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A longitudinal study of the association between Compulsive Internet use and wellbeing ☆

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ABSTRACT

Objective: Compulsive Internet Use (CIU) has been linked to lower wellbeing, especially among adolescents. Yet, questions regarding the directionality of this association remain unanswered: CIU may influence wellbeing and vice versa. Theoretically, both directions are plausible, yet so far no studies have examined the directionality of these effects among adults. This article aims to shed light on the directionality of the relation between CIU and both positive and negative wellbeing, using a prospective, longitudinal sample of adults (n = 398).

Methods: Over the course of four years, participants completed five assessments of their CIU and both positive and negative indicators of wellbeing. Participants were married couples who were recruited in the municipalities where they were married.

Results: CIU predicted increases in depression, loneliness and stress over time, and a decrease in happiness. No effect of CIU on the change in self-esteem was found. Further, happiness predicted a decrease in CIU over time.

Conclusions: The results suggest CIU lowers wellbeing. This is important given that lowered wellbeing may affect health. Happiness is suggested to be a buffer for developing CIU.

1. Introduction

An increasing number of people finds it hard to regulate their Internet use. As a result, they develop symptoms of compulsive Internet Use (CIU): Internet use with addictive characteristics, including withdrawal reactions when Internet use is impossible (e.g., unpleasant emotions), lack of control over Internet use (e.g., use of the Internet despite the intention or desire to stop or to decrease the use), and cognitive and behavioral preoccupation with the Internet (Van den Eijnden, Meerkerk, Vermulst, Spijkerman, & Engels, 2008). Many studies have shown that CIU is associated with lower psychological wellbeing (Chou, Condron, & Belland, 2005; Widyanto & Griffiths, 2006). However, there is no consensus on the directionality of this association (e.g., Armstrong, Phillips, & Saling, 2000; Ha et al., 2007; Sum, Mathews, Hughes, & Campbell, 2008). While some researchers suggest that CIU causes lower wellbeing (e.g., Moody, 2001), others argue that low wellbeing causes an increase in CIU (e.g., LaRose, Lin, & Eastin, 2003). Although both sides make theoretically compelling cases, it remains unclear which direction has the strongest effects over time.

Almost all studies on CIU and wellbeing use samples of adolescents or college students. We know surprisingly little about the link between CIU and wellbeing among adults (Byun et al., 2009; Chou et al., 2005; Kuss & Griffiths, 2011; Tokunaga & Rains, 2010; Widyanto & Griffiths, 2006). This is surprising, given that, for example, in the Netherlands, a country which has the 8th highest Internet penetration rate in the world, (InternetWorldStats., 2011), adults are the largest group of Internet users (Centraal Bureau voor de Statistiek [Central Statistical Office]., 2013). Furthermore, the 78.15% of the Dutch population is over 18 years of age, and only 7.11% of the Dutch population is a student of vocational or academic education (Centraal Bureau voor de Statistiek [Central Statistical Office]., 2014). The present study aims to explore the long-term directionality of the association between CIU and different indicators of wellbeing, using five consecutive surveys that were conducted over a four year period among adults.

Psychological wellbeing, sometimes referred to as psychological health or subjective wellbeing, is the evaluation of one's quality of

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life or life satisfaction. It is positively related to physical health (Mechanic & Hansell, 1987) and better social functioning (Diener, 1984; Diener, Suh, Lucas, & Smith, 1999; Okun, Stock, Haring, & Witter, 1984). Given the independent contribution of positive and negative aspects of wellbeing for health and human functioning, psychological wellbeing is considered as comprising both dimensions. Typically, happiness, depression, stress, loneliness, and self-esteem are indicators of psychological wellbeing (Augner & Hacker, 2011; Crocker, Luhtanen, Blaine, & Broadnax, 1994; Kang, 2007). The present study recognizes the multiple dimensions of wellbeing, and includes these diverse indicators to examine their relation with CIU.

1.1. Wellbeing and Compulsive Internet use

CIU is often described as being incapable to control one's Internet use (Chou & Hsiao, 2000; Johansson & Götestam, 2004). Related terms in the literature are Internet addiction (e.g., Young, 1998), problematic (e.g., Caplan, 2002; Morahan-Martin & Schumacher, 2000) or pathological Internet use (e.g., Davis, 2001), and Internet dependence (e.g., Wang, 2001). Several studies have shown that CIU is negatively associated with different indicators of wellbeing: Compulsive Internet users are more depressed, stressed and lonely, less happy and have lower self-esteem (for recent reviews and meta-analyses see Byun et al., 2009; Chou et al., 2005; Tokunaga & Rains, 2010; Widyanto & Griffiths, 2006).

Longitudinal studies yield mixed results. In a study of people's first two years with a home Internet connection, greater use of the Internet increased depression and loneliness (Kraut et al., 1998). However, in the third year, these effects had dissipated (Kraut et al., 2002). This begs the question what kind of results can be expected now that people have been using the Internet for almost twenty years, and how wellbeing relates to compulsive, rather than frequent, use of the Internet.

In the, to our knowledge only longitudinal study of CIU and wellbeing, incoming freshmen were recruited for a three-wave panel study in the summer before their first year of college (Tokunaga, 2012). Results showed that psychosocial problems such as loneliness and depression predicted later CIU, which in turn predicted later functional impairment (i.e., vocational impairment, impairment in friendships and in family relationships). All three waves were administered within half a year, from the summer before freshmen started college to the end of the first semester. At this time these young people probably underwent important life changes (e.g., moving away from their parents, living in a new environment), which may have affected the results and which limits the generalizability of these findings. Finally, a 2-wave study among adolescents aged 12–15 found that Internet use for communication purposes predicted an increase in depression six months later (van den Eijnden et al., 2008). Surprisingly, it also yielded an opposite effect: loneliness predicted a decrease of computer-mediated communication over time. Taken together, these results suggest that both directions of influence are plausible. Over time, CIU might affect wellbeing, but wellbeing might also affect CIU. However, there is no consensus in the literature.

1.2. Directionality of effects

The literature provides theoretical reasons for both directions of influence. Wellbeing might affect CIU because people with low self-esteem may develop a preference for online over offline social interactions, which they experience as a safer way of expressing themselves (Caplan, 2003, 2006). The preference for online interactions, in turn, may increase their dependence on the Internet, leading to CIU. Further, the consumption of different media can alter prevailing mood states, and people's selection of specific kinds of media content often serves to regulate their mood (Zillmann, 1988). Depressed individuals may therefore create media habits to alleviate depressed moods, leading to CIU (LaRose et al., 2003). Similarly, people may develop CIU because they use the Internet to dissociate and protect themselves from memories of loss, neglect, and abuse experienced in childhood (Schimmenti, Guglielmucci, Barbasio, & Granieri, 2012; Schimmenti, Passanisi, Gervasi, Manzella, & Famà, 2013). However, the opposite effect has also been described.

CIU might affect wellbeing because time spent online with weak ties, such as acquaintances, might substitute time spent on strong ties, such as family members (Nie & Erbring, 2000; Vitalari, Venkatesh, & Gronhaug, 1985). CIU may also negatively affect other life outcomes, including school or work performance. Such outcomes can isolate individuals from healthy social activities and increase their feelings of loneliness (Kim, LaRose, & Peng, 2009; Tokunaga, 2012). Finally, certain types of online content and online interactions may affect wellbeing. To illustrate, excessive use of social media might decrease one's self-esteem or lead to depression, because it provides content that can be used for social comparison (Pantic et al., 2012). Thus, according to the literature, both directional paths seem plausible. It may even be the case that they mutually reinforce each other, in that lower wellbeing may lead to more CIU, which in turn may decrease wellbeing even further. The present study sought to examine the directionality of the link between CIU and wellbeing.

1.3. The present study

Our study aims to shed light on the long-term directionality of the link between CIU and psychological wellbeing. Based on the existing literature, we expected to replicate the negative association between CIU and wellbeing, and extend these findings by exploring the long-term effects of CIU and wellbeing. Given that positive and negative indicators are partly independent of one another (Huppert & Whittington, 2003), and psychological wellbeing is considered a multi-dimensional construct, we examine both negative (i.e., depression, stress, and loneliness) and positive (i.e., happiness and self-esteem) indicators of wellbeing.

Because the literature describes effects in both directions, we pose the research question: What are the long-term effects of CIU on wellbeing, and of wellbeing on CIU? To examine these associations as well as the directionality of effects, we use data from a 5-year prospective study among married adult couples. These couples were recruited through the municipalities in which they were married, and are representative of Dutch married couples. Married people make up 41.48% of all people in the Netherlands (Centraal Bureau voor de Statistiek, 2013). Therefore it is an important and representative group to study. Furthermore, CIU has adverse social and relational effects; not only does it contributes to greater loss of self-control, but it also undermines trust (Muusses, Finkenauer, Kerkhof, & Righetti, 2013). These examples show that married people are at risk for CIU related issues, which begs the question of how CIU and wellbeing are related in married people.

The longitudinal design of our study allows us to examine the long-term directional effects of CIU and wellbeing. Because the data is dyadic, we use analyses that correct for this non-independence of the data. Furthermore, we provide across-partner correlations for the variables of interest. Although our study is correlational, the results will contribute to our understanding of the importance of both directions.

2. Method

2.1. Participants

The data used for this study are derived from the VU University Panel on Marriage and Well-Being, a 5-wave, longitudinal study