

# Using the "Addictive" use of Social Media as an Example, Deconstruct the Components of the Addiction Model

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## Abstract

According to the components model of addiction, all addictions have salience, tolerance, mood modulation, relapse, withdrawal, and conflict in common. Numerous psychometric tools have been created as a result of this highly effective model, which assess addictive behaviours in accordance with these standards. But according to recent research, certain elements in the context of behavioral addictions are peripheral characteristics that do not differentiate between pathological and non-pathological behaviour. We tested whether these 6 components actually evaluate core features of addiction or whether some of them comprise peripheral features that are not indicative of a disorder by using "addictive" use of social media as an example.

The Bergen Social Media Addiction Scale, a 6-item psychometric instrument developed from the components model of addiction to evaluate social media "addiction," was completed by 4,256 participants from the general population drawn from four independent samples. We demonstrated the six components did not constitute a unitary construct through structural equation modelling and network analyses, and importantly, some components (such as salience and tolerance) were not related to measures evaluating psychopathological symptoms.

Together, these findings imply that when applied to behavioural addictions, psychometric tools based on the components model confound central and peripheral characteristics of addiction. This suggests that using these tools pathologizes engaging in appetitive behaviours. Thus, our results urge a revision of how behavioral addictions are conceptualised and evaluated.

**Keywords:** Behavioural addiction • Components model • Network analysis • Social media use • Structural equation modelling analysis

## Introduction

The study of behavioral addictions has drawn more attention in recent years, and there have also been an increasing number of scholarly papers in this area. The fifth edition of the Diagnostic and Statistical Manual of Mental Disorders includes gambling disorder as an addiction condition that is associated with substance use disorders, which has contributed to this efflorescence. The so-called "confirmatory approach" to behavioral addictions is to blame for the growing prevalence of these "behavioral addictions." The process through which increased engagement in appetitive activities is a priori understood as an addicted condition is known as the confirmatory method. By adapting the criteria for substance addiction, psychometric tools are then created to evaluate and diagnose these behavioral addictions.

Many of these recently proposed behavioral addictions, as well as the corresponding psychometric tests, are based on Griffiths' operationalized components model of addiction. (2005). The six core components of this model, which was adapted from Brown's (1993) components model of substance addiction, are: (1) salience (cognition, affect, and conation focused on carrying out the behavior), (2) tolerance (increasing involvement in the behavior to maintain a comparable experience), (3) mood modification (involvement in the behavior to achieve a desired affect), and (4) relapse prevention.

Since some of these criteria (such as salience and tolerance) are not always applicable to non-substance-related addictions, some authors have critiqued the use of these criteria to operationalize and evaluate behavioral addictions. It has even been suggested that the urge to "legitimize" behavioral addictions may have motivated the stealing of drug addiction criteria like tolerance and withdrawal. For instance, in the context of online video gaming, Charlton and Danforth (2007) questioned the structural validity of the 6-component model. They identified two factors they dubbed "engagement" (consisting of ancillary components that do not distinguish non-pathological from pathological behavior, namely salience, and "engagement" (consisting of peripheral components that do not distinguish non-pathological from pathological behavior) by performing exploratory factor analyses on questionnaire items tapping the six components of addiction proposed.

Along with social media's rising popularity and user base, the idea of a social media "addiction" has become more prevalent. However, a lot of research in this area relies on the confirmatory strategy mentioned above, conceiving increased social media use in relation to characteristics of addiction and creating psychometric tools to measure these characteristics. The classification of social media use as a behavioral addiction is still up for debate, but some experts believe it to be a real disorder that falls under the umbrella of other specified disorders due to addictive behaviors in the 11th edition of the International Classification of Diseases.

According to Steegen, this study uses a multiverse methodological approach that combines two different psychometric frameworks: network analysis and structural equation modeling analysis. In network analysis, psychopathological disorders are represented by the intricate relationships among their symptoms.

Therefore, we first sought to ascertain whether the components cohered into a unitary construct (as postulated by the components model and assessed by psychometric instruments derived from this model) or emerged as multiple distinct constructs (combining, for example, central and peripheral components, consistent with Charlton and Danfo) by performing structural equation modeling and network analyses within these six components in the context of "addictive" use of social media. We then sought to ascertain whether all components were associated with psychopathological symptoms, that is, whether all components were actually reliable indicators of a disorder, or whether some of them were not, by conducting network analysis within these components and a wide range of psychopathological symptoms.

The overall sample was made up of an amalgamation of four separate databases with people drawn from earlier studies that had all gotten ethical approval from local ethics committees and some of which had, up to this point, resulted in peer-reviewed journal papers. Each participant was based in Italy and spoke Italian. They participated by completing five self-administered psychometric tests that were available online for this investigation. Prior to participating, each subject gave their informed consent; there was no payment.

Although behavioral addictions have drawn more attention over the past 20 years, there is mounting evidence that several operationalization criteria sets fail to appropriately separate non-pathological from pathological conduct. The goal of the current psychometric investigation was to determine if the six-component model of addiction essentially assesses key elements of addiction or if it confounds central and peripheral features of addiction by employing "addictive" social media use as a typical example. To do this, the current study employed a multiverse methodological approach depending on network analyses and structural equation modeling.

Our results showed that the 6 components of addiction – as measured by the 6-item Bergen Social Media Addiction Scale – did not cohere into a unitary construct, but rather into a dimensional construct. Furthermore, the first identified dimension – comprising the two components of tolerance and salience – showed no association with any measures of psychopathological symptoms included in the present study. In contrast, the second dimension – comprising the four components of mood modification, relapse, withdrawal, and conflict – was positively associated with several measures of psychopathological symptoms included in the present study.

Our findings have significant ramifications for how behavioral addictions are conceptualized and evaluated. Screening for behavioral addictions in accordance with the components model results in pathologizing involvement in appetitive behaviors by including criteria reflecting peripheral features - such as the components of salience or tolerance - yet assumed to be indicators of addictive disorders *stricto sensu*. This is important because, according to a growing body of research, the components model cannot tell apart pathological behavior from non-pathological behavior, such as in the setting of video games or physical activity. Overall, the results of this study, which used a data-driven multiverse psychometric method, support those assumptions [1-3].

It is important to recognise the limitations of the current investigation. First, sample variability presents a reproducibility difficulty within the context of network analysis. We evaluated the stability and precision of the derived network model parameters to address the latter. Second, variables are still treated as observed variables within the context of network analysis, which ignores measurement error. The performance and reliability of the estimated network models were significantly enhanced by combining data from several indicators per node by looking at factor scores (rather than item scores) in order to solve the latter. Additionally, we used a new methodological approach based on structural equation modeling and network analysis to solve both of the aforementioned problems in the factorial structure analyses [4-5].

Third, we combined four separate databases that had people that were chosen from several earlier study initiatives. However, because of how we used this approach, we were able to use a substantial sample size, thus we do not see this as a serious constraint. Fourth, in order to maintain the general accuracy of our results, some psychopathological symptoms' scores have to be integrated by principal component analysis prior to doing the network analyses. Together, the findings of this study lend credence to the idea that when used with behavioral addictions, psychometric tools

based on the components model confound central and peripheral elements of addiction.

## Conclusion

Our results in the situation of "addictive" social media use, however, did not support the notion that the component of mood alteration forms a peripheral requirement, in contrast to the conclusions of the foundational work of Charlton and Danforth in the context of "addictive" video gaming. Griffiths' transformation of Brown's initial "euphoria" component into a "mood modification" component, which is predicated on the idea that addictive behaviors are engaged in to control both happy and negative affective states, is likely to account for this distinction. A positive affective state (i.e., "I frequently experience a buzz of excitement while playing") was really tapped when Charlton and Danforth used the initial "euphoria" component for their psychometric instrument. The 6-item Bergen Social Media Addiction Scale, on the other hand, is detecting a negative emotional. Therefore, rather than reflecting a "addiction" to social media, it is more likely that those endorsing the latter item use social media as a maladaptive coping mechanism or as a symptom of underlying problems. Furthermore, because the component of mood modification considers both positive and negative affective states, assessing it with a single item that only measures a negative affective state implies inadequate construct coverage and, as a result, low content validity.

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