer the questions conscientiously. Teachers were to assist students if needed. Upon a completion of answering the questionnaire each student put it in an unmarked envelope and returned it sealed to the teacher.

Data Analysis

Data were analysed with multiple linear regression and path analysis design in the statistical program *SPSS*. Separate hierarchical (blockwise entry) regression for the six dependent variables i.e. self-esteem, depression, psychosomatic symptoms, health, and sleep were run with the independent variables. The first block included the independent variables gender and age and the second block included the SNSs (Internet use (web, games, chat rooms), play games on the Internet, lan, blogs, and use of Facebook, Twitter, Instagram, Tumblr, Snapchat etc.), and participation in social activities at school. Multicollinearity was not an issue whereas tolerance was greater than 0.200 and ranged from 0.606 to 0.918 depending on the outcome variable. A path analysis was run to examine direct and indirect effects of predictor variables on self-esteem and depression. The causal flow was from the left to the right.

Results

The descriptive statistics for the variables used in the study are shown in Table 1. The table shows the number of participants, minimum and maximum value, mean score, and standard deviation for all variables of the study. Out of the SNSs, Internet use (web, games, chat rooms) ($M = 4.34$, $SD = 1.92$) and use of Facebook, Twitter, Instagram, Tumblr, Snapchat, etc. ($M = 4.18$, $SD = 1.97$) were the most frequently used with a range from 1 to 8. Out of the mental and physical well-being measures self-esteem ranged from 10 to 40 (high scores indicating high self-esteem) and had a mean of 31.50 with a standard deviation of 6.34. Health ranged from 2 to 8 and the mean was 6.10 with a standard deviation of 1.47 indicating that participants were in rather good health.

Table 1

Descriptive Statistics Showing Number of Participants, Minimum and Maximum Value, Mean, and Standard Deviation for the Major Study Variables

Variable	<i>n</i>	Min.	Max.	<i>M</i>	<i>SD</i>
Gender	2048	1	2	1.51	0.50
Age	2030	15	23	17.50	1.44
SNS					
Internet use (web, games, chat rooms)	1978	1	8	4.34	1.92
Play games on the Internet	1980	1	8	2.03	1.78
Lan	1980	1	8	1.26	1.02
Blogs	1934	1	8	1.16	0.78
Use Facebook, Twitter, Instagram, Tumblr, Snapchat etc.	1940	1	8	4.18	1.97
Participation in social activities at school	2042	1	5	2.96	1.13
Self-esteem	1949	10	40	31.50	6.34
Depression	1997	8	32	15.39	6.32
Psychosomatic Symptoms	2013	4	16	8.66	3.08
Health	2007	2	8	6.10	1.47
Sleep	2014	5	10	7.05	1.04

In Table 2 the multiple linear regressions for the variables in the study are presented.

The model shows the predictor variables gender, age, SNSs, and participation in social activities at school as they predict effects on the outcome variables, which are self-esteem, depression, psychosomatic symptoms, health, and sleep.

Table 2

Multiple Linear Regression where Gender, Age, SNSs Usage and Participation in Social Activities at School Predicted Self-Esteem, Depression, Psychosomatic Symptoms, Health, and Sleep

Predictor	Outcome									
	Self-Esteem		Depression		Psycho-somatic Symptoms		Health		Sleep	
	R^2	β	R^2	β	R^2	β	R^2	β	R^2	β
Step1	.06**		.08**		.14**		.03**		.01**	
Gender		-.24**		.28**		.38**		-.16**		.05*
Age		-.00		.06*		.04*		-.07*		-.09**
Step 2 ^Δ	.04**		.04**		.03**		.07**		.02**	
Gender		-.27**		.27**		.38**		.21**		.03
Age		.03		.03		.02		.02		-.08**
Internet use		-.07*		.11**		.11**		-.19**		-.08*
Play games		-.06*		-.01		.02		-.08*		-.06*
Lan		-.03		.01		.02		-.00		-.01
Blogs		-.11**		.07*		.00		-.03		-.04
Use Face-book etc.		-.04		.05*		.07*		-.03		-.05
Participator		-.11**		.10**		.04		-.13**		-.02
Total R^2	.10**		.12**		.17**		.10**		.03**	

Note: ^Δ Percentage of variance that variables adds to Stage 2 other than gender and age to the total explained variance. * $p < .05$. ** $p < .001$

Results show that Step 1 in the hierarchal regression contained gender and age and they explained the variance in the outcome variables, ranging from 1% to 14%. Gender and age explained the most in psychosomatic symptoms ($R^2 = .14$). Variables at Step 2 other than gender and age add 2% to 7% explained variance in the outcome variables. All eight

predictor variables explained total variance of self-esteem, depression, psychosomatic symptoms, health, and sleep, ranging from 3% to 17%. The predictor variables explained the most ($R^2 = .17$) in psychosomatic symptoms, which is significant, $F(8, 1796) = 46.84, p < .001$. Gender was the best significant predictor in the model with the strongest effects on psychosomatic symptoms ($\beta = .38, p < .001$). This indicates that girls experienced more psychosomatic. Age was a significant predictor of sleep ($\beta = -.08, p < .001$) meaning that older adolescents slept fewer hours per night than younger. Of the SNS predictors, Internet use (web, games, chat room) was the most effective predictor variable having significant effects on all outcome variables. Internet use had the strongest effects on health ($\beta = -.19, p < .001$), indicating with more use of the Internet for web, games, and chat rooms individuals were in worse health. Blogs was a significant predictor of self-esteem ($\beta = -.11, p < .001$), indicating that more use of blogs the lower adolescents self-esteem. Other predictors had significant effects although rather weak and lan was not a significant predictor for any of the outcome variables as shown in Table 1.

A path analysis was employed to test the causal paths between gender, age, the SNSs, and participation in social activities at school on one hand and self-esteem and depression on the other. The modified model (whereas only statistically significant items were included) is presented in Figure 1.

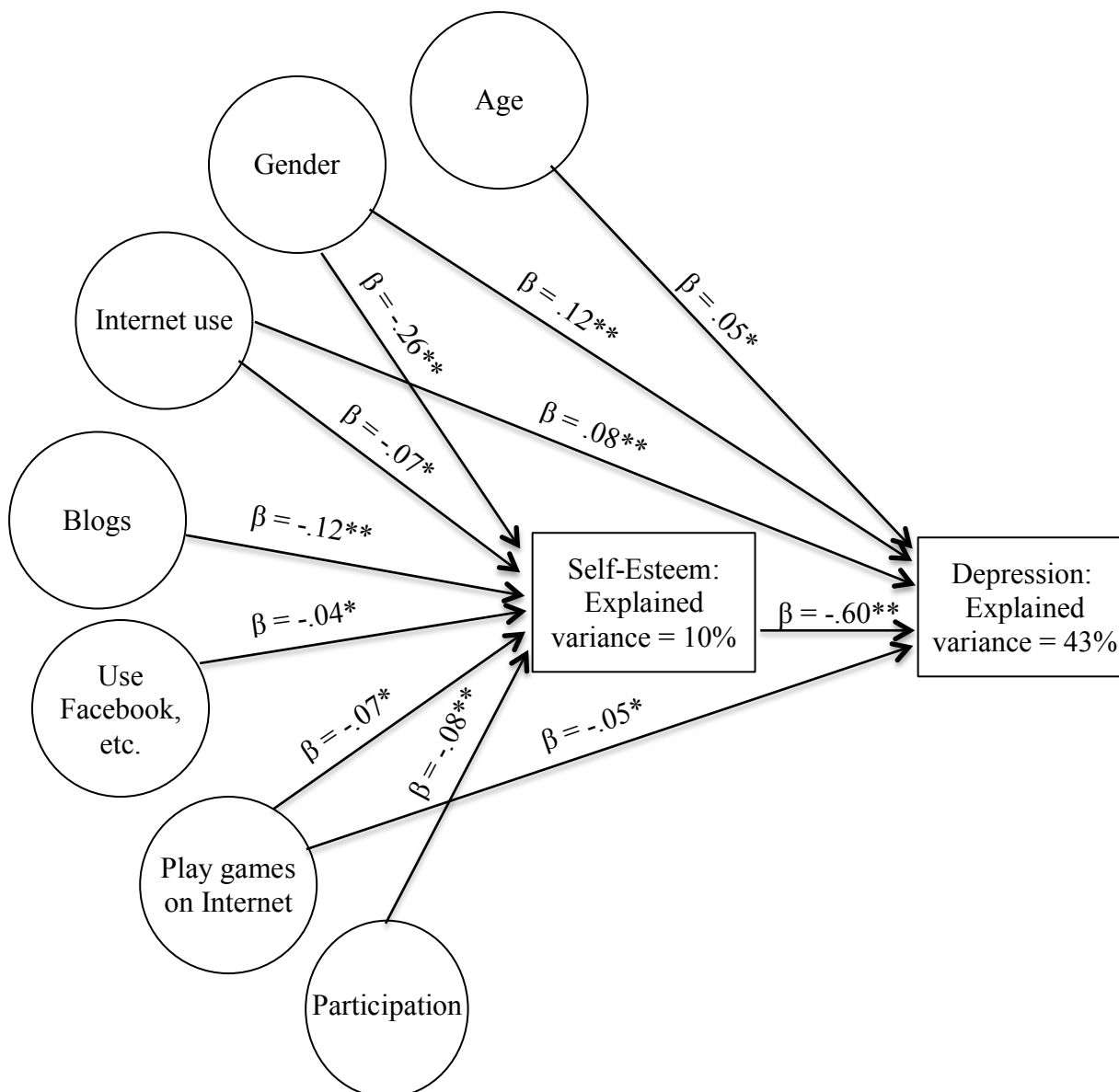


Figure 1. Path-analysis model of the relations between gender, age, the SNSs, and participation in social activities on self-esteem and depression as well as indirect relations on depression through self-esteem. Coefficients represent standardized betas. $*p < .05$. $**p < .001$

The path analysis examined the direct and indirect effects of the predictor variables on self-esteem and depression. Of all eight predictors in the study, seven had statistically significant relations to self-esteem and depression. Gender had strong effects on self-esteem ($\beta = -.12, p < .001$), indicating that girls have lower self-esteem than boys, and age was the only predictor to have effects solely on depression ($\beta = .05, p < .05$). Blogs had significant effects on self-esteem ($\beta = -.26, p < .001$) indicating with more use of blogs the less self-

esteem adolescents have. Only three predictors, two of which were SNS predictors, had direct effects on self-esteem and indirect mediated effects on depression through self-esteem. The strongest relations in the model were between self-esteem and depression ($\beta = -.60, p < .001$) indicating that low self-esteem is significantly related to depression in adolescents. With more use of the SNSs adolescents have lower self-esteem and, therefore, more depression. The predictors with self-esteem explained 43% ($R^2 = .43$) in the variance in depression, and explained 10% ($R^2 = .10$) in the variance in self-esteem.

Discussion

The primary purpose of the current study was to investigate the effects of social network site usage on adolescents' mental and physical well-being, and sleep. Mental and physical well-being are considered in this study as being self-esteem, depression, health, and psychosomatic symptoms. The main focus was to examine if adolescents would be negatively affected by SNSs, mainly their self-esteem and depression. The secondary purpose of the study was to examine the relations between the SNSs, gender, and age on self-esteem on one hand and depression on the other hand. Then examine the indirect effects on depression through self-esteem. The study also examined if adolescents more frequent use of SNSs would result in lesser sleep, and they would increase psychosomatic symptoms.

The findings of the study support the first hypothesis that SNSs have adverse effects on adolescents. With increased Internet usage for web, games, and chat room adolescents have less self-esteem, more depression, and increased psychosomatic symptoms. Due to the usage adolescents are in worse health and sleep fewer hours during the night. This is in accordance with Andreassen (2015) who showed that frequent use of SNSs impaired well-being, psychological health, and sleep quality. The results are consistent with Kross et al. (2013) findings as well whereas they showed that life satisfaction declined with more usage.

The results supported the second hypothesis that the use of SNSs has negative effects on self-esteem. Internet use for web, games, and chat rooms, playing games on the Internet and blogs all had significant negative effects on self-esteem although those effects were somewhat weak. Furthermore, girls' self-esteem was significantly lower than boys' self-esteem supporting Brage and Meredith's (1994) findings where socio-environmental factors had negative effects on self-esteem. These findings on self-esteem support Kalpidou et al. (2011) where they found that low self-esteem was related to using Facebook. Results of the study show that both Internet use and use of Facebook, Twitter Instagram, Tumblr, Snapchat etc. had significant effects on depression. The path analysis showed that Internet use, use of Facebook etc., and playing games on the Internet had direct effects on depression, thus, supporting the third hypothesis of the study that SNSs would have direct adverse effects on depression. Gender was as well a statistically significant predictor of adolescents depression indicating that girls felt more depressed than boys. These results are consistent with Brage and Meredith's (1994) findings that indicated that gender was related to adolescents' depression.

Further findings in the study were indirect effects of the SNSs on depression through self-esteem. Previous research has indicated that socio-environmental factors have similar effect on depression through self-esteem (Brage & Meredith, 1994; Simons & Miller, 1987). Therefore, these findings not only supported the fourth hypothesis which stated that SNSs have indirect effects on depression through self-esteem, but also indicate that other factors than socio-environmental factors have these effects on adolescents.

The fifth hypothesis in the study stated that with frequent use of SNSs, adolescents sleep fewer hours per night. The hypothesis was supported whereas results showed that Internet use and playing games on the Internet had significant effects on how many hours adolescents slept per night. On average adolescents in the study slept seven hours per night so

it is possible that those who used SNSs more slept fewer hours per night. Previous studies have shown that SNS use induces difficulties in sleep and lead to less overall sleep compared to non-users (Andreassen, 2015; Cao et al., 2011).

The sixth and final hypothesis stated that with more use of SNSs, adolescents experience more psychosomatic symptoms was supported. The predictor variables explained the most in the variance in psychosomatic symptoms. Of the SNS predictors, Internet use for web, games or chat rooms and the use of Facebook, Twitter, etc. had significant effects on psychosomatic symptoms. These results indicate that with more use of SNSs adolescents experience more symptoms accordingly with Cao et al. (2011) findings. They found that with problematic Internet use adolescents were more likely to suffer from psychosomatic symptoms (as well as other symptoms) than non-users.

The present study was not without limitations. First, all information in the study was obtained by self-reported questionnaire, which raises the question upon response bias and how truthfully participants answered the questionnaire. In future studies, researchers may consider obtaining information on the adolescents use from other sources, such as family members or peers, over a period of time. Information may be gathered with interviews as well to acquire more accurate knowledge. Second, although the questionnaire was rather recent (2013), the items used to measure adolescents SNS and Internet use were in some way out-dated. They included items that were only accessible on computers but in recent years most people use their smartphones or iPad to connect, therefore, the study most likely did not get estimates of adolescents' total SNS usage. Additionally, the social forums such as Facebook, Twitter, Instagram, etc. were all included in one item. It is important to keep these items separate when examining effects from social network sites. These limitations are important to have in mind for future research to get real estimates of adolescents overall usage. Third, the results from the path analysis showed that the strongest relations in the

model were the effects of self-esteem on depression. These results indicate that the model was quite weak, the predictors had weak effects on the two outcome variables, except for gender. Fourth, as previous studies, this study was not able to predict the cause and effect relations on adolescence mental and physical well-being. It is not certain that the SNS use had these effects on mental and physical well-being or the other way around where adolescents with low levels of mental and physical well-being used SNSs more.

The strengths of the study were the large sample size ($n = 2.070$) that is nationally representative of adolescents in Iceland. The received response rate from the ICSRA questionnaire was 75% from all high schools in Iceland, which is rarely the case in other studies. Finally, there was total anonymity for the participants in the study. It is important to continue to investigate social network site usage and the effects they have on adolescents whereas these multiple forums continue to grow, and other problematic psychological factors may relate to the use of them. Additionally, it is important to examine adolescents' smartphone use as well whereas the development of the SNSs is moving in that direction. Furthermore, longitudinal studies are recommended for future research as well as examining situational factors, social and peer influences, and gender differences alongside.

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Appendix A

Questionnaire

1. Ert þú strákur eða stelpa? Strákur Stelpa

2. Hvaða ár ert þú fædd(ur)?

1990 1991 1992 1993 1994 1995 1996 1997
 1998 Annað, árið _____

16. Hversu mikinn þátt tekur þú í félagslífi innan skólans þíns? Merktu aðeins í EINN reit.

Mjög mikinn	Mikinn	Í meðallagi	Lítinn	Nær engan
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

31. Hversu vel eiga eftirfarandi fullyrðingar við um þig? (Merktu í EINN reit í HVERJUM lið).

	Lýsir mér mjög vel	Lýsir mér nokkuð vel	Lýsir mér ekki nógu vel	Lýsir mér alls ekki
a) Þegar ég hugsa um hvernig ég muni líta út í framtíðinni er ég ánægð(ur)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Mér finnst ég oftast vera ófírið(ur) og óaðlaðandi	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Ég er ánægð(ur) með líkama minn	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) Ég er ánægð(ur) með þær líkamlegu breytingar sem átt hafa sér stað hjá mér undanfarin ár	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) Mér finnst ég vera sterk(ur) og hraust(ur)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

32. Hversu vel finnst þér eftirfarandi staðhæfingar eiga við um þig? (Merktu í EINN reit í HVERJUM lið).

	Á mjög vel við um mig	Á frekar vel við um mig	Á frekar illa við um mig	Á mjög illa við um mig
a) Mér finnst ég vera að minnsta kosti jafn mikils virði og aðrir	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Mér finnst ég hafa marga góða eiginleika	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Þegar allt kemur til alls sýnist mér ég vera misheppnaður/-heppnuð	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) Ég get gert hlutina jafn vel og flestir aðrir	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) Mér finnst ekki vera margt sem ég get verið stolt(ur) af	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f) Ég hef jákvæða afstöðu til sjálfs/sjálfrar mín	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g) Þegar allt kemur til alls er ég ánægð(ur) með sjálfa(n) mig	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
h) Ég vildi óska að ég bæri meiri virðingu fyrir sjálfum mér	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
i) Stundum finnst mér ég sannarlega vera til einskis nýt(ur)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
j) Stundum finnst mér ég einskis virði	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

33. Hversu oft varðst þú var/vör við eftirfarandi vanlíðan eða óþægindi síðastliðna 30 daga? (Merktu í EINN reit í HVERJUM lið).

	Nær aldrei	Sjaldan	Stundum	Oft
a) Höfuðverk	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Verk í maga	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Þú varst uppspennt(ur)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) Þú varst leið(ur) eða hafðir lítinn áhuga á að gera hluti	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) Þú hafðir litla matarlyst	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f) Þér fannst þú einmana	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g) Þú grést auðveldlega eða langaði til að gráta	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
h) Þú áttir erfitt með að sofna eða halda þér sofandi	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
i) Þú varst niðurdregin(n) eða dapur/döpur	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
j) Þú varst ekki spennt(ur) fyrir að gera nokkurn hlut	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
k) Þér fannst þú vera hægfara eða hafa lítinn mátt	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
l) Þér fannst framtíðin vonlaus	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Appendix B

Consent letter to parents



RANNSÓKNIR & GREINING Háskólanum í Reykjavík

Reykjavík 21. október 2013

Ágætu foreldrar / forráðamenn,

Í næstu viku er fyrirhugað að gera könnun á högum og líðan ungmenna í öllum framhaldsskólum á Íslandi. Könnun þessi er unnin af Rannsóknnum og greiningu samkvæmt samningi við mennta- og menningarmálaráðuneytið og rannsóknaráætlun *Ungt fólk* sem unnin hefur verið allt frá árinu 1992 í grunn- og framhaldsskólum landsins.

Rannsóknir & greining hefur sérhæft sig í rannsóknnum á ungu fólki og nær gagnagrunnur okkar allt aftur til ársins 1992. Upplýsingar úr rannsóknunum eru notaðar við stefnumótun í málefnum ungs fólks og eru grunnur að vinnu fjölmargra þeirra sem vinna að málefnum ungs fólks á Íslandi, hvort heldur sem er ráðuneyta, sveitarfélaga, skóla, félagssamtaka eða einstaklinga. Rannsóknirnar hafa verið lagðar fyrir meðal framhaldsskólanema á Íslandi allt frá árinu 1992 og mynda því samfellda heild yfir tíma. Þessi rannsókn meðal framhaldsskólanema er sú sjöunda í röðinni en hún hefur verið lögð fyrir að meðaltali á þriggja ára fresti undanfarin 20 ár.

Könnunin lýtur sem fyrr að því að kanna hagi og líðan ungmenna, félagslega þætti svo sem tengsl við foreldra og vini, íþróttir og tólmstundir, félagslíf, líðan, einelti, vímuefnanotkun, streitu, mataræði, nám, brottfallsáhættu, félagslega stöðu, svefn, lestur, andlega og líkamlega líðan, lestrarörðugleika, tölvunotkun, viðhorf til framtíðarinnar og fleira sem nýtist til að afla þekkingar um, og bæta hagi og líðan þessa aldurshóps.

Könnunin er með öllu nafnlaus og unnin samkvæmt reglum um persónuvernd. Þannig er ekki hægt að rekja nein svör til einstaklinga. Þegar nemendur hafa lokið við að fylla út spurningalistana eru þeir beðnir að setja þá í þar til gerð umslög og loka þeim vandlega. Listarnir eru svo sendir greiningaraðilum sem skrá upplýsingarnar án þess að geta með nokkru móti vitað hverjum þær tilheyra. Að skráningu lokinni er spurningalistunum eytt.

Samkvæmt venju upplýsum við foreldra og forráðamenn um fyrirlögnina og gefum þeim kost á því að óska eftir að börn þeirra taki ekki þátt. Einnig er nemendum sjálfum heimilt að ákveða að svara ekki spurningum ef þau svo kjósa. Kjósi foreldrar / forráðamenn að börn þeirra taki ekki þátt er best að hafa samband við Rannsóknir og greiningu eða viðkomandi skóla og láta vita. Verði þátttaka góð koma upplýsingarnar til með að skila mikilsverðum niðurstöðum, bæði hagnýtum og fræðilegum líkt og fyrri kannanir af þessu tagi hafa gert.

Ef nánari upplýsinga er óskað þá vinsamlega hafið samband við starfsfólk Rannsókna & greiningar með tölvupósti rannsoknir@rannsoknir.is eða í síma 599 6431.

Með vinsemd og virðingu
Starfsfólk Rannsókna & greiningar