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Low empathy is associated with problematic use of the Internet: Empirical evidence from China and Germany

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ABSTRACT

As empathy has not been investigated in the context of problematic use of the Internet, we conducted a study to test for a potential link. In samples from China (N = 438) and Germany (N = 202), two self-report measures for empathic behavior and one self-report measure for problematic Internet use (PIU) were administered in adolescents/students. Across both cultures lower empathy was associated with more PIU. The present study underlines the importance to take into account empathy related questionnaires for a better understanding of Internet overuse in the future.

1. Introduction

The widespread use of the Internet helped people worldwide to connect, communicate and get information. Although the Internet made many things easier, a rising number of people, in particular adolescents (Cao and Su, 2007; Kaltiala-Heino et al., 2004), report problems in limiting their Internet use (IU) (Ko et al., 2012). Problematic IU (PIU), often coined Internet addiction (IA), is a growing problem in society, although there are some controversies concerning the amount of affected users (e.g., Widyanto and Griffiths, 2006). Many efforts have been made to explore causes and consequences of PIU.

One research endeavor to illuminate the case of PIU stems from personality psychology, whereas personality traits are investigated as vulnerability or resilience factors for the development of PIU. Although most studies are merely correlational, they give some insights into the relationship between personality and PIU. Armstrong et al. (2000) investigated the association of PIU to sensation seeking as well as low self-esteem and found the latter to be a good predictor for PIU. Ko et al. (2006) took a look at the association of PIU to the tridimensional personality concept by Cloninger et al. (1993) and found higher novelty seeking, higher harm avoidance, and lower reward dependence in addicted users, a finding which could be replicated in another sample (Ko et al., 2010). Other studies suggest the importance of the character trait self-directedness stemming also from Cloninger's biosocial theory of personality (Cloninger et al., 1993) for a better understanding of PIU (Montag et al., 2011; Sariyska et al., 2014). Here, low self-directedness has been shown to be a better predictor for PIU than neuroticism (Montag et al., 2010). Self-directed humans tend to be satisfied with their personality and handle issues in every day life successfully. This construct is also related to high conscientiousness and low tendencies to procrastinate. A detailed overview on the personality literature (including genetic aspects) in the context of PIU has been published, recently (Montag and Reuter, 2015).

A second very important research topic concerns the relationship of PIU to (other) psychiatric symptoms. Here, especially the association between PIU and depression (higher scores in depression in addicted users) has become a research focus (e.g., Ha et al., 2006a,b; Kim et al., 2006; Young and Rogers, 1998), but relations were also found in other areas of psychiatric research, like ADHD (Ha et al., 2006a,b), social anxiety (Caplan, 2006) or aggression/hostility (Ko et al., 2009; Yen et al., 2007). A recent study provided evidence that ADHD tendencies might be even a better predictor for PIU than depressive tendencies (Sariyska et al., 2015).

The clinical associations are especially relevant, as the status of PIU as a recognized disorder is still a matter of discussion, and PIU cannot be diagnosed according to the current version of the Diagnostic and Statistical Manual of Mental Disorders (DSM-V). Right now, only a specific form of PIU, namely Internet Gaming Disorder, can be found in section III of DSM-V as a so called emerging disorder. Therefore, it is of tremendous importance to characterize this phenomenon better to get to a final answer on the nature of PIU in the (near) future. Of note, a recent study provided

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evidence that generalized and specific forms of PIU do not correlate highly (with the exception of social network addiction such as Facebook; Montag et al., 2015). Generalized PIU refers to spending much time online in general and procrastinating everyday life issues. Specific PIU is associated with clear targeted online activities such as overuse of pornography, online video games or online gambling (Davis, 2001). This clearly complicates matters.

Another problem in research on PIU is its cultural diversity. Most results concerning PIU come from Asian countries (Block, 2008), and there seem to exist cultural differences in the way the Internet is used (for example Durkee et al., 2012; Lei et al., 2009; Shostya, 2015). Therefore, a closer look on the impact of culture on PIU is warranted.

There are many other points that need to be considered when discussing PIU as a unique disorder which cannot be elaborated here (for an overview compare Pies, 2009). Therefore, as no official criteria for diagnosis exist, we relate among others to a recent proposal of Tao et al. (2010), who suggested a 2 + 1 rule for diagnosis: Besides preoccupation with the Internet and withdrawal symptoms one further symptom including development of tolerance must be observed in order to diagnose PIU.

In this paper, we strive to expand knowledge on a potential association of PIU to empathy. Interestingly, this is a question, which has not been investigated much until now. There exists some evidence on the role of empathy in cyberbullying in the context of Facebook usage. Among others, Kwan and Skoric (2013) demonstrated a link between cyberbullying on Facebook and bullying at school. Here, the question arises what kind of person would intervene when such cyberbullying activities can be observed? A study by Freis and Gurung (2013) gave an answer by presenting data that among others person with high empathy are most likely to intervene. Clearly, this research targets only Facebook usage. Generalized PIU (although related to Facebook overusage, Montag et al., 2015) has been not investigated in the context of empathy (at least to our knowledge).

Empathy is an important human ability for successful social interaction (compare Melchers et al., 2015), and has been, among others, related to satisfaction in couple relationships (Busby and Gardner, 2008), problem solving in friendship (De Wied et al., 2007) or lower aggression (Kaukiainen et al., 1999). According to Nie et al. (2002, p. 215), online activity "competes with, rather than complements, face to face social time". Therefore, we expect that a trait like empathy will be negatively related to PIU[1]. Besides, the amount of Internet use has been related to fewer social skills (Engelberg and Sjöberg, 2004), which impedes the ability to build up successful social relations. One explanation for this finding could be differences in empathy, which is a second reason for investigating the relationship of empathy and PIU.

As described above, there seem to be significant differences in Internet use depending on cultural background (e.g., Li and Kirkup, 2007). Therefore, it makes sense to test whether a putative relation between PIU and empathy can be replicated in groups of participants with different cultural backgrounds or whether associations are specific to a unique cultural makeup. To get first insight into this question, we opted to collect data from two different samples in this study, one from China and one from Germany. We chose these countries, because on the one hand, they represent different areas of the continuum of collectivism and individualism (e.g., Wheeler et al., 1989) and on the other hand (as described above) IA is a phenomenon which has primarily been described and investigated in Asia (although this changes in the last years), which is why it makes sense to compare an Asian and a non-Asian sample.

[1] Empathy has been associated with prosocial behavior and the quality of social interactions (e.g. Decety and Lamm, 2007). Therefore it is helpful to experience high quality face to face social time.

2. Methods

2.1. Participants

$N = 438$ students (270 males, 168 females; $M_{age} = 19.60$ (SD = 1.80)) at the Beijing University of Civil Engineering and Architecture, China and $N = 202$ students at the University of Bonn, Germany (50 males, 152 females; $M_{age} = 22.09$ (SD = 5.24)) were recruited for this study. Students were invited to take part in the study by written adverts and by direct appeal in classes. Besides being at least 18 years of age and actually using the Internet, we did not define inclusion criteria, because we wanted to depict the entire range of possible characteristics in PIU and empathy. All participants filled in questionnaires on empathy and PIU. As the study was conducted online in China and as a paper–pencil study in Germany, electronic or written consent was given before completion. For the Chinese sample, this was achieved by online presentation of all information concerning the investigation (including participants rights, aims of the study etc.) prior to presenting the questionnaires, which means participants had to read through the information before answering the questionnaires. Participants were informed that by actively sending their data (by use of a button at the end of the questionnaire) they agreed to be included in the dataset of the study. For the German sample, information concerning the study was given on a separate sheet, including the same information as given to the Chinese sample. Participants signed that they agree to take part in the study and only after doing so they were given the questionnaires. Our study was approved by the local ethics committee at the University of Bonn, Germany.

2.2. Questionnaires

2.2.1. Internet addiction test by Young (1998)

The IA test (Young, 1998) was administered. It consists of 20 items with a five point Likert scale from *never* to *always*. The scores can range between 20 and 100. According to Widyanto and McMurran (2004) points between 20 and 39 describe normal usage, 40 to 69 first signs of problematic IU and points > 69 problematic usage. The present Chinese as well as the present German version of the IAT have been used earlier (e.g. Montag et al., 2015; Sariyska et al., 2014) and yielded excellent internal consistencies in the present sample ($\alpha = .86$ and $\alpha = .84$, respectively).

2.3. Empathy questionnaires

The Interpersonal Reactivity Index (IRI) consists of four subscales measuring empathy components. The subscales are 'perspective taking', 'fantasy', 'empathic concern' and 'personal distress'. The IRI consists of 28 items with a five point Likert scale from *does not describe me well* to *describes me very well*. The German ($\alpha = .70–.83$) as well as the Chinese version ($\alpha = .70–.74$) yielded satisfying internal consistencies.

The Empathy Quotient (EQ) consists of 60 items and is answered via a four point Likert scale from *strongly disagree* to *strongly agree*. It assesses general empathy in one score. The German ($\alpha = .89$) as well as the Chinese version ($\alpha = .83$) yielded satisfying internal consistencies. For more information on these questionnaires compare Melchers et al. (2015).

2.4. Statistical analyses

As a first step, gender distribution and age differences between the samples were tested. Besides, we searched for differences in questionnaire responses between countries by means of ANOVAS.