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The Mediating Role of Self/Everyday Creativity and Depression on the Relationship Between Creative Personality Traits and Problematic Social Media Use Among Emerging Adults

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Abstract Personality is one of the important contributory factors in the development of problematic technology use. The purpose of the present study was to investigate the direct and indirect associations of creative personality traits with problematic social media use via self/everyday creativity, depression, and loneliness. A total of 460 Turkish emerging adults aged between 18 and 26 years (61% female) were surveyed. Findings indicated that (i) task-orientedness was indirectly associated with problematic social media use via self/everyday creativity, (ii) self-confidence was directly and indirectly associated with problematic social

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media use via self/everyday creativity and depression, (iii) risk-taking was indirectly associated with problematic social media use via depression, and (iv) self/everyday creativity and depression were directly associated with problematic social media use. The present study is the first to suggest that creative personality traits (i.e., task-orientedness, self-confidence, and risk-taking) and self/everyday creativity are associated with problematic social media use and that these factors should be taken into account when considering the etiology of problematic social media use.

Social media use has become a prominent part on individuals' everyday lives. Whether as a means to connecting with close surroundings, socializing, passing time, or keeping up with up-to-date information (Horzum 2016), social media use is widespread worldwide and has become the most prevalently used application on the Internet (Kuss and Griffiths 2017). While more than two-thirds of all the people living in the world use social media, 80% of all Internet users are also active social media users (Chaffey 2018), and the number of users has consistently increased year-on-year. This widespread use is higher among the emerging adults (18–29 years old) when compared to older age groups. In fact, 88% of this age group actively use social media, while the ratio decreases as age increases (Smith and Anderson 2018).

With so many individuals using social media platforms, a small minority of its users appear to show addiction-like symptoms and display problematic consequences (Kuss and Griffiths 2011, 2017). Given that there are no proposed official criteria in established diagnostic texts (e.g., DSM-5; American Psychiatric Association 2013), researchers have been using different diagnostic instruments in order to determine problematic use. One of the widely used criteria, that were developed within a biopsychosocial framework (Griffiths 2005), suggests that individuals who often show specific symptoms of addiction (i.e., conflict, salience, mood modification, tolerance, relapse, and withdrawal) should be labeled as problematic social media users that are at risk of being addicted (Andreassen et al. 2016; Bányai et al. 2017).

Problematic social media use (PSMU) is a complex phenomenon that is associated with varying factors, including personality and psychosocial variables (Kuss and Griffiths 2011). Previous research has shown different personality traits to be associated with PSMU. A majority of these studies have focused on the Big Five personality traits (Andreassen et al. 2013; Kircaburun 2016a; Kircaburun and Griffiths 2018; Whaite et al. 2018), while a few others have examined socially undesirable personality characteristics such as the dark triad (Kircaburun et al. 2018a). Furthermore, studies also indicate complex relationships between depression, loneliness, and PSMU. While some studies have identified depression and loneliness as risk factors for PSMU (Primack et al. 2017; Whaite et al. 2018), others have shown that using social media problematically leads to higher depression and loneliness (Kircaburun 2016b; Satici 2018; Shensa et al. 2017).

In addition to empirical research, theoretical models, such as the Interaction of Person-Affect-Cognition-Execution (I-PACE) model, also suggest that individuals become disordered users of specific type of different Internet applications as a result of interactions between predisposing factors, moderators and mediators, personality, psychopathology (e.g., depression), and social cognitions (e.g., loneliness, perceived social support). These factors are important individual characteristics that influence the acquisition, development, and

maintenance of specific Internet-use disorders such as PSMU (Brand et al. 2016). Based on both the empirical evidence and the theoretical assumptions, the present study investigated the relationships between creative personality traits and PSMU using a structural equation model, in which self/everyday creativity was the first-level mediator, and depression and loneliness were the second-level mediators.

Creative Personality Traits and Problematic Social Media Use

As noted above, individuals' personality characteristics play an important role on the development and maintenance of PSMU (Brand et al. 2016; Kuss and Griffiths 2011). Previous studies have mainly focused on the Big Five personality traits, while a few others have shown that dark personality traits may have a role in PSMU. Neuroticism, lower agreeableness, introversion, low conscientiousness, low self-esteem, narcissism, and Machiavellianism are among the traits that has been shown to be associated with PSMU (Andreassen et al. 2013; Andreassen et al. 2017; Kircaburun 2016a; Kircaburun et al. 2018b; Kircaburun and Griffiths 2018; Whaite et al. 2018). The relationship between socially undesirable personality traits and PSMU has been interpreted as individuals struggling to build and maintain real-life social relationships, and not being able to fulfill basic human determinants such as the need to feel socially supported and connected (Malone et al. 2012), and in turn, compensating their lack of social stimulation by engaging in social media use (Kircaburun et al. 2018b). However, using social media in order to obtain social gratifications is also an important risk factor for PSMU (Chen and Kim 2013).

Despite the large number of studies on personality, the potential influence of creative personality traits on PSMU has been neglected. Various scholars have attempted to define and classify creative personality traits. Among those, some of the widely accepted classifications have indicated that creative individuals have unique personality facets such as having high internal motivation, being energetic, being a risk-taker, being an independent decision-maker, self-confidence, and curiosity (Barron and Harrington 1981; Iszaj et al. 2017). Another study highlighted creative personality features as including authentic thinking, creative awareness, logical and unordinary thinking, risk-taking, enhanced imagination, being energetic, and needing to remain alone (Sak 2016).

The present study focused on the four dimensions of creative personality, which are task-orientedness, internal motivation, self-confidence, and risk-taking (Sahin and Danışman 2017). Individuals high on task-orientedness (i) are prone to deal with problems even though such problems do not affect or concern them directly, (ii) prefer to try and solve not only easy problems but also the tough ones, and (iii) enjoy trying new things and try new ways of doing certain tasks (Sahin and Danışman 2017). Individuals with higher internal motivation love doing new things, discovering new games and activities, and love solving mind games such as riddles. Self-confidence refers to being confident on one's own abilities to accomplish something compared to others. Finally, risk-taking refers to being independent, authentic, and unpredictable (Sahin and Danışman 2017).

Even though these personality traits have yet to be investigated with PSMU, dimensions of the Big Five theory appear to show similarities with (and help understand) creative personality traits. While task-orientedness may be similar to conscientiousness and extraversion, internal motivation refers to being open to new experiences. Self-confidence can relate with self-esteem, and risk-taking individuals may be high on neuroticism and be less agreeable.

Therefore, it may be assumed that individuals with low task-orientedness, low internal motivation, low self-confidence, and high risk-taking should engage in more PSMU.

The Mediating Role of Self/Everyday Creativity

Creativity has been defined as "the ability to produce new or original ideas that could be used for doing things better, solving problems, making things, helping people" (Richards and Kinney 1990; p.209). According to a recent exploratory study, there are five domains of creativity, comprising self/everyday creativity, scholarly creativity, performance creativity, mechanical/scientific creativity, and artistic creativity (Kaufman 2012). The present study focused on the self/everyday creativity domain. Self/everyday creativity has been referred to in different theories as interpersonal and intrapersonal intelligence (Gardner 2000), creative lifestyle (Ivcevic and Mayer 2009), and interpersonal creativity (Kerr and Vuyk 2013), and has been defined as expressing oneself against others appropriately and originally in everyday life relations and interactions (Ivcevic and Mayer 2009). Self/everyday creativity concerns how well individuals understand other individuals and communicates and deals with them effectively, as well as with individuals' ability to understand themselves (e.g., desires, capacities) and deal with everyday situations (Gardner 2000; Kaufman 2012). As can be inferred from the definitions, self/everyday creativity is a vital component for individuals to be able to maintain healthy social/professional/personal lives.

Indeed, individuals' personality traits affect their self/everyday creativity levels. However, empirical evidence is not consistent on the effects of different dimensions of the Big Five. A review of literature concerning the relationship between personality and adult creativity concluded that while neuroticism was a negative predictor of daily creativity, openness to experience, conscientiousness, and agreeableness were positively related to daily creativity (Batey and Furnham 2006). Another study found that self/everyday creativity was correlated with extraversion, openness to experience, and conscientiousness among undergraduate students (Ivcevic 2007). A recent study with schoolchildren showed that only neuroticism was negatively associated with general creativity (Krumm et al. 2018). While openness to experience was the only predictor of creativity assessed via three different general creativity measures in one study (Batey et al. 2010), only extraversion was found to be associated with all four different measures of general creativity in another (Furnham and Bachtiar 2008). Despite inconsistent results, it is safe to say that personality is an important individual difference that affects general and specific domains of creativity (Batey and Furnham 2006), and individuals who display high creative personality traits (such as task-orientedness, internal motivation, self-confidence, and risk-taking) should demonstrate higher levels of self/everyday creativity.

Even though the relationship between self/everyday creativity and PSMU has yet to be investigated, it is assumed that those individuals low on self/everyday creativity will more likely to report higher PSMU. The Compensatory Internet Use (CIU) model asserts that an individual's addiction to the Internet is a consequence of an attempt to compensate the things individuals lack in real life (Kardefelt-Winther 2014). For instance, individuals with low self/everyday creativity will more likely to be inefficient and less successful in everyday experiences of social interactions and other situations (Pachucki et al. 2010). Therefore, such individuals may be expected to try to compensate these real-life shortcomings or avoid facing interactions and situations as much as possible by engaging in problematic use of social media.

Based on these assumptions and empirical evidence, it is hypothesized that self/everyday creativity will be directly associated with PSMU and will mediate the relationship between creative personality traits and PSMU.

The Mediating Role of Depression and Loneliness

Depression and loneliness are important psychosocial risk factors that have been consistently found to have an association with PSMU (Kuss and Griffiths 2011; Yu et al. 2016; Wegmann et al. 2015). Individuals who experience more intense depressive symptoms and feelings of loneliness are more likely to be problematic users of social media in order to deal with their depressed psychological status and to compensate their need to feel connected to others (Kircaburun et al. 2018b). From an I-PACE model perspective, depression is among the most important psychopathological characteristics, while loneliness is one of the social cognition domains that predicts development and maintenance of different types of specific Internet-use disorders (Brand et al. 2016).

Personality traits are an important predictor of depression and loneliness (Cheng and Furnham 2002; Shi et al. 2015), because they determine how individuals interact with their surroundings. For instance, individuals who are high on agreeableness and extraversion, and low on neuroticism may be expected to construct healthy and successful communication with their social environments, while those who have the reverse of these traits will more likely to experience problems in their social life and become isolated from society (Whaite et al. 2018). Individuals displaying such traits will result in higher feelings of depression and loneliness. Moreover, similar to socially undesirable personality characteristics, those who possess less self/everyday creativity are likely to experience similar problems and may try to avoid responsibility and real-life social interactions as much as possible, again, resulting in higher levels of depression and loneliness (Malone et al. 2012). Based on the aforementioned literature, it is hypothesized that depression and loneliness will be directly associated with PSMU, and will mediate the relationships of creative personality and self/everyday creativity with PSMU.

Methods

Participants

A total of 460 emerging adults aged between 18 and 26 years (M_{age} = 19.74 years, SD = 1.49; 61% female) completed a paper-and-pencil questionnaire. Recruitment for the study was carried out at a public university from Turkey. Participants were told about the study and the inclusion criterion, which was to have an active social media account. All students gave their informed consent to participate in the study and did so voluntarily and anonymously.

Measures

Social Media Use Questionnaire The SMUQ (Xanidis and Brignell 2016) assesses individuals' levels of problematic social media use. The scale has two factors (withdrawal and compulsion) comprising nine items (e.g., "I feel angry, when I am not able to access my social

network account") on a 5-point Likert scale from "never" to "always." Former studies with the Turkish form have reported good internal consistency of the scale (Kircaburun et al. 2018c). Cronbach's alphas of all the scales are shown in Table 1.

Kaufman Domains of Creativity Scale The K-DOCS (Kaufman 2012) assesses five broad domains of creativity: self/everyday, scholarly, performance, mechanical/scientific, and artistic creativity. The present study used only the Self/Everyday Creativity (SEC) domain of the scale. SEC assesses the level of self-report creative behaviors in interpersonal/everyday relationships, comprising nine items (e.g., "Thinking of a polite way to tell someone about a flaw or bad habit", "Mediating a dispute or argument between two friends") on a 5-point Likert scale from "much less creative" to "much more creative". Former studies employing the Turkish version have reported good internal consistency of the scale (Sahin 2016).

Short Depression-Happiness Scale The original SDHS (Joseph et al. 2004) assesses depressive and happy feelings experienced during the past seven days. The Turkish form of the scale comprises two subscales which are depression and happiness (Kircaburun et al. 2018b). The scale comprises six items (three items in each subscale) on a 4-point Likert scale from "never" to "often." In the present study, only the Depression subscale was used (e.g., "I felt that life was meaningless").

Creative Personality Traits Scale The CPTS (Sahin and Danışman 2017) comprises 17 items on a 5-point Likert scale from "never" to "always." The scale assesses four personality dimensions which are task-orientedness (five items, e.g., "I only want to think about the problems that are easy," "I only try and solve the problems that will effect me"), internal motivation (five items, e.g., "Trying new games and activities draw my interest," "I like doing original/new things."), self-confidence (three items, e.g., "Most of the time, I think that I do not have the abilities that most people have," "I cannot trust myself even against the situations that I had easily overcome before"), and risk-taking (four items, e.g., "I enjoy asking unexpected questions to others," "I do not like to be limited by rules."). Former studies using the Turkish form have reported adequate internal consistency of the scale (Sahin and Danışman 2017).

Table 1 Mean scores, standard deviations, score ranges, Cronbach's alphas, and Pearson correlation coefficients of the study variables

	1	2	3	4	5	6	7	8
1. PSMU	–							
2. Loneliness	.26***	–						
3. Depression	.34***	.41***	–					
4. Self-creativity	− .27***	− .40***	− .24***	–				
5. Task-oriented	− .26***	− .32***	− .21***	.37***	–			
6. Internal motivation	− .08	− .21***	− .09	.45***	.28***	–		
7. Self-confidence	− .30***	− .34***	− .40***	.39***	.32***	.21***	–	
8. Risk-taking	.15**	.13**	.14**	.15**	− .02	.26***	− .03	–
Mean	24.10	8.11	7.47	32.27	18.14	20.16	10.90	15.05
SD	6.73	2.39	2.96	5.59	3.65	3.36	2.83	3.08
Score ranges	9–44	4–16	3–12	9–45	7–25	8–25	3–15	4–20
Cronbach's alpha	.83	.62	.87	.82	.73	.74	.79	.59

PSMU problematic social media use

*$p < .05$; **$p < .01$; ***$p < .001$

UCLA Loneliness Scale Short-Form The ULS-4 (Russell et al. 1980) comprises four items (e.g., "I can find companionship when I want it.") on a 4-point Likert scale from "never" to "often" and assesses self-reported loneliness of individuals. Former studies have reported optimal validity and reliability of the scale (Eskin 2001; Russell et al. 1980).

Statistical Analysis

In order to examine the associations between variables, the present study used frequency and descriptive statistics, Pearson's correlation tests, and structural equation modeling (SEM). In SEM, all of the independent, mediator, and outcome variables were taken into model as latent variables. In order to test the model fit, goodness of fit thresholds determined by Hu and Bentler (1999) were used. According to the Hu and Bentler, thresholds for good and acceptable fit values are as follows: root mean square residuals (RMSEA) < .05 is good, standardized root mean square residuals (SRMR) < .05 is good, Comparative Fit Index (CFI) > .95 is good, and Goodness of Fit Index (GFI) > .95 is good; also RMSEA < .08 is acceptable, SRMR < .08 is acceptable, CFI > .90 is acceptable, and GFI > .90 is acceptable. Moreover, significance of total, direct, and indirect effects on the mediator and outcome variables was assessed via using the bootstrapping method with 95% bias-corrected confidence intervals and 5000 bootstrap samples.

Results

Descriptive statistics and Pearson's correlation coefficients are shown in Table 1. Self-confidence and depression were moderately correlated with problematic social media use (PSMU), and loneliness, creativity, task-orientedness, and risk-taking ($r = .15$, $p < .01$) were weakly correlated with PSMU. In order to test the hypothesized model (Fig. 1), structural equation modeling (SEM) was applied. In SEM, all variables were included into the model as latent variables (Fig. 2). After introducing suggested error modifications between TO4-TO5,
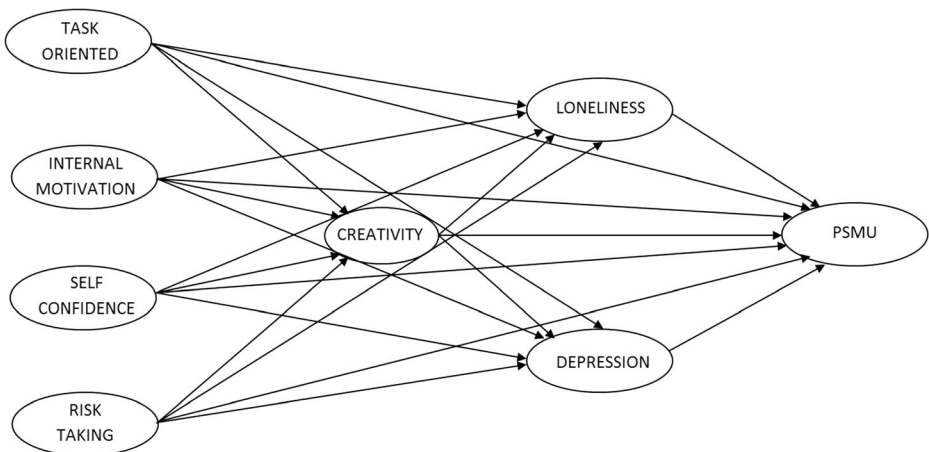
Fig. 1 Hypothesized model. For clarity, correlations between the mediator variables, insignificant path coefficients, and items of everyday creativity variable have not been depicted in the figure. "CREATIVITY" refers to Self/Everyday Creativity
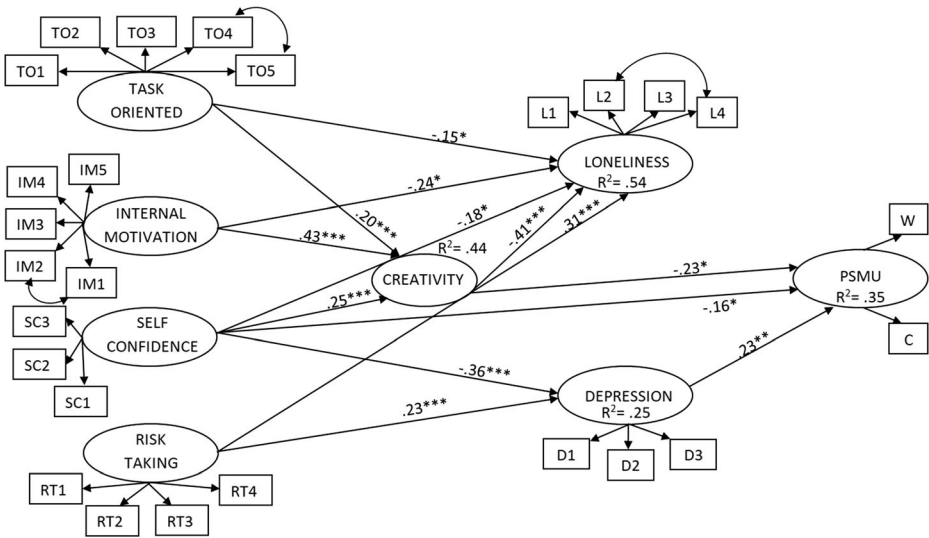
Fig. 2 Final model of the significant path coefficients between variables. For clarity, the correlations between the mediator variables, insignificant path coefficients, and items of self/everyday creativity variable have not been depicted in the figure. "CREATIVITY" refers to Self/Everyday Creativity. *p < .05; **p < .01; ***p < .001

IM1-IM2, IM4-IM5, SEC6-SEC7, SEC7-SEC8, and L2-L4, goodness of fit values indicated acceptable fit to the data ($\chi^2 = 1016.04$, df = 526, χ^2/df = 1.93, RMSEA = .04 [CI 90% (.04, .05)], SRMR = .06, CFI = .90, GFI = .89). Total, direct, and indirect effects of independent and mediator variables on outcome variable are shown in Table 2.

Table 2 Standardized estimates of total, direct, and indirect effects on problematic social media use and mediator variables

	Effect	SE	% explained of total effect
TO → PSMU (total effect)	− .21**	.07	–
TO → PSMU (direct effect)	− .13	.07	62%
TO → PSMU (total indirect effect)	− .08*	.06	38%
TO → SEC → PSMU (total indirect effect)	− .05*	.21	24%
SC → PSMU (total effect)	− .33**	.07	–
SC → PSMU (direct effect)	− .16*	.08	49%
SC → PSMU (total indirect effect)	− .17**	.05	51%
SC → SEC → PSMU	− .06*	.15	18%
SC → DEP→ PSMU	− .08**	.14	24%
RT → PSMU (total effect)	.25**	.08	–
RT → PSMU (direct effect)	.19	.10	76%
RT → PSMU (total indirect effect)	.06	.04	24%
RT → DEP→ PSMU	.05**	.09	22%
SEC → PSMU (total effect)	− .26**	.09	–
SEC → PSMU (direct effect)	− .23*	.12	89%
SEC → PSMU (total indirect effect)	− .03	.07	11%

Only significant indirect effects are shown in the table

TO task-oriented, *SC* self-confidence, *RT* risk-taking, *SEC* self/everyday creativity, *DEP* depression, *LONE* loneliness, *PSMU* problematic social media use

*p < .05; **p < .01; ***p < .001

Among the independent variables, total effects of task-orientedness ($\beta = -.21$, $p < .01$; 95% CI [$-.35$, $-.07$]), self-confidence ($\beta = -.33$, $p < .01$; 95% CI [$-.45$, $-.18$]), and risk-taking ($\beta = .25$, $p < .01$; 95% CI [.08, .40]) on PSMU were weak. Task-orientedness was indirectly associated with PSMU via self/everyday creativity. Self-confidence was directly ($\beta = -.16$, $p < .05$; 95% CI [$-.30$, $-.00$]) and indirectly ($\beta = -.17$, $p < .01$; 95% CI [$-.27$, $-.09$]) associated with PSMU via self/everyday creativity and depression. Risk-taking was indirectly associated with PSMU via depression ($\beta = -.05$, $p < .01$); however, the total indirect effect was not significant. Finally, self/everyday creativity was directly associated with PSMU ($\beta = -.23$, $p < .05$; 95% CI [$-.47$, $-.00$]). The final model explained 35% of the variance in PSMU.

Discussion

The present study investigated the direct and indirect relationships between creative personality traits and problematic social media use (PSMU) via self/everyday creativity, depression, and loneliness. According to the structural equation model, (i) task-orientedness was indirectly associated with PSMU via self/everyday creativity, (ii) self-confidence was directly and indirectly related to PSMU via self/everyday creativity and depression, and (iii) self/everyday creativity was directly associated with PSMU.

Even though the relationship between creative personality traits and PSMU was empirically demonstrated for the first time in the present study, similarities between creative personality traits and Big Five personality traits, and theories such as the I-PACE model (Brand et al. 2016) have suggested that there should be an association between creative personality and PSMU. Self-confidence, which arguably has similarities with self-esteem, was directly associated with PSMU. This result is consistent with the previous studies reporting a negative relationship between self-esteem and PSMU (Andreassen et al. 2017; Kircaburun and Griffiths 2018). Individuals who have low confidence within themselves may be expected to avoid real-life social interactions and try to compensate by receiving their social gratification from social media (Kircaburun et al. 2018b; Kuss and Griffiths 2011). However, not being able to receive needed interactions in social media and problematic use of social media also lead to low self-esteem and dissatisfaction with life (Hawi and Samaha 2017).

Self/everyday creativity was directly associated with PSMU and accounted for the relationships of self-confidence (partially) and task-orientedness (fully) with PSMU. Low self-confidence and task-orientedness were associated with decreased self/everyday creativity, and in turn, self/everyday creativity led to increased PSMU. Self/everyday creativity relates to an individual's ability to manage everyday life situations, social settings, and knowing oneself (Kaufman 2012). A lack of such abilities will cause impairments in everyday real life and push individuals to escape from reality by engaging in excessive social media use. The relationship between low self/everyday creativity and PSMU may also be explained by the strong relationship between emotional intelligence and self/everyday creativity. Emotional intelligence refers to being able to recognize, understand, and manage emotions (Mayer et al. 1999). It is known that low emotional intelligence is an important risk factor for development and maintenance of behavioral addictions (Beranuy et al. 2009; Che et al. 2017; Van Deursen et al. 2015), as well as psychoactive substance use and chemical addictions (Kun and Demetrovics 2010).

Even though loneliness was associated with all creative personality dimensions and self/everyday creativity, it was not a significant predictor of PSMU alongside depression. Depression, on the other hand, was directly associated with PSMU and partially mediated the relationships of risk-taking and self-confidence with PSMU. Low self-confidence and high risk-taking led to

higher depression, and in turn, higher PSMU. This result is consistent with that of previous empirical research and theoretical models (Kaufman 2012; Orth and Robins 2013). Self-confidence is one of the very important constructs that is related to onset and maintenance of depression. Also, individuals with high risk-taking traits are unpredictable and independent (Kaufman 2012). While interacting with others, these features may lead to unwanted social responses and in turn, negative feelings. Depression has already been shown to be one of the important predictors of PSMU (Kircaburun et al. 2018b). Scholars have explained this association with individuals' desire to cope with unpleasant feelings and thoughts and negative psychological status via engaging in excessive social media use (Kuss and Griffiths 2011).

The present study has several limitations. The sample was cross-sectional and non-representative, therefore, the results are unable to demonstrate causal relationships between the variables examined. Consequently, future studies should use longitudinal designs in order to confirm causal relationships between variables examined in the present study. Data regarding creative personality, self/everyday creativity, and PSMU were collected using self-report questionnaires, therefore, several biases may be affecting the results such as social desirability and memory recall. Future studies should use other methodologies (e.g., qualitative or mixed methods) in order to collect data that overcomes some of the problems inherent in using survey methods only. Despite its limitations, the present study is the first to empirically suggest that creative personality traits (i.e., task-orientedness, self-confidence, and risk-taking) and self/everyday creativity are associated with problematic social media use. However, future studies are needed to confirm the findings reported here and should also focus on more detailed and complex investigations of the relationships between the constructs here and other creativity domains.

Compliance with Ethical Standards

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