

Relationship between Sense of Coherence and Internet Addiction among Adolescents

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Abstract

This study was aimed to investigate the relationship between sense of coherence (SOC) and Internet addiction in adolescents. The present study was a descriptive and correlational research conducted on junior and senior high school students in District 13 of Tehran (Tehran Province) during the school year of 2020-2021. Participants were 385 students chosen through convenient sampling. Data were collected through the Persian version of Antonovsky's SOC scale (SOC-13) and the Young Internet Addiction Test (IAT) and then analyzed in SPSS software (IBM) using Pearson's correlation coefficient (R) and regression analysis. There was a significant correlation between SOC and Internet addiction among adolescents ($R = -0.642$) ($P < 0.05$). The correlation direction showed that a rise in SOC reduces Internet addiction among adolescents. The regression model coefficient of determination (R^2) value of 0.412 indicated that SOC predicts nearly 41% of variations in Internet addiction among adolescents. From the results, it is suggested to organize training courses in schools and educate parents to strengthen sense of coherence and prevent Internet addiction in students. It is further wise to explore the effects of Internet addiction on sense of coherence in adolescents.

Keywords: Internet addiction, sense of coherence (SOC), Adolescents

Introduction:

In modern human lives, the Internet has become an inevitable necessity to collect data and communicate with others. The rapid growth of the Internet has allowed many opportunities. By contrast, the increase in the number of Internet users, especially among youths and adolescents, has inflicted some threats, such as Internet addiction, that is the compulsive and destructive need to use the Internet and cyberspace, to the point where it initiates negative consequences (Gholamian, Shahnazi, and Hassanzadeh, 2017).

By definition, Internet addiction is excessive use of the Internet, a decrease in the importance of time when not using the Internet, an excessive irritability and aggression when it is not possible to use the Internet, and the deterioration of the individual's social, business, and family life (Simsek, Sahin, & Evli, 2019).

Similar to other forms of addiction, internet addiction detaches the person from family and friends and has negative impacts on relationships, emotions, and mental health in adolescents (Yen et al., 2007).

The detrimental consequences of Internet addiction include impacts on identity formation, social skills, and emotional regulation in adolescents. This indicates the compelling need to identify, help, and (if required) treat at-risk individuals. This need is supported in the fifth edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-5), in particular for the excessive use of Internet games (Stavropoulos, Gomez, Steen, 2017).

Transition to independence is among the distinct characteristics of adolescents. Studies show that online activities can bring privacy and a sense of being out of parental control, and thus intensify Internet addiction among adolescents. Additionally, attractive Internet-based applications, such as online group games, inspire adolescents to avoid being involved in challenges. Studies have shown that addictive patterns developed during adolescence will likewise continue to adulthood (Stavropoulos, Griffiths, Burleigh, 2018).

The concept of a SOC was first coined by Aaron Antonovsky in 1993. Antonovsky defined a SOC as a crucial construct that helps to understand how an individual deal with stress and challenges during his or her life and remains healthy (Konaszewski, Kolemba & Niesiobędzka, 2021).

Studies have shown that individuals with a high SOC consider stressful situations as a constructive challenge in their life, instead of avoiding them. This attitude helps them to accept and properly manage various situations in their lives (Mortezaei and Rahimi Nejad, 2016).

SOC consists of three components, including comprehensibility, manageability, and meaningfulness. Comprehensibility refers to an individual's cognitive control over the surrounding environment. In simple terms, the person is ensured that all events are as expected and no something bad is going to happen. Manageability indicates that the person believes he or she has access to all resources to deal with challenges. And meaningfulness is the extent to which a person appreciates life and a motivation to turn potential resources into actual ones and manage the world (Eriksson & Lindstrom, 2005). According to Antonovsky's theory, a SOC is an internal experience that is gradually formed during adolescence until reaching its relatively stable quality (Ghaedifar, 2012).

SOC develops in the process of socialization during the whole life. However, childhood and adolescence demonstrate crucial importance in SOC development. Moreover, SOC is significantly influenced by repetitive and stable experiences and one's participation in the decision-making process (Skonieczna, Fronczak, Kielan, 2018).

Numerous studies have explored the relationship between SOC and addiction, indicating that a high SOC is a good predictor to reduce addictions such as substance use and alcohol addiction (Grevenstein et al., 2014).

However, not much is known about the exact relationship between SOC and Internet addiction. Zwoliński and colleagues studied the effect of SOC as a protective factor in Internet addiction, though their research was conducted more than 10 years ago when Internet use was not extended among secondary school students (Zwoliński, Jelonkiewicz, Kosińska-Dec, 2011).

A 2018 study by Skonieczna and co-workers showed a positive correlation between high SOC levels in adolescents and low scores on the Internet addiction test. SOC in adolescents helped them cope with anxiety and, instead of escaping the obstacle, acknowledge the situation and find a solution (Skonieczna, Fronczak, Kielan, 2018).

Mortezaei et al. (2016) studied the relationship between Internet addiction and SOC in 146 students at Anzali Islamic Azad University (Bandar-e Anzali, Gilan province, Iran). In their study, SOC negatively predicted variations in Internet addiction among students (Mortezaei, Rahiminejad, 2016).

From the literature review and given the paucity of data in this context, this study aims to find any association between SOC and Internet addiction among Iranian adolescents and explore whether or not SOC is a good predictor of Internet addiction in adolescents. Following hypotheses are thus investigated from this point of view:

1. There is a relationship between SOC and Internet addiction among adolescents.
2. SOC predicts Internet addiction in adolescents.

Methodology

This descriptive and correlational study explored the relationship between SOC and Internet addiction among junior and senior high school students in District 13 of Tehran (Tehran Province) during the school year of 2020-2021. The participants were 385 students selected through a convenience sampling method, of which 230 were females and 155 were males. Data were collected through online questionnaires and then analyzed in SPSS software (IBM) using Pearson's correlation coefficient (R) and regression analysis.

Data collection tools

Data on the study variables were collected through two questionnaires, including Antonovsky's SOC scale (SOC-13) and the Young Internet Addiction Test (IAT).

Young Internet Addiction Test (IAT)

IAT, developed first by Dr. Kimberly S. Young, is the most spread scale for measuring internet addiction. IAT measures the level of addiction on the internet and consists of 20 items based on a five-point Likert scale (i.e., 0 = Never; 1 = Seldom; 2 = Occasionally; 3 = Frequently; 4 = very often, and 5 = always) (Young, 1999).

The total score is the sum of the scores of all questions and ranges from 20 to 100. In most studies, the cut-off score has been reported to be from 20 to 49 (indicating normal Internet use), 50 to 79 (indicating at-risk users need to be screened), and 80 to 100 (indicating severe addiction on the Internet). The test's content validity and reliability have been previously confirmed with Cronbach's alpha of 0.9. The internal consistency coefficient on this test has been reported to be 0.92 (Young et al., 1999). IAT's content validity and test-retest reliability have also been confirmed. In their study, Alavi et al. confirmed IAT's content validity, convergence, and test-retest reliability ($r = 0.82$) ($\alpha = 0.88$) (Alavi, Eslami, Marati et al., 2010).

Antonovsky's SOC scale (SOC-13)

Antonovsky's SOC scale (SOC-13) was developed into 29-items and 13-items scales with a high correlation between the two versions. In the present study, the SOC-13 version was used including components of comprehensibility, manageability, and meaningfulness (Saravia, Iberico, Yearwood, 2014).

SOC-13 consists of 13 items with seven-point response scales, ranging from 1 (no reluctance) to 7 (severe reluctance). The total score is the sum of all scores obtained from items. Mohammadzadeh et al. reported the SOC-13 Cronbach's alpha of 0.77, indicating good internal consistency (Mohammadzadeh, Poursharifi, Alipour, 2010). The scale's content validity and test-retest reliability have also been confirmed in Iranian studies.

Eriksson and Lindstrom (2005) reviewed 127 studies conducted with the SOC-13 scale and found that the scale's internal consistency coefficient (Cronbach's alpha) ranges from 0.7 to 0.92. SOC-13 test-retest reliability value was also reported to be from 0.69 and 0.72. These indicated the scale's good content validity and reliability to be used interculturally (Eriksson & Lindstrom, 2005).

Data analysis

Data were analyzed in SPSS-26 software (IBM) using descriptive and inferential statistics. Descriptive statistics included frequency, mean and standard deviation (SD). For inferential statistics, the research hypotheses were investigated by assessing the normality of data through the Kolmogorov-Smirnov test and analyzing skewness and kurtosis values. Pearson correlation test was performed to analyze the research observations and hypotheses. Regression analysis was also used to investigate the power of anxiety, impulsivity, and coherence in predicting addiction on the Internet at the significance level of 0.05.

Findings

A total number of 385 participants was studied ranging from 12 to 18 years old, of which 230 (59.7%) were females and 155 (40.3%) were males. The study aimed to assess an association between SOC and addiction on the Internet in adolescents. Descriptive statistics, including mean and standard deviation (SD), are presented in

Table 1. The mean (\pm SD) values for manageability, comprehensibility, and meaningfulness were 15.41 \pm 50.1, 18.62 \pm 5.46, and 19.27 \pm 4.99, respectively.

| Table 1. Descriptive statistics (mean and SD) of the study variables and corresponding components | | | | | |
|--|--------|-----|-----|--------|--------|
| Variable | Number | Min | Max | Mean | SD |
| SOC | 385 | 16 | 89 | 53.309 | 12.874 |
| Meaningfulness | 385 | 5 | 28 | 19.268 | 4.993 |
| Manageability | 385 | 4 | 28 | 15.418 | 5.015 |
| Comprehensibility | 385 | 5 | 34 | 18.623 | 5.466 |
| Internet addiction | 385 | 20 | 92 | 43.829 | 16.296 |

Pearson's correlation test results are presented in Table 2.

| Table 2. Pearson's coefficient test results | | | | | |
|--|---------|----------------|---------------|-------------------|------------|
| Variable | | Meaningfulness | Manageability | Comprehensibility | SOC |
| Meaningfulness | ρ | | | | |
| | p-value | | | | |
| Manageability | ρ | ** 0.482 | | | |
| | p-value | 0.000 | | | |
| Comprehensibility | ρ | ** 0.489 | ** 0.637 | | |
| | p-value | 0.000 | 0.000 | | |
| SOC | ρ | ** 0.783 | ** 0.847 | ** 0.862 | |
| | p-value | 0.000 | 0.000 | 0.000 | |
| Internet addiction | ρ | ** - 0.565 | ** - 0.533 | ** -0.507 | ** - 0.642 |
| | p-value | 0.000 | 0.000 | 0.000 | 0.000 |

Corresponding p-values with p values less than 0.01 are marked with **.

Pearson's correlation matrix shows a significant and negative relationship between SOC in adolescents and its components (meaningfulness, manageability, and comprehensibility) with Internet addiction ($p < 0.05$) (Table 2). Table 2 indicates that Internet addiction is reduced at higher SOC scores.

| Table 3. The regression model – research hypothesis | | | | |
|--|--|----------------|----------------------------------|---------------|
| Multiple correlation coefficient (R) | Coefficient of determination (R^2) | Adjusted R^2 | Standard error of estimate (SEE) | Durbin-Watson |
| 0.642 | 0.412 | 0.411 | 12.510 | 2.051 |

| Table 4. Regression analysis – research hypothesis results | | | | | |
|---|----------------|-------------------------|--------------|---------|---------|
| Model | Sum of squares | Degree of freedom (DoF) | Mean squares | F | p-value |
| Regression | 42040/905 | 1 | 42040/905 | 268.631 | 0.000 |

| | | | | | |
|----------|------------|-----|---------|--|--|
| Residual | 59939.781 | 383 | 156.501 | | |
| Total | 101980.686 | 384 | | | |

The model coefficient of determination value was 0.412, meaning that SOC has predicted 41% of variations in Internet addiction among adolescents (Table 3). Analysis of variance (ANOVA) and the significance value ($p = 0.000$) shows that the SOC's combined and linear effects on Internet addiction are statistically significant (Table 4). In detail, the significant t-value and SOC's power to predict Internet addiction in adolescents show the significant effect of meaningfulness ($p = -0.361$), manageability ($p = -0.249$), and comprehensibility ($p = -0.172$) on Internet addiction among adolescents.

Table 5. Standardized and non-standardized regression coefficients for SOC components

| Model | Non standardized regression coefficients | | Standardized regression coefficients | t-value | Sig. | Collinearity | |
|-------------------|--|-------|--------------------------------------|---------|-------|--------------|-------|
| | B | SD | Beta | | | Tolerance | VIF |
| Constant value | 88.52 | 2.779 | - | 31.865 | 0.000 | - | - |
| Meaningfulness | - 1.177 | 0.15 | - 0.361 | - 7.824 | 0.000 | 0.712 | 1.405 |
| Manageability | - 0.808 | 0.17 | - 0.249 | - 4.769 | 0.000 | 0.556 | 1.799 |
| Comprehensibility | - 0.514 | 0.156 | - 0.172 | - 3.292 | 0.001 | 0.551 | 1.815 |

Discussion and conclusion

The present study investigated the relationship between SOC and Internet addiction among adolescents. Pearson's correlation coefficients matrix showed a negative and significant relationship between SOC and addiction on the Internet in adolescents. Higher SOC scores were associated with lower Internet addiction in adolescents, as similarly reported by Skonieczna et al. (2018), Zwoliński et al. (2011), and Mortezaei et al. (2016). SOC is described as a general orientation towards life. It is a construct showing that the person believes all environmental stimuli are predictable and explainable and he or she has access to all resources to deal with challenges that are constructive during lifespan. SOC is a source of resilience and a potential protective factor in a person's mental health that can help him or her to, instead of escaping the obstacle, acknowledge the situation and find a solution. Therefore, individuals with higher SOC scores acknowledge stressful situations and consider them as part of their life and natural events that enable them for more learning. They believe that they have all the inherent skills to manage obstacles and situations, thus constantly attempting to use all opportunities for their growth. They use the Internet as a shelter and resource to properly manage their situations and believe that these challenges give meaning to their lives. Overall, SOC enables individuals to use health-related strategies and actions when dealing with routine challenges, instead of using tools such as the Internet.

Furthermore, SOC in adolescents aids them to get involved in challenges instead of circumventing them and adopting constructive ways to overcome obstacles. They perceive and encompass stressful situations instead of avoiding them and properly manage situations, through which they give their life a sense of meaningfulness. In addition, SOC enables individuals to deal with everyday conflicts using adaptive coping strategies and health-related behaviors. As a result, individuals with higher SOC scores allocate less time to the Internet than others when facing problems and stressful situations.

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