EXTENDED ABSTRACT

Influence of depressive symptoms on the use of Facebook

Antonia Brunet & Sebastian Scherr

Over the last decades, mental disorders continued to substantially contribute to the global burden of disease (Wittchen & Jacobi, 2005). The point prevalence of depressive disorders in the German population aged 18 to 65 is estimated to be around 3 million people. Moreover, almost 80 percent of the German general population aged over 14 years regularly access the internet and 46 percent of them have an account on at least one Social Networking Site (SNS) (Van Eimeren & Frees, 2014). These people regularly spend an average of 63 minutes per day on SNS, primarily for posting messages, individual communication or chatting, as well as informing themselves about latest news in their social environment (Busemann, 2013).

Within communication research, depression can be regarded not only as a relevant disease but also as a relevant individual predisposition, which influences the general activity level of individuals as well as the individual media use (Jin, 2013; Scherr, 2016). The present study explores the influence of depression on the individual use of Facebook considering moderating effects of the personality traits extraversion and neuroticism as these have been linked with both a specific use of SNS (Caci et al., 2014; Kneidinger, 2010) and depressive symptoms (Jylhä & Isometsä, 2006; Nezlek et al., 2011).

Depression and the use of Facebook

Motives for using Facebook have been investigated from a uses-and-gratifications as well as from a social networks approach perspective (Papacharissi & Mendelson, 2011; Smock et al., 2011) which integrate different motives for using Facebook, psychosocial predispositions, structural factors of SNS and social capital. Moreover, following self-determination theory (SDT; Deci & Ryan, 2000; Ryan & Deci, 2000), we assume that individuals show intrinsic motivation to use Facebook to compensate especially reduced social relatedness due to depressive symptoms. This is in line with the findings of Sheldon, Abad and Hinsch (2011) who found that the use of Facebook enhances perceived social relatedness and compensates deficits in social relationships in the offline life that may be especially activated through depressive symptoms such as lower activity levels and social isolation. A study by Moreno et al. (2011) suggests that depressive symptoms are correlated with more frequent updating of Facebook profiles and hence, we hypothesize that more depressive symptoms lead to more status updates on Facebook (H1). According to Jin (2013), lonely users had fewer friends on SNS and

they showed less of an overlap between their Facebook friends and their friends in real life. Loneliness was negatively correlated with communication activities but was positively correlated with negative postings. Therefore, our second hypothesis postulates that more depressive symptoms are correlated with more negative postings (H2).

Depression and personality traits

Drawing on the Big Five personality traits (Asendorpf & Neyer, 2012), this study especially focuses on the personality traits extraversion and neuroticism, as existing research suggests that depressive tendencies are positively correlated with neuroticism and are negatively correlated with extraversion (Jylhä & Isometsä, 2006). Other research suggests that neuroticism is associated with more postings on the Facebook wall and more time daily spent on Facebook (Ross et al., 2009; Ryan & Xenos, 2011). On the other hand, Moore and McElroy (2012) found that extraversion is associated with more friends on Facebook and more extraverted people also spend more time on the SNS (Wilson, Fornasier, & White, 2010). As the joint influences of depression and personality traits such as extraversion and neuroticism have not been investigated intensively, we formulate two research questions about the moderating influences of personality traits on the relationship between depression and the specific use of Facebook:

RQ1: Is there empirical evidence for moderating influences of personality traits such as neuroticism and extraversion on the influence of depression on the motives of using SNS and the time spent on such websites?

RQ2: Is there empirical evidence for moderating influences of personality traits such as neuroticism and extraversion on the influence of motives for using SNS on the time spent on such websites?

Method

Data were collected using an online survey from April to May 2015. Data analysis has been conducted using IBM SPSS Statistics Version 23.0 and the PROCESS Macro (Hayes, 2013) to test for moderating effects. The total sample size was $N = 510$ (74% female; $M = 28.7$ years, $SD = 10.0$; 85% high school degree or higher).

Depressive symptoms. We used the PHQ-9 to measure depressive symptoms within the last two weeks (Gräfe et al., 2004; Gilbody et al., 2007). Participants were asked to indicate to what degree they were experiencing each of the nine depressive symptoms on a four-point scale ranging from 0 "not at all" to 3 "almost every day". The nine items were combined into an index ($M = 6.7$, $SD = 5.7$, Cronbach's α = .90) that was categorized as suggested by the PHQ-9 manual (sum scores < 5: no depressive symptoms; 5–10: mild depressive symptoms; 10–14: mediocre depressive symptoms; 15–19: highly developed depressive symptoms; 20–27: severe depressive symptoms).

Time spent on Facebook. We measured the daily time spent on Facebook on a five-point scale and participants with higher depression scores spent slightly more time on facebook ($r = .16$, $p < .001$).

Motives for using Facebook. In accordance with Ellison et al. (2006) we used 12 items to measure different motivations for using Facebook. Applying principal axis factor analysis, the study yielded three mean index variables "*use of Facebook for entertainment/distraction*", "*search for social contacts*", and "*maintaining social contacts*".

Personality traits. Neuroticism ($M = 11.5$, $SD = 4.0$) and extraversion ($M = 13.3$, $SD = 4.1$) were measured using a short version of the Big Five Inventory (BFI-K; Rammstedt & John, 2005).

As covariates we measured whether the last status update was posted following positive or negative events. 320 participants (37.3%) posted their last status updates referring to a positive event, 24 participants (4.7%) in the course of a negative event. Moreover, the number of Facebook friends ($M = 283.0$, *Mdn* = 215; *SD* = 264.1) was captured.

Results

Although depressive symptoms have been shown to be associated with reduced activity levels, the participants of the present study showed a slightly more intensive use of the SNS. Moreover, posting status updates especially for negative reasons showed to be more frequent when more depressive symptoms were present, as opposed to less postings for positive reasons. The motives searching for social contacts and entertainment/distraction were more important for participants with higher depressive symptoms as opposed to maintaining social contacts, which showed to be mostly independent. The moderating influences of extraversion and neuroticism were strongest for the motives for using Facebook and were stronger for neuroticism as compared to extraversion. There were no substantial influences of personality traits on the duration of using Facebook. Extraversion showed to influence the motives entertainment/distraction and searching for social contacts, which, in turn, indirectly led to an increase of the total time spent on the SNS. No such indirect effects were found for neuroticism. Taken together, future studies should take a closer look at joint effects of depressive symptoms and personality traits within media use studies.

References

Asendorpf, J. B. & Neyer, F. J. (2012). *Psychologie der Persönlichkeit* [Psychology of personality] (5., vollständig überarbeitete Aufl.). Berlin: Springer.

Busemann, K. (2013). Ergebnisse der ARD/ZDF-Onlinestudie 2013: Wer nutzt was im Social Web? [Results of the ARD/ZDF online study 2013: Who is using what on the social web?] *Media Perspektiven, 7–8*, 391–399.

Caci, B., Cardaci, M., Tabacchi, M. E., & Scrima, F. (2014). Personality variables as predictors of facebook usage. *Psychological Reports: Relationships & Communications, 114(2)*, 528–539.

Deci, E. L., & Ryan, R. M. (2000). The „what" and „why" of goal pursuits: Human needs and the self-determination of behavior. *Psychological Inquiry, 11,* 227–268.

Ellison, N. B., Steinfield, C., & Lampe, C. (2006). Spatially bounded online social networks and social capital: The role of Facebook. *Annual Conference of International Communication Association ICA in Dresden,* 1–37.

Gilbody, S., Richards, D., Brealey, S., & Hewitt, C. (2007). Screening for depression in medical settings with the patient health questionnaire (PHQ): A diagnostic meta-analysis. *Journal of General Internal Medicine, 22(11),* 1596–1602.

Gräfe, K., Zipfel, S., Herzog, W., & Löwe, B. (2004). Screening psychischer Störungen mit dem „Gesundheitsfragebogen für Patienten (PHQ-D)" – Ergebnisse der deutschen Validierungsstudie [Screening mental disorders using the PHQ-D]. *Diagnostica, 50(4),* 171–181.

Hayes, A. F. (2013). *The PROCESS macro for SPSS and SAS.* Retrieved from http://www.processmacro.org

Kneidinger, B. (2010). *Facebook und Co. Eine soziologische Analyse von Interaktionsformen in Online Social Networks* [Facebook and Co.: A sociological analysis of interactions within social network sites]. Wiesbaden: Springer VS.

Jin, B. (2013). How lonely people use and perceive Facebook. *Computers in Human Behavior, 29,* 2463–2470.

Jylhä, P., & Isometsä, E. (2006). The relationship of neuroticism and extraversion to symptoms of anxiety and depression in the general population. *Depression and Anxiety, 23,* 281–289.

Moore, K. & McElroy, J. C. (2012). The influence of personality on Facebook usage, wall postings, and regret. *Computers in Human Behavior, 28,* 267–274.

Moreno, M. A., Jelenchick, L. A., Egan, K. G., Cox, E., Young, H., Gannon, K. E., & Becker, T. (2011b). Feeling bad on Facebook: Depression disclosures by college students on a social networking site. *Depression and Anxiety, 28,* 447–455.

Nezlek, J. B., Schütz, A., Schröder-Abé, M., & Smith, V. C. (2011). A cross-cultural study of relationships between daily social interaction and the five-factor model of personality. *Journal of Personality, 79(4),* 811–840.

Papacharissi, Z., & Mendelson, A. L. (2011). Toward a new(er) sociability: Uses, gratifications, and social capital on Facebook. In S. Papathanassopoulos (Ed.), *Media perspectives for the 21st century* (pp. 212-230). London: Routledge.

Rammstedt, B., & John, O. P. (2005). Kurzversion des Big Five Inventory (BFI-K): Entwicklung und Validierung eines ökonomischen Inventars zur Erfassung der fünf Faktoren der Persönlichkeit [Short version of the Big Five Inventory (BFI-K): Development and validation of a parsimonious inventory for measuring five personality traits]. *Diagnostica, 51(4),* 195–206.

Ross, C., Orr, E. S., Sisic, M., Arseneault, J. M., Simmering, M. G., & Orr, R. (2009). Personality and motivations associated with Facebook use. *Computers in Human Behavior, 25,* 578–586.

Ryan, R. M., & Deci, E. L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist, 55,* 68–78.

Ryan, T. & Xenos, S. (2011). Who uses Facebook? An investigation into the relationship between the Big Five, shyness, narcissism, loneliness, and Facebook usage. *Computers in Human Behavior, 27,* 1658–1664.

Scherr, S. (2016). *Depression – Medien – Suizid: Zur empirischen Relevanz von Depressionen und Medien für die Suizidalität [Depression – media – suicide: On the empirical relevance of depression and media for suicidality]*. Wiesbaden: Springer VS.

Sheldon, P. (2008). The relationship between unwillingness-to-communicate and students' Facebook use. *Journal of Media Psychology, 20(2)*, 67–75.

Smock, A. D., Ellison, N. B., Cliff, L., & Wohn, D. Y. (2011). Facebook as a toolkit: A uses and gratification approach to unbundling feature use. *Computers in Human Behavior, 27*, 2322–2329.

Van Eimeren, B., & Frees, B. (2014). Ergebnisse der ARD/ZDF-Onlinestudie 2014: 79 Prozent der Deutschen online – Zuwachs bei mobiler Internetnutzung und Bewegtbild [Results of the ARD/ZDF online study 2014: 79% of the German population online —more frequent use of mobile internet use for moving images]. *Media Perspektiven, 7–8*, 378–395.

Wittchen, H.-U., & Jacobi, F. (2005). Size and burden of mental disorders in Europe: A critical review and appraisal of 27 studies. *European Neuropsychopharmacology, 15*(4), 357–376.

Wilson, K., Fornasier, S., & White, K. M. (2010). Psychological predictors of young adults' use of social networking sites. *Cyberpsychology, Behavior and Social Networking, 13*(2), 173–177.