Computers in Human Behavior 34 (2014) 23–27

Contents lists available at ScienceDirect

Computers in Human Behavior

journal homepage: www.elsevier.com/locate/comphumbeh

Research Report

Facebook: Social uses and anxiety

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ARTICLE INFO

Article history:
Available online 21 February 2014

Keywords:
Social anxiety
Social Facebook use
Anxiety on Facebook
Social compensation hypothesis

ABSTRACT

Research has shown inconsistent relationships between social anxiety and time spent on Facebook, possibly because Facebook's many activities vary in degree of social interactivity. We examined the relationships between social anxiety, anxiety on Facebook, and social Facebook use. A multiple regression predicting social Facebook use revealed an interaction. Participants with high anxiety on Facebook and high social anxiety reported more frequent social Facebook use than those with high anxiety on Facebook and low social anxiety. A second multiple regression predicting social anxiety showed a suppression effect, indicating that social Facebook use predicts social anxiety only once anxiety on Facebook has been accounted for. These findings suggest that anxiety on Facebook clarifies the relationship between social anxiety and social Facebook use.

1. Introduction

Facebook may provide opportunities for improved social interaction for people with high social anxiety, who often struggle in face-to-face social interactions (Leary & Kowalski, 1995). The social compensation hypothesis predicts that individuals with high social anxiety may perceive Facebook as a less anxiety-provoking avenue to social interaction (Fernandez, Levinson, & Rodebaugh, 2012; Sheldon, 2008) and compensate for poor face-to-face interactions online. Previous researchers testing this hypothesis have often predicted that socially anxious Facebook users will spend more time on the site than users with low social anxiety (Fernandez et al., 2012; Murphy & Tasker, 2011). This line of thinking is based on the observation that Facebook allows for social interaction without many of the physical aspects of face-to-face social interaction that those with social anxiety may particularly fear (e.g., eye contact, blushing, trembling) (Fernandez et al., 2012; Murphy & Tasker, 2011; Sheldon, 2008).

Previous research provides mixed evidence for the social compensation hypothesis. Murphy and Tasker (2011) found that social anxiety was positively correlated with time spent on Facebook and with perceived ease of communication on the site, lending some support for the social compensation hypothesis. Fernandez et al. (2012) found that social anxiety was not correlated with reported frequency of Facebook use or frequency of use observed from participants' Facebook profiles, providing some evidence against the social compensation hypothesis. Similarly, Baker and Oswald (2010) investigated the relationship between amount of time spent on Facebook and friendship quality across different levels of shyness. Shyness was not related to amount of time spent on Facebook, providing some evidence against the social compensation hypothesis. However, shy participants who reported high Facebook use did not report feeling more comfortable interacting with others in person because of Facebook, which could indicate that this group was motivated to use Facebook in order to compensate for discomfort experienced in face-to-face interactions.

Notably, the social compensation hypothesis appears to refer to what *motivates* those with high social anxiety to use Facebook, yet the studies reviewed above uniformly test frequency of use rather than what is motivating that use. It does not necessarily follow that more use indicates *compensation* with Facebook use, which we interpret as using Facebook for purposes of social interaction rather than engaging in face-to-face interaction. For example, Facebook's many features vary greatly in how social they are. Facebook users who primarily use features that are low in social interactivity (e.g. looking at others' status updates) may spend much time on the site but interact with others very little. It is difficult to view such increased use as compensatory any more than reading books or pursuing hobbies would be compensatory for individuals who fear social interaction.

Other studies point out that to understand the relationship between social anxiety and Facebook use, a more detailed measure of Facebook use and a direct measure of motivation for Facebook use may be necessary (Selfhout, Branje, Delsing, ter Bogt, & Meeus,

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http://dx.doi.org/10.1016/j.chb.2014.01.020
0747-5632/

2009; Sheldon, 2008). Sheldon (2008) found that unwillingness to communicate in face-to-face interactions was not correlated with amount of time spent on Facebook, providing some evidence against the social compensation hypothesis. However, people with high anxiety were more likely than those with low anxiety to report using Facebook to pass the time and to feel less lonely, indicating that level of anxiety may affect motivations for Facebook use rather than amount of use. Selfhout et al. (2009) examined adolescent instant messaging and web surfing behaviors in relation to depression, social anxiety, and friendship quality over two time points. Adolescents who reported low friendship quality and high frequencies of instant messaging at Time 1 were less likely to be depressed at Time 2. Conversely, those with low friendship quality who used the Internet primarily for surfing rather than instant messaging at Time 1 were more likely to be depressed and socially anxious at Time 2. These findings suggest that if people high in social anxiety primarily use Facebook to pass time, they may later feel more anxious or depressed, whereas if they use it for social interaction purposes, they may later feel less anxious or depressed. These findings also highlight the possibility that a Facebook use measure that differentiates between socially interactive and socially passive use may help clarify the relationship between social anxiety and Facebook use.

1.1. The present study

In the present study, we elected not to focus on time spent on the site for several reasons. First, as highlighted by results of Sheldon (2008) and Selfhout et al. (2009), amount of time spent on Facebook does not reflect which features of Facebook individuals are using while they are logged on, nor their motivations for logging on. Furthermore, it is unclear if Facebook users are able to accurately report how much time they spend on the site. In one recent study, students reported logging onto Facebook many times throughout the day for brief periods of time—before they got out of bed, between activities (from their mobile devices), and while they worked on their computers (Bornoe & Barkhuus, 2011). Because Facebook logons can be frequent and brief, we are pessimistic about the likelihood of participants being able to report time spent on the site with any precision.

The present study was designed to test two hypotheses, via a specific measure of relative frequency of *social Facebook use* (use of specific, highly socially interactive features of the site). First, we predicted that those with high social anxiety would report less frequent social Facebook use than those with low social anxiety. That is, we expected that social anxiety would decrease use of the Facebook features that would most effectively compensate for face-to-face social interactions. This prediction was made in light of the mixed findings for the social compensation hypothesis and because several of the correlates of social anxiety could be elicited by social Facebook use, including fear of positive and negative evaluation (Rodebaugh, Weeks, Gordon, Langer, & Heimberg, 2012), anticipatory fear, and desire to avoid social situations (Leary & Kowalski, 1995).

Second, we predicted that those with high social anxiety would report higher *anxiety on Facebook* (i.e., anxiety associated with social Facebook use), than those with low social anxiety. To our knowledge, no previous studies have assessed social anxiety experienced when using Facebook to interact with others; accordingly, we developed a new measure to assess Facebook-centric social anxiety. Finally, we tested interactions between variables because a lack of zero-order relationship could mask significant interaction effects. Understanding the relationship between social anxiety experienced in person and on Facebook would help put into context the relationship between social anxiety and social Facebook use.

2. Materials and methods

2.1. Participants

Two hundred sixteen Facebook users participated in this study. All potential participants received an email that contained the link to an online survey on Surveymonkey.com and basic information about the study. Participants were recruited from the Washington University Volunteer for Health participant pool (164 invitations) via email and from the principal investigator's (PI's) email contact history (85 invitations). Individuals with prior knowledge about the study (e.g., its hypotheses) were not invited to participate. Participants were invited to forward the recruiting email to others who may be interested. Thus, some of these participants may have forwarded the email to others. The email containing the link to the online survey informed participants that they could enter into a drawing for $50 upon completion of the survey.

The sample consisted of 185 women and 31 men. The average age of the sample was 32.2 years (SD = 12.43), ranging from 18 to 69 years. The sample was 83.3% White, 6.5% Black, 3.7% Multiracial, 2.3% Hispanic, 1.9% Asian, .5% African, .5% American Indian or Alaskan Native, .5% Arab, and .5% Pacific Islander. The sample consisted of 31.5% undergraduate students, 12.0% graduate students, and 55.6% were not students. The average amount of schooling completed was 15.4 years (SD = 2.31), ranging from 11 to 23 years.

2.2. Material

2.2.1. Facebook Questionnaire (FBQ).

The FBQ was specifically designed to measure frequency of use of socially interactive features of Facebook (please see Table 1), rather than features that are non-social (e.g. looking at others' status updates). Three items that are less obviously social in nature (*I change/update/check my profile, I look at recently updated statuses,* and *I look through pictures of my friends*) have been previously shown to correlate highly with overall measures of Facebook use and were initially included to increase the reliability of this new measure (Fernandez et al., 2012). However, as the 10-item measure did not show improved internal consistency (α = .86) from the 7-item measure (α = .86), items 8–10 were excluded from further analysis. Participants rated frequency of use on a seven-point Likert scale (1 = *about once a month or less*, 7 = *many times per day*).

2.2.2. Social Interaction Anxiety Scale and social phobia scale-12 (SIAS-SPS-12).

The SIAS and SPS are designed to measure two closely related aspects of social anxiety, social interaction anxiety, and fear of public scrutiny (Mattick & Clarke, 1998). Whereas the SIAS measures anxiety experienced while initiating or maintaining social interactions, the SPS assesses anxiety experienced in performance situations in which the individual might be scrutinized (Peters, Sunderland, Andrews, Rapee, & Mattick, 2012). The SIAS-6 and SPS-6 are each 6-item shortened versions of the 20-item original scales. Items are rated on a 5-point Likert scale (0 = *Not at all characteristic or true of me*, 4 = *Extremely characteristic or true of me*). Peters et al. (2012) report high correlations between the short and long versions of the SIAS (r = .88, p < .01) and SPS (r = .92, p < .01) and good construct validity for these shortened versions as well. The SIAS-6 and SPS-6 were strongly correlated in the present study (r = .75, p < .001) and were combined to create the SIAS-SPS-12 to obtain an overall measure of social anxiety.

2.2.3. Facebook-Social Interaction Anxiety Scale (F-SIAS)

The F-SIAS is a seven-item scale designed to measure anxiety on Facebook, social anxiety symptoms experienced while using the