

Screen Use and Depressive Symptoms among Adolescents in Sweden

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Background

Researchers in public health indicated that screen use could be a risk factor for depression among adolescents. Empirical results from different countries showed that a higher level of screen use was associated with a higher risk of experiencing depressive symptoms (Kremer et al., 2014; Maras et al., 2015).

In Sweden, whether screen use is associated with mental health among adolescents has been intensely debated in the public media in recent years. However, this debate has lacked support from empirical research. The aim of this study was to address this gap by examining the association between screen use and depressive symptoms among adolescents in Sweden.

Data and methods

Data used for the analysis came from the Swedish section of the Children of Immigrants: Longitudinal Survey in Four European Countries (CILS4EU) wave of 2011. Ethical approval was obtained from the relevant ethical review board prior to the data collection. Informed consent was obtained from all students and their parents or guardians prior to the survey (Kalter et al., 2013). The survey included non-immigrant and immigrant children and was designed to be generalizable to the general population of youth (Hjalmarsson & Mood, 2015). The final sample consisted of 3,186 adolescents in eighth grade (14-15 years old). Approximately half (51%) of the sample were girls.

Adolescents self-reported depressive symptoms by answering one question on how often they felt depressed. The answer categories were: never, rarely, sometimes, and often. In this study, we estimated adolescents' odds of feeling depressed often versus the lower levels of depressive symptoms. Screen use was indicated by four types of activities: social media use (i.e., chatting online or visiting social network sites such as Facebook), gaming alone (i.e., playing video or computer games alone), gaming in groups (i.e., playing video or computer games together with others), and watching TV. Adolescents

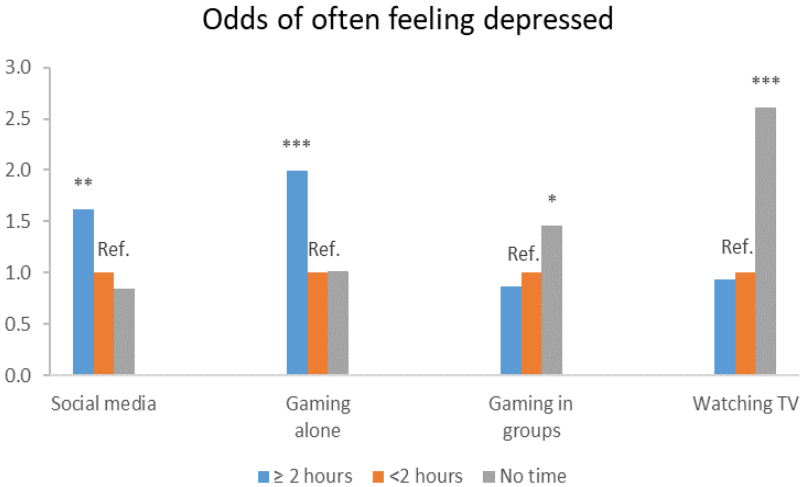
indicated how much time they usually spent on these activities on a typical school day. The answers were collapsed into three categories: no time, less than two hours, and two hours or more. The middle category, less than two hours, was used as the reference category in our analyses.

We applied logistic regression models to investigate the association between screen use and depressive symptoms. We controlled for smoking, parent education level, parent employment status, family ethnicity, family structure, and school type. We first performed the analysis in the total sample, and then we performed the same analysis in boys and girls separately.

Preliminary results

Our results (see Figure 1) showed that adolescents who spent two hours or more on social media ($p < .05$) or gaming alone ($p < .01$) had significantly higher odds of feeling depressed often than those who spent less than two hours on these activities. Adolescents who did not game in groups had slightly higher odds of often feeling depressed ($p < .10$) than those who spent less than two hours on this. Adolescents who did not watch TV also had significantly higher odds of often feeling depressed ($p < .01$) than those who watched TV for less than two hours.

Figure 1: Odds of often feeling depressed by time spent on different types of screen use, Sweden, 2011



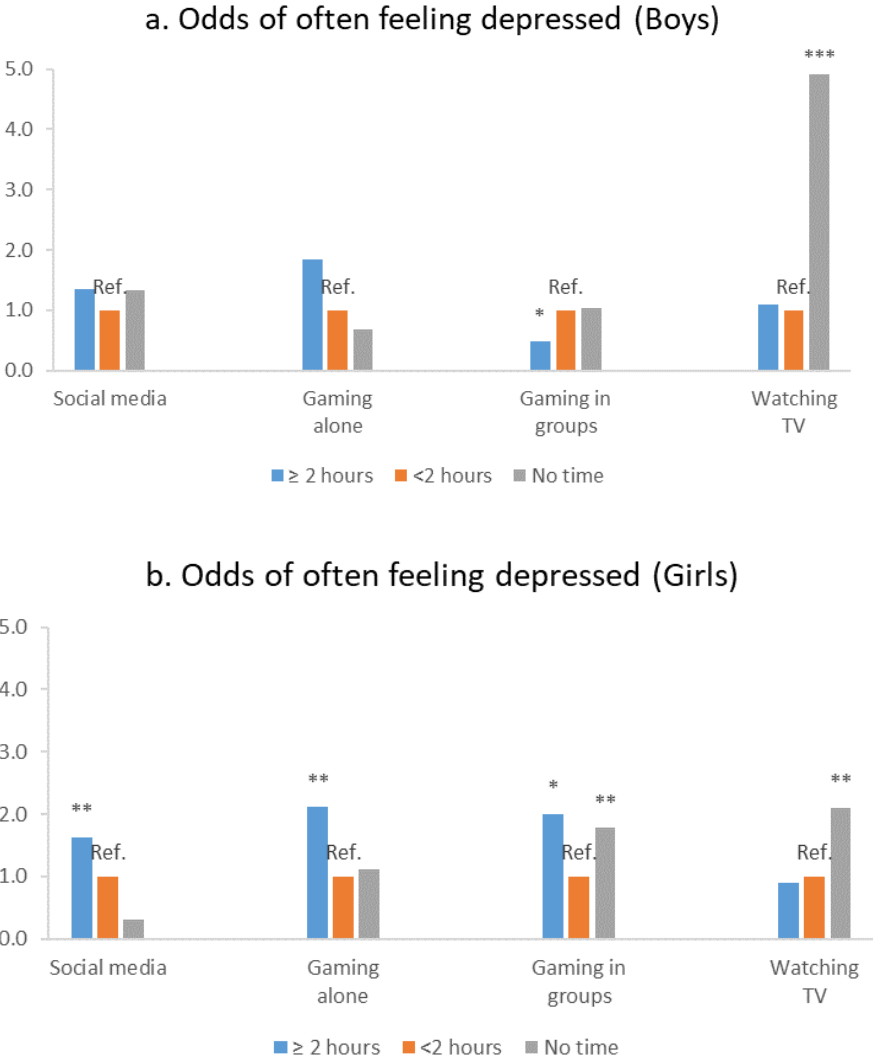
Note: Statistical significance: *** $p < .01$; ** $.01 < p < .05$; and * $.05 < p < .10$.
 Source: Authors' calculations based on CILS4EU, Sweden

To investigate how our results varied according to gender, we re-estimated the main effects models in boys and girls separately. Among boys only (see Figure 2a), time spent on social media or gaming alone were not associated with depressive symptom. Those who spent two hours or more gaming in groups had lower odds of often feeling depressed compared to those who spent less than two hours gaming in groups ($p < .10$). Among girls (see Figure 2b), those who spent two hours or more on social media ($p < .05$) and gaming alone ($p < .05$) had higher odds of often feeling depressed than those who spent less

than two hours on these activities. Girls who spent more than two hours gaming in groups ($p < .10$) as well as those who did not game in groups ($p < .05$) had higher odds of often feeling depressed compared to those who spent less than two hours on this. Among both boys and girls, those who did not watch TV had higher odds of often feeling depressed than those who watched TV.

We plan to run interaction models to examine whether there are any interactions between gender and type of screen use activity. These results will be finalized before May 15, 2020, the deadline for the final abstract for EPC 2020.

Figure 2: Odds of often feeling depressed by time spent on different types of screen use for boys (a) and girls (b), Sweden, 2011



Note: Statistical significance: *** $p < .01$; ** $.01 < p < .05$; and * $.05 < p < .10$.
 Source: Authors' calculations based on CILS4EU, Sweden

Conclusion and discussion

With the development of digital technology, screen use has become an increasingly integrated part of adolescents' daily life. In this study, we examined the association between screen use and depressive symptoms among adolescents, taking into account different types of screen use and time spent on screen use. Our results indicated that different types of screen use were differentially associated with depressive symptoms. Furthermore, associations between screen use and depressive symptoms differed between boys and girls. Our findings thus provide a nuanced view of the association between screen use and depressive symptoms, and provide empirical evidence that can inform the ongoing debate on screen use and mental health among adolescents in Sweden.

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