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Original article

# Internet use, Facebook intrusion, and depression: Results of a cross-sectional study

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ABSTRACT

Facebook has become a very popular social networking platform today, particularly among adolescents and young adults, profoundly changing the way they communicate and interact. However, some reports have indicated that excessive Facebook use might have detrimental effects on mental health and be associated with certain psychological problems. Because previous findings on the relationship between Facebook addiction and depression were not unambiguous, further investigation was required. The main objective of our study was to examine the potential associations between Internet use, depression, and Facebook intrusion. A total of 672 Facebook users took part in the cross-sectional study. The Facebook Intrusion Questionnaire and the Center for Epidemiologic Studies Depression Scale were used. For collecting the data, the snowball sampling procedure was used. We showed that depression can be a predictor of Facebook intrusion. Our results provides additional evidence that daily Internet use time in minutes, gender, and age are also predictors of Facebook intrusion: that Facebook intrusion can be predicted by being male, young age, and an extensive number of minutes spent online. On the basis of this study, it is possible to conclude that there are certain demographic – variables, such as age, gender, or time spent online – that may help in outlining the profile of a user who may be in danger of becoming addicted to Facebook. This piece of knowledge may serve for prevention purposes.


## 1. Introduction

For the first time, the term "Internet addiction" was used as a prediction in 1995 by Goldberg [14]. Nowadays, this problem has become a reality [29,9,30]. Internet addiction is defined as a loss of control over Internet use [30]. It can be understood in the light of behavioral addiction criteria [26]. We can consider this addiction not only in general terms but also in terms of one aspect of the Internet, such as social networking sites [11,2], cybersex [6,20], online shopping [19], or cyber gaming [32].

Addiction to social networking sites may be treated as a subtype of Internet addiction [5]. Internet addiction seems to be more general concept. To better understand behavioral addiction connected with media use, it is justified to distinguish between addiction to different types of Internet content (e-gambling, one-line sex, or SNSs) rather than analyze addiction to Internet in general [2]. Considering the increasing number of participants – Facebook has an average of over 829 million daily active users [12] – and the increasing amount of time spent using it [28], the problem is increasingly relevant and should be more profoundly investigated.

In the literature, there is a term "Facebook intrusion," coexisting with the term Facebook addiction. These terms cover a similar subject area and can be used interchangeably, except that in Facebook intrusion, the aspect of relations with others is stressed more strongly. Facebook intrusion refers to the deep engagement in Facebook and how it intrudes on daily life. It can be defined as excessive involvement in Facebook, disrupting day-to-day activities and interpersonal relationships [11]. The authors mention three aspects of this phenomenon, namely withdrawal, relapse and reinstatement, and euphoria. People who are strongly involved in Facebook feel distress when they cannot stop using it. What is more, they have unsuccessfully attempted to reduce Facebook use. They also feel a connection with people who use Facebook [11]. Previous studies have shown that Facebook addiction is related to psychological variables [28]. For example, in a Turkish study, it was concluded that Facebook addiction can be a mediator between subjective vitality and subjective happiness

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[31]. Facebook intrusion was also related to dissatisfaction with relationships [11].

A large body of research reported in the literature shows that Internet addiction often co-occurs with other disorders, such as depression, loneliness, sexual dysfunction, or other addictions [7,3,22]. There is no consensus on whether depression is an effect or the cause of Internet addiction. Depression is characterized by two symptoms: anhedonia and depressed mood. Stress also plays a crucial role in the etiology of depression [4]. Negative comparison of oneself with others is connected with depression symptoms [13]. Young and Rodgers [34] argue that a depressive person, with low self-esteem, a fear of rejection, low motivation, and a high need for acceptance by others, is more likely to use the Internet dysfunctionally.

Koc and Gulyagci [17] showed that severe depression, anxiety, and insomnia can be positive predictors of Facebook addiction among Turkish students. In Taiwan, it was found that self-inferiority and depressive character can be positive predictors of Facebook addiction [24]. Moreover, a different study conducted among Turkish hemodialysis patients indicated that having a Facebook account was related to a lower level of depression [1]. This can suggest that a Facebook account can be helpful in coping with disease. On the other hand, some studies yielded different results and found no relationship between depression and social networking [24]. On the basis of the literature, we assumed that Internet intrusion would be related to depression and daily Internet use time in minutes.

The following hypotheses were posed:

- H1: variables such as gender, age, and time spent on Internet activities are related to Facebook intrusion;
- H2: there is a statistically significant relationship between depressive symptoms and Facebook intrusion.

## 2. Methods

### 2.1. Participants and procedure

The sample consisted of 672 individuals; 65% of the participants were women. They were all native speakers of Polish. The mean age of the participants was M = 27.53 years (SD = 12.03 years; range: from 15 to 75 years). In the sample, 32% came from the countryside, 12.9% from small towns of up to 20,000 inhabitants, 20.9% from medium-sized towns (20–99 thousand inhabitants), 19% from large towns (100–500 thousand inhabitants), and 14.8% from cities of over 500,000 inhabitants. The participants were Facebook users and they received no remuneration. The snowball sampling procedure was used. The link to the study was posted on Facebook and visitors were asked to share it to the their profiles for friends.

### 2.2. Instruments

The participants completed two questionnaires and, additionally, they answered questions about their gender, age, and daily Internet use time in minutes. The study was carried out between September and November 2014. We used the Polish versions of the measures. In both cases, the back translation procedure was applied. Previous results obtained using the Polish version of these scales generally supported the validity of the questionnaires (Blachnio and Przepiorka, unpublished data). All the variables had normal distribution.

Facebook Intrusion Questionnaire, developed by Elphinston and Noller [11], translated into Polish by Blachnio and Przepiorka, (unpublished data), is based on behavioral addiction components and on a scale measuring phone involvement. It consists of eight items (e.g., *I have been unable to reduce my Facebook use*) measuring the relations between the tendency to Facebook involvement and eight aspects of behavioral addiction, namely: cognitive salience, behavioral salience, interpersonal conflict, conflict with other activities, euphoria, loss of control, withdrawal, as well as relapse and reinstatement. The items are rated on a 7-point Likert scale from 1 (*strongly disagree*) to 7 (*strongly* agree). In the present study, Cronbach's $\alpha$ was 0.92.

The Center for Epidemiologic Studies Depression Scale (CES-D) [27,10] consists of 20 items measuring the level of depression (e.g., *I had trouble keeping my mind on what I was doing. I had a crying spell*). The participants are asked how often they have felt in the described ways during the past week. They indicate their responses on a 4-point scale: rarely or none of the time (less than 1 day), some or a little of the time (1–2 days), occasionally or a moderate amount of time (3–4 days), most or all of the time (5–7 days). In the present study, Cronbach's $\alpha$ was 0.89.

## 3. Results

The descriptive statistics (mean and standard deviations of variables) for the total group are presented in Table 1. Additionally, Pearson's $r$ correlations between variables were computed. Daily Internet use time was found to be positively related to Facebook intrusion ($r = 0.242$, $P < 0.001$). Facebook intrusion was positively related to depression ($r = 0.45$, $P \leq 0.001$). There was no relation between daily Internet use time and depression ($r = 0.08$, $P = 0.08$).

Table 2 provides information on the results of regression analyses for Facebook intrusion. Hierarchical multiple regression analyses were performed to assess the impact of gender, age, daily Internet use time in minutes, and depression on Facebook intrusion.

In the first step, the demographic variables (gender and age) were entered, followed in the second step by daily Internet use time and in the third step by depression. The results indicated that the demographic variables account for a statistically significant proportion of the variance in Facebook intrusion, R2 = 0.12, $P < 0.000$; F(6, 633) = 42.489. The entry of the daily Internet use time variable at Step 2 resulted in a statistically significant increment in the explained variance, R2 = 0.16, $P < 0.000$; F(1, 632) = 33.535. Also, the entry of the depression variable in the next step increased the level of explained variance, R2 = 0.31, $P < 0.000$; F(1, 631) = 134.734. Gender and age were found to have significant negative beta weights ($\beta = -0.08$, $P = 0.007$ and $\beta = -0.19$, $P < 0.001$, respectively), while daily Internet use time and depression had significant positive beta weights ($\beta = 0.20$, $P < 0.001$ and $\beta = -0.19$, $P < 0.001$).

## 4. Discussion

The main aim of our study was to answer the question of whether depression and daily Internet use time was related to Facebook intrusion. The results of this study show that depression is a predictor of Facebook intrusion. This result is consistent with that of a previous study [18]. However, it explores different relations that those described in other studies [24].

**Table 1**
Means and standard deviations of the variables ($n = 672$).

| | M | SD |
|---|---|---|
| 1. Daily Internet use time in minutes | 4.56 | 3.24 |
| 2. Facebook intrusion | 2.74 | 1.44 |
| 3. Depression | 3.60 | 1.77 |