

# Mediating Roles of Impulsivity and Risk-Taking in the Links of the Dark Triad with Flirting and Dating via Social Media

## Sosyal Medya Üzerinden Flört ve Karanlık Üçlü Kişilik Özellikleri Arasındaki İlişkide Dürtüsellik ve Risk Almanın Aracılık Etkileri

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### ABSTRACT

With the acceleration of communication and access to information, individuals have begun to date via social networking sites. Although online dating has spread among university students recently, studies on this topic are very limited. The present study aimed to investigate the effects of the Dark Triad personality traits (i.e., Machiavellianism, psychopathy, and narcissism) on using Social Networking Sites (SNS) to find partners and face-to-face meeting/dating after flirting via the internet (i.e., face-to-face dating with a partner met via SNS). Furthermore, it was also aimed to identify the mediating roles of risk-taking and impulsivity in the relationships mentioned above. Data were collected from 358 University students (223 females and 135 males) who volunteered to complete the survey packages. The data was analyzed using Structural Equation Modeling (SEM). The age of the participants ranged between 18 and 49 ( $M = 22.67$ ,  $SD = 2.83$ ). The results revealed that narcissism was linked to using SNS to find partners, and impulsivity fully mediated the relationships of Machiavellianism with using SNS to find partners. In addition, the links of psychopathy with using SNS to find partners were partially mediated by impulsivity, with risk-taking fully mediating the effects of psychopathy and narcissism on face-to-face dating with a partner met via SNS. The present research revealed that impulsivity and risk-taking were the common attitudes underlying the links of psychopathy and narcissism with dating someone met via SNS. For individuals who score high on Machiavellianism, a low level of impulsivity is a protective factor; whereas a high level of impulsivity is a triggering factor that leads those with high psychopathy scores to search for partners via SNS. Contrary to expectations, narcissism was not directly associated with face-to-face dating a partner who was met via SNS. This finding may be related to the unidimensional measurement of narcissism, since grandiose narcissism is more likely to be positively associated with this risky and confident behavior, whereas vulnerable narcissism is less likely to have such an association.

**Keywords:** Dating via social network sites, impulsivity, risk-taking, the Dark Triad personality traits

**ÖZ**

İletişimin ve bilgiye erişimin hızlanmasıyla birlikte, bireylerin sosyal paylaşım siteleri yardımı ile partner bulma davranışları da artmaktadır. Son yıllarda, üniversite öğrencileri arasında internet üzerinden flörtleşme yaygınlaşmaya başlasa da bu konudaki çalışmalar oldukça sınırlıdır. Bu çalışmanın amacı, Karanlık Üçlü kişilik özelliklerinin (Makyavelizm, psikopati ve narsisizm), partner bulmak için sosyal paylaşım sitelerini kullanma ve sosyal paylaşım siteleri aracılığıyla flört ettikten sonra yüz yüze görüşme davranışları üzerindeki etkilerini araştırmaktır. Ayrıca, Karanlık Üçlü kişilik özelliklerinin, partner bulmak için sosyal paylaşım sitelerini kullanma ve sosyal paylaşım siteleri aracılığıyla flört ettikten sonra yüz yüze görüşme davranışları ile ilişkilerinde, risk alma ve dürtüsellüğün aracı rolleri incelenmiştir. Araştırmaya gönüllü olarak katılan 358 üniversite öğrencisinden (223 kadın ve 135 erkek) veriler toplanmış ve Yapısal Eşitlik Modellemesi (YEM) kullanılarak analiz edilmiştir. Katılımcıların yaş aralıkları 18 ve 49 arasında değişmektedir ( $Ort. = 22,67$ ,  $SS = 2,83$ ). Sonuçlar, narsisizmin partner bulmak için sosyal paylaşım sitelerini kullanma ile ilişkili olduğunu ve dürtüsellüğün, Makyavelizm ve partner bulmak için sosyal paylaşım sitelerini kullanma arasındaki ilişkiye aracılık ettiğini göstermiştir. Ek olarak, dürtüsellüğün psikopatinin partner bulmak için sosyal paylaşım sitelerini kullanma davranışıyla ilişkisinde aracılık ettiği ve risk alma tutumunun da psikopati ve narsisizmin sosyal paylaşım siteleri üzerinden tanışılan bir partnerle yüz yüze görüşme davranışına aracılık ettiği bulunmuştur. Bu araştırma, dürtüsellik ve risk almanın, psikopati ve narsisizm ile sosyal paylaşım siteleri aracılığıyla tanışılan biriyle yüz yüze tanışma arasındaki ilişkinin altında yatan ortak tutumlar olduğunu göstermiştir. Makyavelizm skoru yüksek olan bireyler için düşük düzeyde dürtüsellik koruyucu bir faktörken; yüksek düzeyde dürtüsellik, psikopati puanı yüksek olanları sosyal ağlar üzerinden eş aramaya iten tetikleyici bir faktördür. Beklenenin aksine, narsisizm, sosyal paylaşım siteleri aracılığıyla tanışılan bir partnerle yüz yüze görüşme ile doğrudan ilişkili bulunmamıştır. Bu bulgu, narsisizmin tek boyutlu ölçümüyle ilgili olabilir, çünkü bu riskli ve yüksek özgüven içeren davranışla büyülenmeci narsisizmin pozitif yönde, kırılğan narsisizmin ise negatif yönde ilişkili olması daha olasıdır.

**Anahtar Kelimeler:** Sosyal ağ siteleri üzerinden flört, dürtüsellik, risk alma, Karanlık Üçlü kişilik özellikleri

With the acceleration of online communication and increased use of social media, individuals have found a new way to meet their romantic partners: the internet. Online dating means using the internet to find or contact potential romantic partners. In conjunction with the massive spread of online dating, especially among university students in recent years, studies on this topic are gradually increasing (e.g., Alexopoulos et al., 2020; Scannell, 2019). Studies have generally focused on the online dating applications (e.g., Tinder; Gatter & Hodkinson, 2016), the possibility of abusing the partner after using them (Van Ouytsel et al., 2017), the relationship between using online dating applications and sexual abuse (Choi et al., 2018), personality traits and attachment styles as antecedents of online dating (e.g., Fowler & Both, 2020; Jin & Martin, 2015; Jonason & Bulyk, 2019; Sevi, 2019a), and motivations for using online dating applications (e.g., Solis & Wong, 2019; Sumter et al., 2017; Timmermans & De Caluwé, 2017).

Most studies have focused on the antecedents and consequences of online dating via applications such as Tinder (e.g., Gatter & Hodkinson, 2016; Sevi, 2019a, 2019b). However, individuals may prefer to find a partner through social media rather than online dating applications, especially in more conservative countries. Although, there is no study investigating the rate of individuals using online dating applications in Turkey (at least to our knowledge), women were found to be afraid of being stigmatized when using online dating applications in Turkey (C6bek & Ergin, 2021). Compared to online dating, the number of studies investigating the antecedents and effects of using Social Network Sites (SNS) for finding partners is very limited (e.g., Paul, 2014). The present study aimed to examine the effects of the Dark Triad (DT) personality traits (i.e., Machiavellianism, psychopathy, and narcissism) on using SNS to find partners and face-to-face meeting/dating after flirting via the internet (i.e., face-to-face dating with a partner met via SNS). Dating someone who was met via SNS face-to-face is a riskier behavior than online flirting (Mayshak et al., 2020). However, most studies have only focused on the relationships between the DT and online dating behaviors (e.g., Freyth, & Batinic, 2021; Jonason & Bulyk, 2019). The present study is among the first attempts to reveal the mediated relationships between the DT traits and actual dating behaviors with someone who was met via SNS. It was also aimed to investigate the mediating roles of risk-taking and impulsivity in the relationships of the DT personality traits with using SNS to find partners and face-to-face dating with those partners. Although the literature revealed the direct relationships between the DT traits and online and offline dating be-

haviors (e.g., Sevi, 2019; Tajmiriyahi, 2020), the underlying psychological processes involved in these relationships have been the focus of very few studies (e.g., Freyth & Batinic, 2021).

### **The DT and Dating Behaviors**

Psychopathy, narcissism, and Machiavellianism were named as the DT personality traits. While they are related, they are also distinct characteristics that operate at the subclinical level (Paulhus & Williams, 2002). Psychopathy is characterized by the lack of moral values and regret, as well as the execution of uncontrolled behavior (Arrigo & Shipley, 2001). It is also defined as the tendency to exhibit antisocial behaviors such as delinquency (Cleckley, 1955; Hare, 1993). Subclinical narcissism is characterized by a high desire for appreciation, excessive need for dominance, and a lack of empathy (Paulhus & Williams, 2002). Braginsky (1970) defined Machiavellianism as a lasting characteristic which consists of being manipulative and vindictive, as well as having a strong tendency to rationalize any means to the desired aim.

It is known that people express themselves via their account profiles when they use SNS to find partners because they want to attract, chat with, and eventually someone they might encounter on social media. Personality traits like narcissism were found to play a crucial role in both online behaviors and attitudes towards social media (Correa et al., 2010; Kuss & Griffiths, 2011; Leung, 2015). People who scored high on narcissism had a higher number of online friends and uploaded more photos than those who had low scores on narcissism (Ong et al., 2011). Wang and colleagues (2012) mentioned that social media users who scored high on narcissism were more likely to load their fascinating photos on social media. They were also more likely to update their status for self-presentation than social media users who scored low on narcissism. Narcissistic individuals usually use their social media accounts to exhibit wealth, success, and attractiveness, which would satisfy their self-promotion needs (Buss & Chiodo, 1991; Wallace & Baumeister, 2002). In addition, people who have narcissistic tendencies present themselves more favorably to attract others and build their ideal selves on social media (Buffardi & Campbell, 2008; Mehdizadeh, 2010). People who scored high on narcissistic personality features also used self-regulatory strategies, like relationship management, to feel more special (Bergman et al., 2011). Consequently, it is expected that narcissists would be more enthusiastic about initiating relationships through online social networks (Buffardi & Campbell, 2008).

Compared to other personality traits, the DT traits were better predictors of using online applications for dating and risky behaviors (Freyth & Batinic, 2021). The DT personality trait levels for Tinder users were found to be significantly higher than non-users (Sevi, 2019b). Jonason and Bulyk (2019) also found that among men, the psychopathy and narcissism levels of Tinder users were significantly higher than non-users.

Individuals who have high scores on Machiavellianism tend to manipulate others to reach their goals (Gunnthorsdottir et al., 2002). They are expected to use all communication tools to reach their aims and satisfy their needs. Additionally, an experimental study showed that for people who scored high on Machiavellianism, "...involving in face-to-face interaction with other parties" was the *sine qua non* for achieving their aims (Christie & Geiss, 1968). Therefore, it is to be expected that individuals who score high on Machiavellianism would be more likely to date partners face-to-face whom they met via SNS than those who score low on Machiavellianism.

Although it was found that Tinder users' psychopathy levels were significantly higher than non-users (Freyth & Batinic, 2021; Sevi, 2019b), rather than focusing on the direct associations of psychopathy to SNS usage to find partners and date someone they met via SNS, the present study aimed to contribute to the literature by identifying the underlying psychological mechanism between psychopathy and SNS usage to find partners. Therefore, the direct relationship between psychopathy and SNS usage to find partners and date someone who was met via SNS was not hypothesized in the present study. In line with the theoretical background and the previous findings, the first three hypotheses of the present study are generated as follows:

*H1a.* Narcissism is positively associated with using SNS to find partners.

*H1b.* Narcissism is positively associated with face-to-face dating a partner who was met via SNS.

*H2.* Machiavellianism is positively associated with face-to-face dating a partner who was met via SNS.

### **Mediating Effects of Risk-Taking and Impulsivity in the Relationships of the DT with Outcome Variables**

Although some people abstain from risky behaviors and some are inclined to take risks, in daily life, every individual may engage in risky behaviors in some circumstan-

ces. Risk-taking is defined as a tendency to inherently select dangerous actions (Keinan et al., 1984). Stress-inducing situations were more attractive for individuals who scored high on risk-taking (Robinson, 1985). In the literature, it was found that individuals believed online dating was risky behavior (Couch et al., 2012). Online dating, and especially face-to-face dating with partners met via the internet, may be a risky behavior because individuals can easily disguise their real identities and lie about their true intentions on social media and/or the internet, making potential partners vulnerable to possible threats. Couch and Liamputtong (2007) found that online daters' self-confidence about their risk-taking behavior was very high. Another study found that individuals who scored high on sensation seeking dated via the internet more frequently than individuals who scored low on sensation seeking (Chan, 2017). Individuals who score high on risk-taking are expected to date via SNS and meet face-to-face with partners met via SNS more frequently to satisfy their sensation-seeking needs than those who score low on risk-taking. Likewise, it was found that individuals' risk-taking levels predicted their Tinder use (Fowler & Both, 2020). Moreover, Sevi (2019a) found that Tinder users were more likely to put their health and well-being at risk than non-users. He argued that meeting someone without knowing that person fairly well and then having a romantic or sexual relationship with that person puts them in a potentially vulnerable situation. Thus, the next set of hypotheses of the present study is generated as follows:

*H3a.* Risk-taking is positively associated with using SNS to find partners.

*H3b.* Risk-taking is positively associated with face-to-face dating a partner who was met via SNS.

Impulsivity is conceptualized as a lack of control of thoughts and behaviors and is broadly described as behaving without thinking (Whiteside & Lynam, 2001). Highly impulsive individuals may quickly begin to speak and flirt with others via SNS because the accessibility to potential partners on SNS is higher than in traditional offline settings. However, impulsivity may not be an antecedent of face-to-face dating with a partner met via SNS because of the time gap between online flirting and the actual meeting. Impulsive individuals may focus on other events or subjects in the time gap between online flirting and face-to-face dating and may or may not date face-to-face with partners they meet via SNS. Therefore, it was suggested that impulsivity may be one of the antecedents of using SNS to find partners, but not face-to-face dating with a partner met via SNS. As such, the following is the current study's fourth hypothesis:

*H4.* Impulsivity is positively associated with using SNS to find partners.

As mentioned above, Machiavellians are defined as manipulators with a sense of self-control in their efforts to reach their goals (Jones & Paulhus, 2011). Therefore, individuals who score high on Machiavellianism are expected to score low on impulsivity. However, research findings on the relationship between Machiavellianism and impulsivity are controversial. Some studies found a positive link between Machiavellianism and impulsivity (e.g., Crysel et al., 2013), whereas others found no relationship (e.g., Malesza & Ostaszewski, 2016). Nevertheless, in line with the theoretical background regarding the definition of Machiavellianism (Jones & Paulhus, 2011), it was suggested that Machiavellians are likely to control their urges to obtain their desired ends and are not likely to engage in impulsive acts. Therefore, it was expected that Machiavellianism would be negatively related to impulsivity, which in turn, would be positively related to using SNS to find partners. Thus, the fifth hypothesis of the present study is generated as follows:

*H5.* Impulsivity mediates the link between Machiavellianism and using SNS to find partners.

In the literature, narcissistic personality disorder was associated with high risk-taking behaviors such as gambling (Lakey et al., 2008) and risky driving (Britt & Garrity, 2006). Emmons (1981) suggested that subclinical narcissism and sensation-seeking were highly related. Consistently, Foster and colleagues (2009) found a positive association between narcissism and risk-taking with the partial mediating role of perceived benefits. In addition, narcissistic individuals covet rewards, with this desire potentially preventing them from realizing losses related to risky behaviors (Lakey et al., 2008). Campbell and colleagues (2004) argue that narcissistic individuals are likely to engage in risky behaviors because they are overconfident about their talents, power, and capacities. Therefore, it was expected that narcissism would be positively related to risk-taking, which in turn, is positively associated with using SNS to find partners and face-to-face dating a partner who was met via SNS. Thus, the next set of hypotheses of the present research is generated as follows:

*H6a.* Risk-taking mediates the link between narcissism and using SNS to find partners.

*H6b.* Risk-taking mediates the link between narcissism and face-to-face dating a partner who was met via SNS.

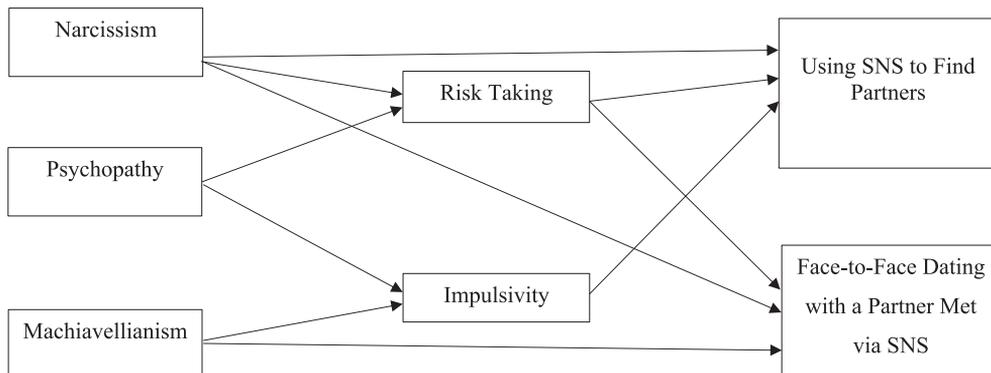
Impulsivity, antisocial behaviors, and a lack of interpersonal and emotional relations are the characteristics of psychopathy (Hare, 1993). Jones and Paulhus (2011) found that psychopathy was positively associated with both overall and dysfunctional impulsivities. Previous studies have also presented evidence for the association between psychopathy and risk-taking (e.g., Grover & Furnham, 2021; Hosker-Field et al., 2016). Psychopathic individuals are deficient in preventing their antisocial tendencies, and because of this deficiency, they may engage in risky behaviors (Stanwix & Walker, 2021). Therefore, there is an expected indirect association between psychopathy and using SNS to find partners, as well as psychopathy and face-to-face dating a partner met who was via SNS (Figure 1). Consequently, the next hypotheses are generated as follows:

*H7.* Impulsivity mediates the link between psychopathy using SNS to find partners.

*H8a.* Risk-taking mediates the link between psychopathy and using SNS to find partners.

*H8b.* Risk-taking mediates the link between psychopathy and face-to-face dating a partner who was met via SNS.

**Figure 1**  
*Proposed Model of the Study*



## Method

### Participants

The data were collected from 358 university students [223 females (62.3%), 135 males (37.7%)] in Turkey.<sup>1</sup> The inclusion criterion for participation was to have flirted

<sup>1</sup> The data were collected right before the COVID-19 pandemic. Therefore, the results are not affected by the pandemic-related behavioral and/or attitudinal changes.

via the internet or SNS at least once. The participants' ages ranged from 18 to 49, with a mean of 22.68 ( $SD = 2.84$ ). The most frequently used applications by the participants were Instagram (75%), Twitter (14.17%), Facebook (4.72%), Tinder (2.22%), and others (3.89%), respectively. While 39.7% of participants were currently in a romantic relationship, 60.3% were single. The mean relationship duration of 143 participants who declared that they were in a relationship was 1.9 ( $SD = 1.77$ ) years.

## Measures

### *Using SNS to Find Partners*

The participants' SNS usage to find partners was measured by asking the frequency of meeting with unknown individuals via SNS with the purpose of dating. Responses were given via a 6-point Likert scale. Participants were asked to choose the following answer to the question: 1 (never), 2 (one or two people per year), 3 (one or two people per 6 months), 4 (one or two people per month), 5 (one or two people per week), or 6 (one or two people a day).

### *Face-to-Face Dating with a Partner Met via SNS*

The participants' face-to-face dating with a partner met via SNS was measured by asking them the approximate number of people they met via SNS that led to a face-to-face meeting. Responses were given by using a 5-point Likert scale. Participants were asked to choose from the following to answer the question: 1 (none of them), 2 (less than half), 3 (half of them), 4 (more than half), or 5 (almost all of them).

### *Short Dark Triad-Turkish (SD3-T)*

The DT personality traits were assessed by 27-item scale developed by Jones and Paulhus (2014) and adapted to Turkish by 6zsoy and colleagues (2017). The participants reported their answers using a 5-point Likert-type scale ranging from 1 (strongly disagree) to 5 (strongly agree). The scale consisted of three dimensions which were psychopathy, Machiavellianism, and narcissism, with each subscale including nine items. A sample item of the psychopathy subscale is: "People who mess with me always regret it." A sample item of the Machiavellianism subscale is: "It's not wise to tell your secrets." A sample item of the narcissism subscale is: "I have been compared to famous people." The reliability analyses showed that one reverse coded item (I have never gotten into trouble with the law) of the psychopathy subscale had a very low inter-item total correlation (-.05). After excluding this item from the subscale, Cronbach's alpha

coefficient of the 8-item psychopathy subscale was 0.70. Furthermore, Cronbach's alpha coefficients of the narcissism and Machiavellianism subscales were both found to be 0.70 in the present study.

### ***Risk-taking***

The risk-taking levels of the individuals were assessed by the 5-item risk-taking subscale of the Multidimensional Self-Destructiveness Scale developed by Persing and Schick (1999) and adapted to Turkish by Özkan and colleagues (2002). Responses were given on a 5-point Likert-type scale ranging from 1 (true) to 5 (false). In the current study, Cronbach's alpha reliability coefficient of the subscale was 0.73.

### ***Barratt Impulsiveness Scale***

The participants' impulsivity levels were assessed by BIS-11 (Patton et al., 1995). The initial scale was developed by Barratt (1959). The 15-item short form of the scale was adapted to Turkish by Tamam and colleagues (2013). Responses were given on a 4-point Likert-type scale ranging from 1 (never) to 5 (always). The scale consisted of three dimensions: attentional impulsivity, motor impulsivity, and non-planning. Each dimension was assessed by five items. Sample items include: "I don't "pay attention." (attentional impulsivity), "I do things without thinking." (motor impulsivity), and "I say things without thinking." (non-planning). The internal consistency reliability coefficient of the scale was 0.83 in the present study.

### **Procedure**

Data were collected face-to-face by giving participants pencil-paper questionnaires. Psychology undergraduate students were given extra credit for their participation in the study. The informed consents of all the participants were received via a form detailing the content of the study, and the participants' rights to withdraw from the study at any time. The current study was approved by the Cankaya University Social Sciences and Humanities Scientific Research and Publication Ethics Committee.

### **Data Analysis**

Structural equation modeling without latent variables (path analysis) was used to test the hypothesized heuristic model ( $M_1$ ) by using the AMOS 24.0 (Arbuckle, 2013) software, with the indirect effects being tested using bootstrapped standard errors. The error terms of the DT personality traits and the error terms of using SNS to find partners and face-to-face dating a partner who was met via SNS were allowed to covary in the model testing.

## Results

Table 1 shows the means, standard deviations, and correlation matrices of the variables. The path analysis results showed that the  $M_1$  provided a good fit to the data ( $\chi^2(N = 358, df = 7) = 1.76, TLI = .96, CFI = .99, NFI = .97, RMSEA = .05; p > .05$ ).<sup>2</sup> The paths from narcissism and impulsivity to using SNS to find partners ( $\beta = .13, p < .05, 95\% CI [.02, .24]$ ;  $\beta = .10, p < .05, 95\% CI [.001, .21]$ , respectively), from risk-taking to face-to-face dating with a partner via SNS ( $\beta = .21, p < .001, 95\% CI [.11, .32]$ ), from psychopathy and Machiavellianism to impulsivity ( $\beta = .55, p < .001, 95\% CI [.44, .65]$ ;  $\beta = -.20, p < .001, 95\% CI [-.32, -.08]$ , respectively), and from psychopathy and narcissism to risk-taking ( $\beta = .23, p < .001, 95\% CI [.11, .33]$ ;  $\beta = .15, p < .01, 95\% CI [.03, .24]$ , respectively) were significant (see Figure 2). Supporting the *H5*, impulsivity fully mediated the relationships of Machiavellianism with using SNS to find partners. Consistent with the *H7*, the link of psychopathy with using SNS to find partners was fully mediated by impulsivity. Partially supporting the *H1, H3, H6, and H8*, narcissism was positively linked to using SNS to find partners (*H1a*), risk-taking was positively associated with face-to-face dating with a partner met via SNS (*H3b*), and risk-taking fully mediated the links of narcissism and psychopathy with face-to-face dating a partner who was met via SNS (*H6b* and *H8b*, respectively). Furthermore, psychopathy and narcissism had significant indirect effects on face-to-face dating a partner met who was via SNS (indirect effect size for psychopathy = .09,  $p < .05$ ; indirect effect size for narcissism = .06,  $p < .05$ ). Likewise, psychopathy and Machiavellianism had significant indirect effects on using SNS to find partners (indirect effect size for psychopathy = .14,  $p < .05$ ; indirect effect size for Machiavellianism = -.04,  $p < .05$ ). Contrary to *H1b* and *H2*, narcissism and Machiavellianism were not significantly related to face-to-face dating a partner who was met via SNS.<sup>3</sup>

- 2 Although the direct link of psychopathy to using SNS to find partners and face-to-face dating with a partner met via SNS were not hypothesized, an alternative model in which paths mentioned above were included along with the hypothesized paths was also tested. The results showed that the alternative model also provided good fit to the data ( $\chi^2(N = 358, df = 5) = 1.34, TLI = .97, CFI = .99, NFI = .98, RMSEA = .04; p > .05$ ). However, the direct link of psychopathy to using SNS to find partners and face-to-face dating with a partner met via SNS were insignificant ( $\beta = .06, p = .36; \beta = -.01, p = .93$ , respectively).
- 3 In order to examine differences in the DT levels, risk taking levels, impulsivity, using SNS to find partners and face-to-face dating with a partner met via SNS between male and female participants, independent t- tests were performed. It was found that psychopathy, Machiavellianism, risk taking, using SNS to find partners and face-to-face dating with a partner met via SNS scores of males were significantly higher than females ( $t(355) = -3.11, p = .002; t(318) = -2.64, p = .009; t(355) = -2.55, p = .01; t(242) = -3.44, p = .001; t(259) = -4.15, p < .001$ , respectively). Since the variables used in the study significantly differentiated across gender, hypotheses

**Table 1**

*Descriptive Statistics, Intercorrelations, and Internal Consistencies of the Study Variables (N = 358)*

Variables	Mean	SD	Min	Max	1	2	3	4	5	6	7	8	9
1. Age	22.68	2.84	18	49	-	.06	.01	-.03	.02	-.05	-.16**	.06	.07
2. Gender	-	-	-	-	-	-	.12*	.05	.15**	.02	.11*	.18**	.21**
3. Machiavellianism	3.26	.67	1.33	5			(.70)	.42**	.58**	.12*	.26**	.10	.12*
4. Narcissism	3.17	.62	1.67	5				(.70)	.39**	.10	.24**	.16**	.15**
5. Psychopathy	2.51	.70	1	4.5					(.70)	.43**	.29**	.16**	.11*
6. Impulsivity	2.11	.49	1	3.53						(.83)	.21**	.11*	-.01
7. Risk Taking	3.49	.83	1	4.8							(.73)	.13*	.24**
8. Using SNS to Find Partners	2.81	1.32	1	6								-	.30**
9. Face-to-Face Dating with a Partner Met via SNS	2.52	1.22	1	5									-

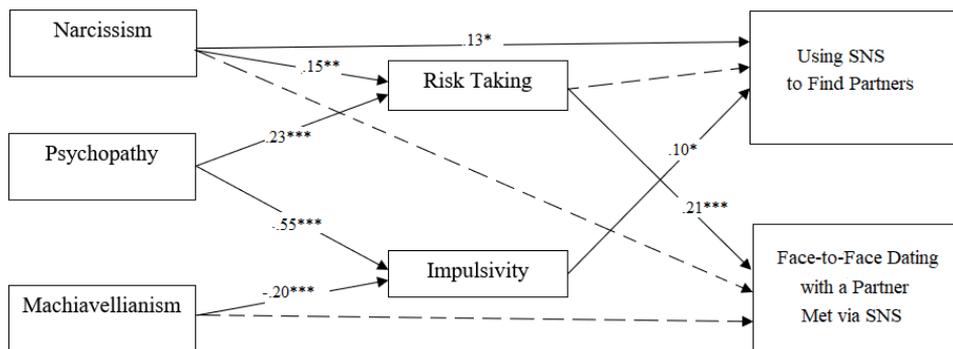
Note. Numbers on the Diagonal are Cronbach's Alpha coefficients. Gender was coded as "1" for females and "2" for males.

\*\* Correlation is significant at the 0.01 level (2-tailed).

\* Correlation is significant at the 0.05 level (2-tailed).

**Figure 2**

*The Standardized Parameter Estimations of the Proposed Mediation Model*



Note. All paths denoted by solid lines are significant at  $p < .05$ ,  $p < .01$ , or  $p < .001$  (the paths denoted by dashed lines are not significant).

\*\*\* Significant at the .001 level \*\* Significant at the .01 level \* Significant at the .05 level.

were also tested with controlling the gender in SEM. The results showed that the model controlling the gender also provided good fit to the data ( $\chi^2(N = 358, df = 6) = 0.89$ , TLI = 1.00, CFI = 1.00, NFI = .98, RMSEA = .00;  $p > .05$ ). Similar with  $M_1$ , the paths from narcissism and impulsivity to using SNS to find partners ( $\beta = .13$ ,  $p = .015$ , 95% CI [.03, .23];  $\beta = .10$ ,  $p = .05$ , 95% CI [.001, .21], respectively), from risk-taking to face-to-face dating with a partner via SNS ( $\beta = .20$ ,  $p < .001$ , 95% CI [.09, .29]), from psychopathy and Machiavellianism to impulsivity ( $\beta = .56$ ,  $p < .001$ , 95% CI [.44, .67];  $\beta = -.21$ ,  $p < .001$ , 95% CI [-.33, -.10], respectively), and from psychopathy and narcissism to risk-taking ( $\beta = .22$ ,  $p < .001$ , 95% CI [.10, .31];  $\beta = .16$ ,  $p = .004$ , 95% CI [.03, .24], respectively) were significant.

## Discussion

The current study aimed to examine the indirect effects of the DT personality traits on using SNS to find partners and face-to-face dating a partner who was met via SNS through their influences on risk-taking and impulsivity. In addition, the study investigated the direct effects of narcissism on using SNS to find partners and face-to-face dating a partner who was met via SNS, as well as Machiavellianism with face-to-face dating a partner who was met via SNS. In general, the results supported the proposed model.

As expected, narcissism was a significant predictor of using SNS to find partners, with risk-taking fully mediating the link between narcissism and face-to-face dating a partner who was met via SNS. Narcissistic individuals were more likely to use SNS to find partners. They were also likely to engage in risky behaviors, which, in turn, were positively associated with face-to-face dating individuals met via SNS. These findings of the Turkish sample supported previous research that showed that narcissistic individuals use SNS to attract others and promote self-esteem (e.g., Mehdizadeh, 2010) and that there were positive relationships between narcissism and risk-taking (Freyth & Batinic, 2021). Contrary to the expectations, the direct link between narcissism and face-to-face dating a partner who was met via SNS was not significant. One explanation may be that narcissism was measured as a unidimensional construct in the present study. The literature shows that narcissism can be divided into two dimensions according to individuals' defensive strategies as responses to stressors (Besser & Priel, 2010). The first type, grandiose narcissism, is defined as having high levels of dominance, aggression, entitlement, and grandiosity, as emphasized in the definition of narcissistic personality disorder. On the other hand, individuals who score high on the second type, vulnerable narcissism, are argued to use a "narcissism mask" to protect their fragile self-esteem (Miller et al., 2010). These individuals use interpersonal comments to increase their self-esteem; they generally experience high anxiety levels in interpersonal relations and are highly sensitive to interpersonal rejection and threats in interpersonal communications (Besser & Priel, 2009). Individuals who score high on vulnerable narcissism may be less likely to prefer face-to-face dating a partner met via SNS than grandiose narcissistic individuals in an attempt to protect their fragile self-esteem from possible adverse outcomes. Future studies may examine these two types of narcissism separately and investigate whether or not these two types of narcissism display differential relationships with our outcome variables.

Supporting the expectations of the current study, there was a significant positive relationship between risk-taking and face-to-face dating a partner who was met via SNS. These findings confirm the proposition of the study that dating someone is a riskier behavior than online flirting, as individuals are more vulnerable to potential physical, psychological, and sexual harassment in face-to-face dating than in online interaction. A risk-taking attitude is an essential predictor of face-to-face dating a partner met via SNS. That said, this study is among the first attempts to focus on face-to-face dating a partner met via SNS. As such, future studies are encouraged to examine other predictors of this behavior. However, the path from risk-taking to using SNS to find partners was insignificant. This finding can be explained by the perceptions of online dating of individuals who were high on risk-taking. Smith and Anderson (2016) showed that 27% of individuals between 18 and 24 have used online dating sites or applications at least once. Nowadays, dating via the internet and/or SNS is considered the typical way of dating (Rosenfeld et al., 2019). In the present study, the average age of the participants was 22.68. At this age, online dating may be perceived as a usual activity rather than a risky behavior. Due to their higher literacy in SNS, younger people may acknowledge the risks and be prepared for them. Future studies can investigate the links between these variables with different age groups to reveal possible main effects of age on using SNS to find partners as well as on face-to-face dating a partner who met via SNS and the moderating effects of the risk-taking tendency on these relationships.

As expected, the positive relationship between psychopathy and using SNS to find partners was fully mediated by impulsivity. According to Birthrong and Latzman (2014), individuals with high impulsivity levels are more prone to participate in dangerous sexual activities, such as having intercourse with strangers, than those with low impulsivity levels. Individuals may use social networking sites to find partners to satisfy their urges faster and effortlessly. Furthermore, impulsivity was positively related to inappropriate online sexual activity (Levi et al., 2020). The possibility of having amusing and exciting conversations online with a stranger may work as a motivator for impulsive individuals to meet their expectations without delay (Gottfredson & Hirschi, 1990). Consistent with the present study's findings, Sawyer and colleagues (2018) found that impulsivity scores were higher for individuals who used dating applications than for those who did not use them.

The findings revealed that the path from impulsivity to face-to-face dating with a partner met via SNS was insignificant. One explanation may be derived from the posi-

ve association between impulsivity and sexual promiscuity, which manifests as increased dating behavior. Dating behavior may result from having more positive attitudes about casual sex and wanting to have it more quickly without delay (Webster & Crysel, 2012). The time gap between using SNS to find partners and face-to-face dating may spirit off the link between impulsivity and face-to-face dating a partner met via SNS. Those who score high on impulsivity may be satisfied with the immediate flirting experience provided by using SNS to find partners; however, they may or may not be eager to have face-to-face dating, which would require effort and time, depending on the partners they have. Future studies, therefore, are suggested to investigate the moderating effects of attractiveness, as well as the other characteristics of the partners met via SNS in the relationship between impulsivity and face-to-face dating with a partner met via SNS.

As expected, the relationship between Machiavellianism and using SNS to find partners was fully mediated by impulsivity. Machiavellianism may be a protective factor for using SNS to find partners, which may be risky behavior, only through its negative effect on impulsivity. In addition, the direct association between Machiavellianism and face-to-face dating a partner met via SNS was not significant. Yet, it can be speculated that this association may be moderated by such variables as the degree of perceived benefits of face-to-face dating a specific person who was met via SNS. Machiavellians may date a partner met via SNS face-to-face only when assured of their physical or psychological satisfaction. Future studies, which can employ quasi-experimental designs, are suggested to investigate the moderating roles of various beliefs regarding the potential benefits of specific partners in the link between Machiavellianism and face-to-face dating with a partner met via SNS.

One of the theoretical contributions of the study is focusing on the predictors of using SNS to find partners, which demonstrates the effects of the DT personality traits, risk-taking, and impulsivity on using SNS to find partners. Although there are no empirical studies to support this proposition yet, compared to more liberal cultural contexts, in conservative cultural contexts characterized by high traditionalism, patriarchy, and collectivism, using online dating applications is not likely to be socially acceptable. For instance, 6bek and Engin (2021) stated that in the literature findings obtained from North America and Europe, individuals defined Tinder as a liberating drive in romantic relationships, while Tinder users in Turkey were aware of the negative perceptions of

the application. They also underlined that applications such as Tinder are influenced by cultural stereotypes and prejudices, exemplifying this opinion in their findings of Turkish women who experience a fear of stigma when using Tinder. Therefore, individuals in these cultures (like those in Turkey) may prefer SNS, such as Twitter or Instagram, for finding partners rather than applications such as Tinder. Future studies may focus on antecedents and consequences of using SNS to find partners as well as the moderating effects of societal norms in these relationships.

Another theoretical contribution of the present study is to reveal the similar and differential relationships of the DT traits with impulsivity and risk-taking. More specifically, risk-taking seems to be the common characteristic of narcissism and psychopathy, as they were both positively associated with risk-taking, which in turn, was positively related to face-to-face dating a partner met via SNS. On the other hand, psychopathy was positively related to impulsivity, while Machiavellianism was negatively related to impulsivity, which in turn, was positively associated with using SNS to find partners. These findings contribute to the theory by supporting the definition of the DT traits as related but distinct traits. One practical implication of these results is that the DT traits should be treated as positively related but unique traits, even consisting of opposite characteristics, by practitioners who design and employ intervention programs for individuals who score high on the DT traits.

Another practical implication of the present study is related to the finding that the risk-taking tendency was not found to be associated with using SNS to find partners, although it was positively related to face-to-face dating a partner who was met via SNS. This result may imply that young individuals may not be fully aware of the potential dangers of finding a romantic partner or flirting via SNS. Although using SNS to find partners may not be as risky as face-to-face dating a partner met via SNS, because online flirting may involve video or photograph exchange and malicious individuals may abuse these materials, training or intervention strategies regarding the safe usage of SNS and the internet may benefit from focusing on the perceived risk of using SNS to find partners. Moreover, since impulsivity was positively related to using SNS to find partners, training and intervention programs are suggested to emphasize careful and elaborative decision-making strategies, especially for the at-risk groups, such as young individuals who score high on psychopathy.

No studies are without limitations, and like every research, the current study has some limitations also. Firstly, the study was cross-sectional by design, and the results were based on correlational rather than causal relationships. Although showing true causal mediation would require manipulating one or more of the DT traits in one experiment and then impulsivity and risk-taking in a subsequent experiment (Bullock et al., 2010; Giner-Sorolla, 2016), statistical mediation effects are also argued to be a mediation and not a suppression nor have confounding effects (MacKinnon et al., 2000). In addition, personality traits like the DT were more stable characteristics (Costa & McCrae, 1994) than the frequency of using SNS to find partners and face-to-face dating a partner met via SNS and, therefore, it is plausible to assume that the DT personality traits were the antecedents of these behaviors rather than the vice versa.

Secondly, the sample was moderate in size, and the data were collected as self-reports. In future studies, aggregate scores of the DT personality traits obtained from the individuals and their significant others may be used while testing the proposed and improved models. Thirdly, undergraduate students were used as a sample, which relatively restricted the age range of the participants. However, previous studies revealed that the highest prevalence rate of online and face-to-face dating a partner met via the internet was among this age group (Smith & Anderson, 2016). Yet, future studies may include participants from different age groups and/or cohorts to identify the differences in the proposed relationships among particular age groups.

Fourthly, the frequencies of using SNS to find partners and face-to-face dating a partner met via SNS were determined by asking them a single question for each. In addition, the information provided by some participants may have been lost due to the limitations of the answer options for the questions asked. To illustrate, while answering the question of “How frequently and how many individuals did you meet via SNS with the purpose of dating?,” the difference between someone who chose the option of “one or two people per year” and another person who chose the option of “one or two people per 6 months” might have been a little bit unclear. Future studies may benefit from measuring these frequencies by including answer scales with more precise options. Furthermore, in the present study, dating motivations were not evaluated since it out of the focus of the study. However, future studies that consider dating motivations as control or moderating variables can take the literature findings further. Finally, in the current study, the participants were not asked whether they had any psychiatric or neurological

disorders, nor was having any disorder determined as an exclusion criterion. Although it is stated that the DT personality traits are measured at the subclinical level in the definition (Paulhus & Williams, 2002), since any psychiatric or neurological disorders may be related to impulsivity and risk-taking behaviors, these disorders can be determined as exclusion criteria in future studies.

To conclude, although many studies investigated the DT personality traits as predictors of online dating attitudes and behaviors by explicitly focusing on flirting via dating applications, at least to our knowledge, our study is among the few that focus on the effects of these traits on flirting and dating via SNS. The present study showed that narcissism directly affected using SNS to find a partner and indirectly affected face-to-face dating a partner met via SNS through its positive effect on risk-taking. Furthermore, an indirect effect of psychopathy on using SNS to find partners via impulsivity and on face-to-face dating a partner met via SNS was found, through its effect on risk-taking. Finally, Machiavellianism was associated with lower levels of using SNS to find partners via its negative effect on impulsivity. We hope that the present study encourages other researchers to investigate the effects of other personality traits on flirting or dating via SNS rather than dating applications, mediating processes involved in these relationships as well as situational (e.g., the Covid-19 pandemic) and cultural (e.g., collectivism) variables that may moderate these associations.

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**Ethics Committee Approval:** The informed consents of all the participants were received via a form detailing the content of the study, and the participants' rights to withdraw from the study at any time. The current study was approved by the Cankaya University Social Sciences and Humanities Scientific Research and Publication Ethics Committee.

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