

Problematic Smartphone Use

Subjects: **Psychology**

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Problematic smartphone use (PSU) is defined as the inability to control the time spent on smartphones, which has long-term negative impacts on daily life. The use-and-gratifications approach is applied to smartphones and describes the extent to which users devote themselves to smartphones to obtain gratifications. These gratifications can be represented in the types of use (process, social, and habitual).

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perceived stress

1. Theories on the Motives for Smartphone Use

1.1. Uses-and-Gratifications Approach

The uses-and-gratifications approach is a model of media use research and examines or describes the extent to which recipients devote themselves to certain media offerings to derive certain benefits from the respective media. The approach focuses on gratifications (satisfaction of needs) that result from the use of the chosen offers and can thus be added as motivation-theoretical aspects to represent media use and media effects ^[1]. Meanwhile, users are considered active, goal-oriented subjects who have individual needs and expectations for specific media offerings ^[2]. The following needs or motives exist for media use: 1. the need for information (orientation, seeking advice, learning), 2. the need for entertainment (escapism, relaxation, sexual stimulation), 3. the need for personal identity (search for models of behavior, reinforcement of personal values), and 4. the need for integration and social interaction (substitute for sociability, role model, conversation) ^[3].

1.2. Compensatory Internet Use Theory (CIUT)

Kardefelt-Winther's ^[4] compensatory internet use theory (CIUT) can be seen as a further development of the uses-and-gratifications approach, which can also be applied to smartphone use ^[5]. It seeks to understand negative life events and stressors that drive users to use technology excessively. For example, the motivation may be to mitigate the negative emotions associated with the stressors. By illuminating the relationship between mental health and problematic smartphone use, conclusions can be drawn about the extent to which online activities can act as compensators for psychosocial problems even if it involves negative consequences. The core of the theory is that the problem is the individual's reaction to negative situations, the resolution or termination of which is enabled by the use of technology. For example, if a person lacks social contact, he feels the need for social interaction. This is provided to him by certain smartphone applications (e.g., social media) and can have both positive and negative effects: Positive, because the need for social contact has been gratified, and negative,

because digital exchanges cannot adequately replace real ones and, depending on various factors (such as the presence of certain psychosocial problems), the person runs the risk of becoming dependent on the Internet or smartphone use for his or her need to satisfy social stimulation, which in turn can lead to excessive use and possibly problematic usage behavior [4]. The compensatory internet use theory states that problematic use can arise as a consequence of negative feelings or problems. Additionally, in a further step, there is more talk of reciprocal interaction, in which the smartphone is used to escape or alleviate negative feelings. However, excessive use then leads to increased negative feelings and stress as a result [6].

Apart from the motives and gratifications, however, increasing usage has negative consequences: Research findings in recent years show that device use may be associated with a variety of psychological and physiological problems caused by problematic smartphone use, which leads to more stress [6][7].

2. Problematic Smartphone Use

In the course of this, the construct of problematic smartphone use (PSU) became established. Problematic smartphone use behavior is predominantly conceptualized in scientific discourse as behavioral addiction (substance-independent dependence) and is distinguished from non-problematic use behavior by symptoms such as withdrawal symptoms (when the device is unavailable), tolerance development (use must be intensified to obtain the same level of gratification), dangerous use (e.g., while driving), and conflicts with the social environment due to the use behavior [5][8]. In addition, technological triggers (such as notification tones), a variety of application options, and the constant tangibility of the device are also facilitating factors [5][7][9][10]. Measurement tools are often modeled on or have evolved from, the concepts of gambling and computer game addiction. The concept of internet addiction is also related to this [11].

Billieux [12] defines problematic smartphone use as “an inability to regulate one’s use of the smartphone, which eventually involves negative consequences in daily life”. As Kuyulu and Beltekin [13] describe: “The use of smartphones both gives pleasure to the person as a result of use and saves them from pressure or anxiety. Such reinforcement makes it easy to be addicted to the smartphone”. Even though the symptoms of problematic smartphone use are similar to the symptoms of other addictions, it is essential to consider problematic smartphone use separately from addictions according to the ICD-10 criteria. The consequences of problematic smartphone use are not comparable to the intensity and limitations associated with other addictions [14]. Long et al. [15] therefore use the term problematic smartphone use instead of an addiction term so that the phenomenon escapes automatic pathologization.

To clarify the intensity and severity of problematic smartphone use, it can be differentiated between excessive-functional media use, which is characterized by users implementing a request in a goal-directed and self-controlled manner and not experiencing serious negative consequences; excessive-dysfunctional media use, which is characterized by a low level of goal-directedness and control and is less effective, but is not experienced as burdensome by users; and dependent media use, in which action control is even lower than in the other forms and the individual perceives the usage behavior or the usage time itself as inappropriately high [16].

There has been a growing body of research on the psychopathological factors associated with problematic smartphone use over the past 10 years [17]. Among the most commonly studied associations are those between depression, anxiety, and problematic smartphone use [5][18][19][20][21]. People with depression use their smartphones to cope with or suppress and avoid their depressive, negative emotions [6]. The resulting excessive smartphone use leads to increased sleep problems and stress [20], which in turn increases depressive symptoms and leads to a vicious cycle [22][23][24]. Other studies on the relationship between psychological factors and smartphone use behavior or the propensity to engage in problematic use behavior found positive associations between problematic smartphone use and technostress in several studies [25][26].

3. Type of Use as a Factor for Problematic Smartphone Use

Another factor related to problematic smartphone use is the type of use and how the different types of use provide gratification to the individual. A general distinction is made between social, process, and habitual use. Social use includes interaction with one's social network via social media and instant messaging and satisfying the need for social interaction. Process use, on the other hand, describes content-related media consumption such as reading news websites, streaming videos, or playing in-app games, thus satisfying the expectation to pursue enjoyable activities [9][27][28]. Habitual use can be defined as a habitual behavior as an automatic response to certain stimuli coming from within, e.g., a certain craving or emotion, or from outside, such as by a ringtone or a smartphone screen lighting up [29], leading to the automatism of unlocking the phone to check for new notifications [30]. If this behavior leads to desirable outcomes, it is performed more often and habitual use increases due to gratification [9][31].

Studies have found either greater associations with habitual and process smartphone use [9] or social use [10] and problematic use behaviors. It is unclear to what extent the type of use influences specific types of problematic use. Last but not least, stress and stress perception play a role in the context of problematic smartphone use and can be correlated with the type of use [20].

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