



# FACEBOOK ADDICTION IS ASSOCIATED WITH INSOMNIA AND POOR SLEEP QUALITY



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## Introduction

### Purpose of study

- The effect of inadequate sleep on cognitive functioning and physical health has received increased attention of late. A worldwide survey has shown the existence of a positive correlation between fewer hours of sleep and poor health (Steptoe et al., 2006).
- Given the importance of sleep, researchers have been exploring the factors that may contribute to sleep problems. Recent studies have suggested that Facebook addiction may be associated with inadequate sleep, both in terms of later bedtime (Andreassen, Torsheim, Brunborg, & Pallesen, 2012) and poorer sleep quality (Wolniczak et al., 2013). The purpose of this study was to examine this issue further, by testing the association between Facebook addiction and two well-established measures of sleep.

### Technology and sleep

- The amount of time invested in technology use and when during the day we use technology could have an impact on sleep (Gradisar et al. 2013). In addition, technology devices used for stimulating activities (such as videogame consoles, cell phones, and computers/laptops) in the hour before to bed are associated with higher ratings of difficulty falling asleep (Gradisar et al. 2013).
- Technology has also been shown to directly interrupt sleep: according to the 2011 Sleep in America Poll, 18-20% of people younger than 30 years old are awakened by texts or calls after lights out.

### Internet addiction

- A number of researchers have suggested that excessive use of technology and internet may be conceived as a behavioral addiction. Debate has arisen regarding what feature of technology is causing this addiction.
- Some popular technology-related addiction scales include the mobile-phone addiction (Choliz, 2010) and Internet addiction (Young, 1996; Beard, 2005).
- Internet addiction encompasses many aspects of internet use and it has been argued that it is unknown whether people get addicted to the platform or the content of the internet (Griffiths, 1999). To tease apart the specific factors that may impact sleep, it is important to examine a narrower construct than general internet addiction.
- Research has revealed that students classified as Internet-addicted reported more use of social functions than students considered non-addicted (Kesici & Sahin, 2009). Thus,
- some researchers have turned their attention to the impact of social networking on inadequate sleep.
- In recent research, social media both in terms of frequency (number of visits per week) and volume (number of total minutes per day) has been associated with sleep disturbance (Levenson, Shensa, Sidanu, Colditz, & Primack, 2016).
- Facebook use and sleep \* Facebook is one of the most broadly used social network platforms. Andreassen, Torsheim, Brunborg, and Pallesen (2012) found that Facebook use was associated with inadequate sleep as users reported a later bedtime.
- Facebook use also has been associated with reports of poorer sleep quality (Wolniczak et al., 2013).
- More specifically, it has been shown that those who are Facebook dependent have 1.3 times greater prevalence of poor sleep quality (Wolniczak et al., 2013).

### Hypotheses

- Facebook addiction will be positively correlated with insomnia.
- Facebook addiction will be negatively correlated with sleep quality.

## Methods

### Participants

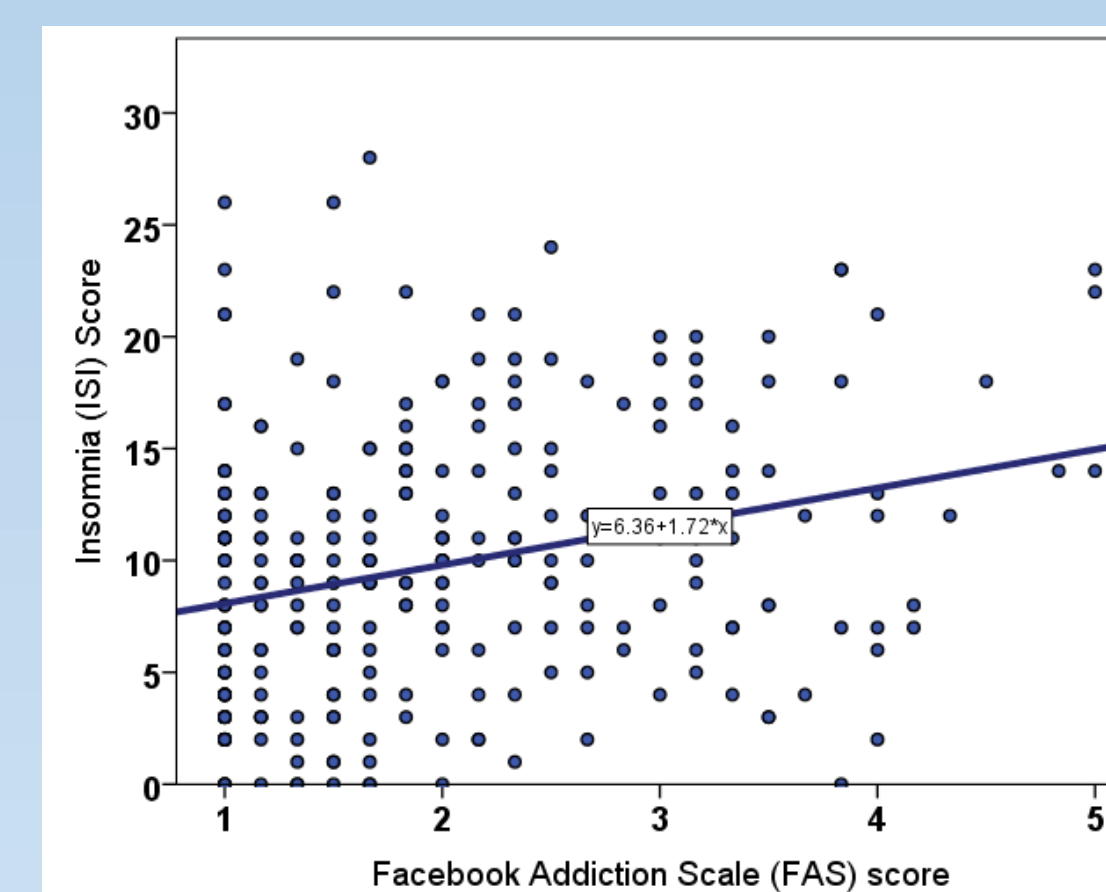
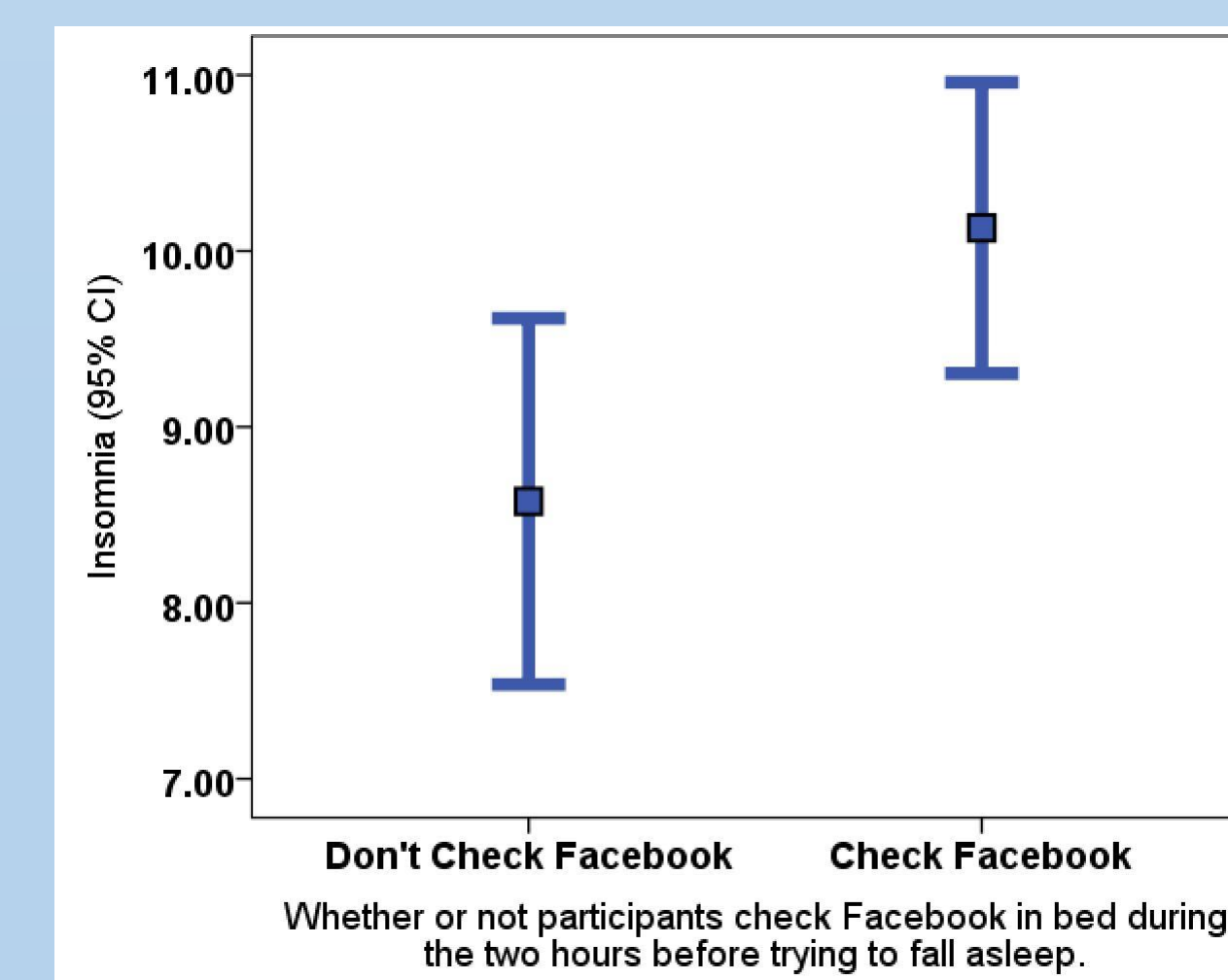
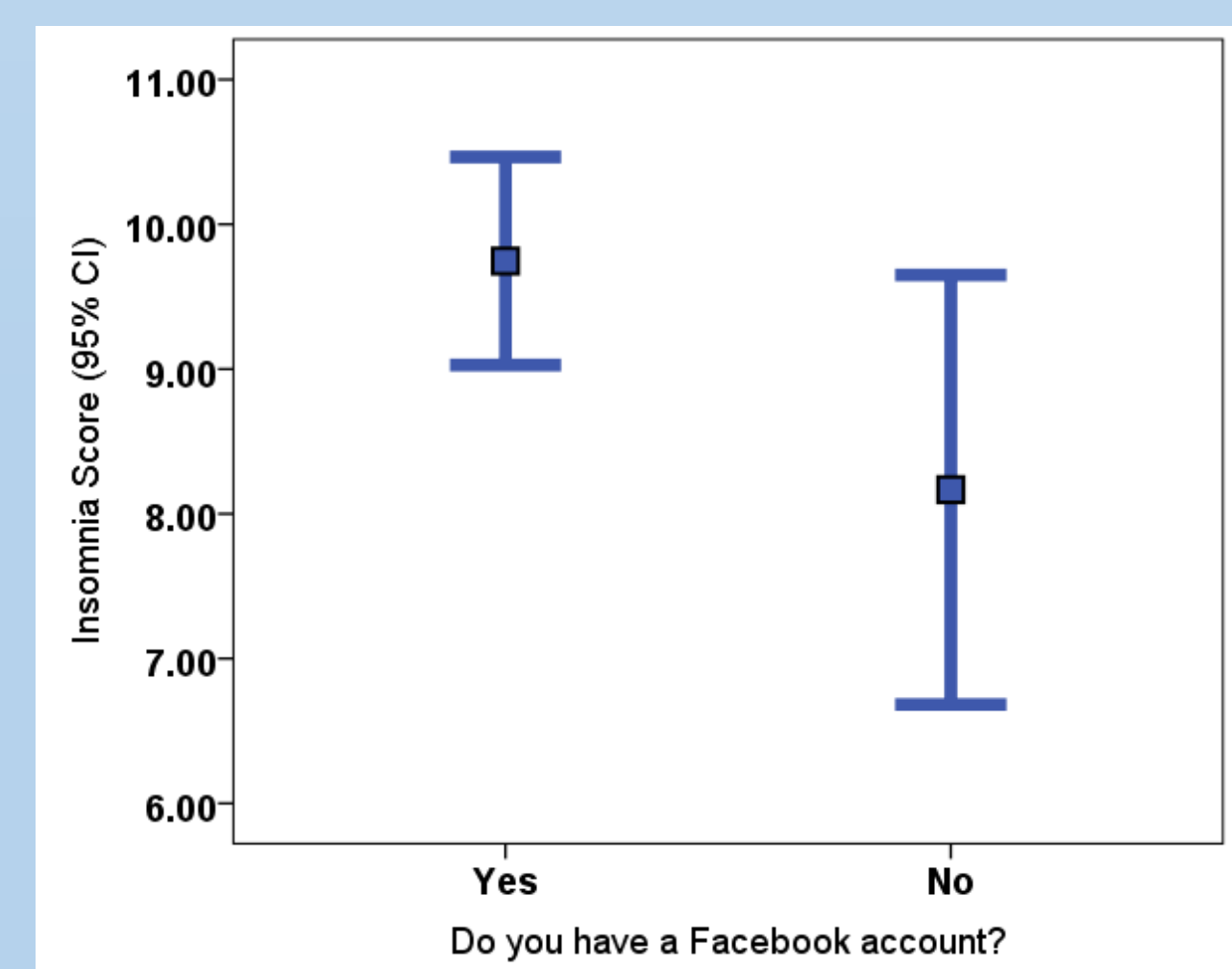
- Participants included 367 adults who completed an online survey. Because Facebook usage is affected by age, individuals who were 30 years or older were excluded from the analysis. The final sample included 326 participants, Mage = 21.5 (2.38) years.
- The large majority (93%) of participants classified themselves as Hispanic and 78% were female

### Measures

- Facebook Addiction** was measured using the Bergen Facebook Addiction Scale (BFAS; Andreassen et al. 2012). This scale comprise six items, one for each of the six core features of addiction: salience, mood modification, tolerance, withdrawal, conflict, and relapse (e. g. How often during the last year have you spent a lot of time thinking about Facebook or planned use of Facebook?). Items are scored on a Likert scale from 1 (Very rarely) to 5 (Very often) with higher scores indicating greater Facebook addiction.
- Insomnia** was assessed using the Insomnia Severity Index (ISI; Morin, 1993). The ISI is a self-report measure that assesses participants' perceptions of their insomnia. It includes seven items related to the extent of difficulties with sleep onset and sleep maintenance during the previous two weeks. The total scale score ranges from 0-28, with a cutoff score of 10 recommended for detecting insomnia cases in a community sample (Morin, Belleville, Bélanger, & Ivers, 2011).
- Sleep quality** was assessed via the Pittsburgh Sleep Quality Index (PSQI; Buysse, 1989). The PSQI consists of 19 questions and provides a global measure of sleep quality. The global PSQI score is based on seven components: subjective sleep quality, sleep latency, sleep duration, habitual sleep efficiency, sleep disturbances, use of sleeping medication and daytime dysfunction over the last month, each of which is weighted equally on a 0-3 scale. Scores on the PSQI range from 0 to 21 with higher scores indicating worse sleep quality.

## Results

- Individuals with Facebook accounts had significantly higher insomnia scores,  $M=9.75$  (6.02) than those without Facebook accounts,  $M=8.17$  (5.38), one-tailed  $t(323) = 1.78$ ,  $p = 0.04$ .
- Having a Facebook account was not associated with significantly poorer sleep quality, one-tailed  $t(321) = 1.24$ ,  $p > 0.05$ .
- Additionally, those who checked or posted to Facebook in bed within the 2-hour period before trying to go to sleep had significantly higher insomnia scores,  $M=10.13$  (5.90) than those who did not,  $M=8.58$  (5.95), one-tailed  $t(324) = 2.32$ ,  $p=0.01$ .
- Checking or posting to Facebook in bed was not associated with significantly poorer sleep quality, one-tailed  $t(322) = 1.41$ ,  $p=0.08$ .
- For individuals who had a Facebook account, Facebook addiction score was positively correlated with insomnia severity,  $r(272) = 0.28$ ,  $p < 0.001$  and negatively correlated sleep quality,  $r(271) = 0.13$ ,  $p = 0.02$



## Discussion

- Results support previous findings showing an association between Facebook addiction and poor sleep. Those who scored higher on Facebook addiction had greater insomnia and poorer sleep quality.
- In addition to the general association of poor sleep with Facebook addiction, we found that Facebook use in bed within the two hours prior to sleep was associated with greater insomnia. This suggests that the pre-sleep manifestation of this particular addiction might be a contributing factor to inadequate sleep.
- It is important to recognize that our cross-sectional design does not allow us to determine a causal relationship between Facebook use and inadequate sleep. While it is possible that Facebook addiction leads to poor sleep quality, it is also likely that people who have difficulty falling asleep may use Facebook as a means of distraction or relaxation.
- Some have argued against the usefulness of a Facebook addiction scale, suggesting either that it may encompass too many dissimilar activities (e.g., messaging, gaming, watching videos, etc.) to be considered a singular construct or that a more comprehensive measure of online social networking would be more appropriate (Griffiths, 2012). With the ever-shifting landscape of social networking apps, it is possible that Facebook use may not be a sufficient metric for online social networking behavior. A reliance on the measure of Facebook use may miss behavior that is similarly disruptive to sleep. Thus, studies examining the association between pre-sleep technology use (or pre-sleep social networking in particular) will need to adapt to the evolving technologies and ever-changing cultural preferences of the population of interest. For instance, a recent approach to measuring social media has consisted of operationalizing social media in terms of frequency (number of visits per week) and volume (number of total minutes per day) of usage of the most popular platforms (Facebook, Twitter, Instagram, etc.) (Levenson, Shensa, Sidanu, Colditz, & Primack, 2016). Recognizing that each measure is likely to have its own set of limitations and that establishment of an enduring measure may be impossible, research in this important area will remain challenging.
- At the current time, the Facebook Addiction Scale seems to be a reasonable approximation of online social media use and networking. In line with a number of other recent studies, our study showed that overuse of technology, specifically in relation to Facebook use, is associated with inadequate sleep. Whether or not this is a causal relationship remains to be established. Experimental manipulations of Facebook use, particularly use in bed, would help to clarify this issue.

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