Original article / *Araştırma*

Social media use and personality disorders*

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ABSTRACT

Objective: *The aim of this study was to investigate the association between personality disorders and social media use.* ***Methods:*** *Five hundred and ten university students participated in the study. Personality Belief Questionnaire-Short form was used to assess DSM-based personality disorder symptoms and Social Media Disorder Scale was used to determine addictive use of social media. In addition, daily usage of social media, frequency of taking and sharing selfies were examined using a questionnaire created by the authors.* ***Results:*** *Participants with high levels of Social Media Disorder demonstrated higher levels of avoidant, dependent, antisocial, histrionic, paranoid and borderline personality features compared to those with low levels of social media disorder. Results of multivariate analyses showed that addictive use of social media, daily duration of social media use and frequency of selfie sharing were positively predicted by histrionic personality features and female gender. Furthermore, selfie taking was predicted only by narcissistic personality features.* ***Conclusion:*** *This study indicates that histrionic personality features may be risk factors for addictive use of social media.* ***(Anatolian Journal of Psychiatry 2020; 21(3):253-260)***

Keywords: *personality disorder, social media disorder, addiction, selfie, internet addiction, personality*

Sosyal medya kullanımı ve kişilik bozuklukları

ÖZ

Amaç: *Bu araştırmanın amacı sosyal medya kullanımı ile kişilik bozuklukları arasındaki ilişkiyi incelemektir.* ***Yöntem:*** *Beş yüz on üniversite öğrencisinde DSM'de tanımlanan kişilik bozuklukları belirtileri Kişilik İnanç Ölçeği Kısa Formu, sosyal medya bağımlılığı ise Sosyal Medya Bozukluğu Ölçeği kullanılarak değerlendirilmiştir. Ayrıca, sosyal medya kullanım süresi ve özçekim paylaşma ve çekme sıklığı yazarlar tarafından oluşturulan anket aracılığı ile değerlendirilmiştir.* ***Sonuçlar:*** *Sosyal medya kullanım bozukluğu belirti düzeyleri yüksek olan katılımcıların, düşük olanlara göre daha şiddetli kaçıngan, bağımlı, antisosyal, histriyonik, paranoid ve borderline kişilik özellikleri gösterdikleri belirlenmiştir. Histriyonik kişilik özellikleri ve kadın cinsiyetin sosyal medya bağımlılık düzeyi, günlük sosyal medya kullanım süresi ve paylaşılan özçekim sayılarını öngördüğü belirlenmiştir. Diğer yandan sadece narsistik kişilik özelliklerinin çekilen özçekim sayısını öngördüğü belirlenmiştir.* ***Sonuç:*** *Bu çalışmanın sonuçları histriyonik kişilik özelliklerinin sosyal medya bağımlılığı için bir risk etmeni olabileceğini göstermektedir.* ***(Anadolu Psikiyatri Derg 2020; 21(3):253-260)***

Anahtar sözcükler: *Kişilik bozukluğu, sosyal medya bozukluğu, bağımlılık, özçekim, internet bağımlılığı, kişilik*

* This study has been presented in 29th National Congress of Child and Adolescent Psychiatry (May 2019, İstanbul, Turkey).

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Received: July, 29th 2019, Accepted: September, 08th 2019, doi: 10.5455/apd.58500

INTRODUCTION

Social media (SM) has become increasingly popular in recent years with millions of users increasing daily.[1,2] However, because people are increasingly preferring to use these kind of virtual communications in their relationships instead of face to face communications, questions on problematic use of SM and its relation to psychopathology has become an increasing concern. Various kinds of psychological aspects of SM usage have been reported. While some studies report that SM can make people feel better (i.e. feel more happy, less depressed and anxious, have a higher social support and life satisfaction),[3] others report that it may have a negative effect on human psychological well-being especially in adolescents and young adults (i.e. increased depression, anxiety, stress, attention and sleep problems in addition to decreased life satisfaction).[4-12] Based on this research, the American Pediatric Association reported that 'Facebook depression' is a potential problem for teens.[13]

Of particular concern is the potential addictive use of SM because of its overuse which negatively influences a person's daily routine and responsibilities especially among young people.[14] Despite the fact that the current classification of mental disorders does not describe any diagnosis relating to problematic use of SM,[15] some authors claim that the overuse of SM may be defined as an addiction because of its similarities with other behavioral addictive disorders (i.e. gambling disorder, online gaming disorder).[16] As such, overutilization of SM in a compulsive manner can be explained by the general addiction models,[17] specifically, if an individual is preoccupied in use of SM (salience) to reduce negative feelings (mood modification), use increases in order to derive the same pleasure from it (tolerance/craving), which in turn becomes distressful if prohibited (withdrawal), sacrificing duties and/or producing harm to the other areas of life because of use it (conflict/functional impairment), combined with unsuccessful attempts to control its usage (relapse/loss of control).[18,19] Based on this concept, some tools have been developed to assess the problematic and addictive use of the SM[20,21] and various studies conducted on this phenomenon have indicated a possible increase in the addictive use of SM especially in young people.[11] Also, many studies have investigated the sociodemographic, clinical or various psychological factors (i.e. personality) contributing to the addictive use of SM. Most of these studies indicate that being an adolescent or young adult, being of female gender and having a psychiatric disorder like depression or anxiety disorder may be related to addictive use of SM.[16,22] Recently, the relationship between problematic use of SM and basic personality features has received attention. These studies focused on specific personality features like narcissism, self-esteem or The Big Five Personality Facets.[23] Extraversion and openness facets of the Big Five Personality and narcissism and self-esteem have most consistently been shown to associate with spending more time with SM or problematic use of it, however, other facets of Big Five Personality have revealed contradictory findings.[3,4,11,16,24-31] Thus far, studies have not expanded this research to focus on DSM-based personality pathology except for limited studies. To address this gap, we aimed to investigate the relationship between the SM use in an addictive manner (including all kinds of SM services) and personality disorders based on DSM defined symptoms of personality pathology.

Of particular interest in our study was the association between 'selfies', its sharing and personality pathology. Because of its ease of sharing, the desire (or fear of) being visible to other people are thought to reflect important psychological factors. Specifically, it is expected that different features of personality pathology could show different attitude styles about being visible (sharing). This subject has not been examined for its relation with DSM-based personality features previously. Because adolescents and young adults have higher risk for problematic SM use as discussed earlier,[14,16] we conducted our study among university students.

METHODS

Participants

Five hundred and ten university students recurited from medical (47%) and education (53%) faculties of a public university of Turkey participated in the study. The age range of the participants was 18 to 38 (mean age: 20.9±2.4), 65% of whom were women. The students were informed via announcements made by research assistants in their classroom during their recess times between the lessons. Research assistants met with the students in their classrooms at a different time and asked them to complete the questionnaires. Before completing study measures, verbal information about the study was

given to the participants and their written consent was obtained. Ethical approval for the study has been obtained from the ethical committee of the university.

Measures

A questionnaire including information on socio-demographic features and a SM usage has been created by the authors. In addition to demographic information, this questionnaire has questions on the SM use including daily time they spend for the SM usage and frequency of taking and sharing selfies. Specifically, we asked to the participants to write the number of total selfie shares they make monthly. Also, we asked them to write the number of total selfies they take weekly regardless of sharing. To determine the time they engaged in SM, we asked them to write estimated total duration (in hours) they spend daily in SM. The participants were informed that all kinds of SM services providing online social interactions are described as SM in this study.

Social Media Disorder Scale (SMDS): The SMDS was developed by van Den Eijnden[20] based on the notion that despite not included in DSM-5, the social media disorder has significant similarities with other kind of behavioral addiction types like internet gaming disorder. Thus, the SMDS was developed to assess the addictive use of SM on the basis of the DSM-5 diagnostic criteria for the internet gaming disorder.[15] Produced from a 27 item longer version, a nine item short scale has been used for this study. Of the nine items, each has two answers (yes or no) and each 'yes' answer yields in one point, yielding a total scale score range between 0 and 9 (higher score indicates a higher risk for SMD). A score of five has been determined as a cut-off point by the developers indicating that higher scores than this cut off indicate that the individual can have a SMD. Cronbach α reliability coefficients of the scale were calculated as acceptable in three different samples (0.81, 0.76, and 0.82).[20] The scale was adapted to Turkish by Savci et al. with good reliability measures (Cronbach's α for exploratory factor analysis, and confirmatory factor analysis are 0.83 and 0.86 respectively).[32]

Personality Belief Questionnaire-Short Form (PBQ-SF): The PBQ-SF is a 65-item self-report questionnaire used to assess feature of personality pathology according to DSM-IV.[33] It has 10 subscales indicating DSM-IV axis II personality disorders including borderline, paranoid, schizoid, histrionic, narcissistic, antisocial, obsessive-compulsive, passive-aggressive, dependent, and avoidant personalities. Respondents are requested to mark each item on a five-point Likert scale. A total score for each subscale is calculated by summing the relevant items. Higher scores indicate higher levels of personality pathology. PBQ-SF has been adapted to Turkish by Taymur with good reliability measures (Cronbach's α=0.92).[34]

Data analytic strategy

The analysis of the data was performed using SPSS 17. Pearson's or Spearman's correlation analysis was used to test the correlations between each personality scores and variables related to SM use. Student's t test or Mann Whitney U test was used to compare the subjects scored higher than the cut-off point of the SMD with those scored under the cut-off point. Linear regression analyses were used to determine the personality disorders predicting SMD scores, and other variables related to SM use (i.e. daily spent time with SM, the numbers of taken and shared selfies). Taking into account the risk of type I error due to a multiple testing effect, only findings with a p value <0.01 (two-tailed) were considered significant (and those with p<0.05 as trends) for these analyses.

RESULTS

All of the participants reported to use at least one SM platform (i.e. Facebook, Twitter, Instagram, Youtube, WhatsApp or other SM platforms) except for 4 students. Descriptive statistics of the SM usage and SMD scores are given in table 1. Correlation analyses revealed that SMD scores

Table 1. Descriptive statistics for the questionnaires and SMD of the participants

	Min	Max	Mean±SD
Daily spent time with social media (in hours)	0	14	2.89±1.92
Number of taken selfies (per week)	0	250	7.34±20.28
Number of shared selfies (per month)	0	20	1.35±2.50
Social Media Disorder Scale score	0	9	2.46±2.06

are positively correlated to avoidant, dependent, antisocial, histrionic, paranoid and borderline personality scores. However, daily spent time was only correlated to histrionic personality scores. Number of shared selfies was correlated to histrionic, narcissistic and antisocial personali-

Table 2. Correlations between the variables related to social media use and personality features

	1	2	3	4	5	6	7	8	9	10	11	12	13
1 Social Media Disorder Scale													
2 Daily spent time	0.39**												
3 Shared selfies	0.06	0.16**											
4 Number of taken selfies	0.15**	0.20**	0.36**										
5 Avoidant personality	0.13**	0.10*	0.10*	0.01									
6 Dependent personality	0.23**	0.09*	0.03	-0.03	0.55**								
7 Passive-aggressive pers.	0.16*	0.08	0.08	0.06	0.58**	0.38**							
8 Obsessive-compulsive per.	0.07	0.04	0.07	0.01	0.60**	0.45**	0.50**						
9 Antisocial personality	0.12**	0.10*	0.12**	0.09	0.62**	0.55**	0.64**	0.67**					
10 Narcissistic personality	0.11*	0.11*	0.16**	0.10*	0.52**	0.47**	0.66**	0.59**	0.73**				
11 Histrionic personality	0.26**	0.18**	0.15**	0.05	0.47**	0.63**	0.47**	0.49**	0.66**	0.64**			
12 Schizoid personality	0.02	0.09*	0.04	-0.03	0.51**	0.23**	0.61**	0.43**	0.44**	0.49**	0.27**		
13 Paranoid personality	0.18**	0.09	0.08	-0.03	0.62**	0.50**	0.63**	0.58**	0.69**	0.57**	0.55**	0.52**	
14 Borderline personality	0.20**	0.08	0.03	-0.08	0.69**	0.78**	0.55**	0.56**	0.62**	0.54**	0.59**	0.44**	0.68**

**: p<0.05; **: p<0.01.*

Table 3. Comparison analyses of the personality features between the subjects over and under cut off score of the Social Media Disorder Scale

Over/under cut off score of SMD	Mean±SD	z/t	p
Avoidant personality			
Over	15.4±5.1	-2.7	**0.006**
Under	13.6±4.8		
Dependent personality			
Over	10.2±5.8	-4.7	**<0.001**
Under	7.1±4.6		
Passive-aggressive personality			
Over	15.2±4.7	-2.4	**0.016**
Under	13.8±5.1		
Obsessive-compulsive personality			
Over	14.7±5.5	-2.5	**0.014**
Under	13.1±5.4		
Antisocial personality			
Over	11.6±6.5	-2.8	**0.004**
Under	9.5±5.8		
Narcissistic personality			
Over	12.1±5.9	-2.3	**0.019**
Under	10.5±5.8		
Histrionic personality			
Over	11.7±5.6	-6.0	**<0.001**
Under	7.9±4.9		
Schizoid personality			
Over	15.2±5.2	-0.7	0.45
Under	14.8±5.6		
Paranoid personality			
Over	13.6±5.9	-3.2	**0.001**
Under	11.4±5.6		
Borderline personality			
Over	11.2±5.6	-4.4	**<0.001**
Under	8.5±4.6		

Table 4. Personality features predicting social media use related variables according to linear regression analysis

	SMD (β)	DST (β)	SS (β)	TS (β)
Age	-0.05	-0.08	0.05	-0.05
Gender	0.14*	0.12*	0.17**	0.09
Avoidant personality	0.01	0.03	-0.01	0.01
Dependent personality	0.16	-0.05	-0.14	0.02
Passive-aggressive personality	0.015	-0.10	0.05	0.01
Obsessive-compulsive personality	-0.05	-0.09	-0.04	-0.08
Antisocial personality	-0.16	0.14	0.06	0.06
Narcissistic personality	-0.03	0.01	0.05	0.27**
Histrionic personality	0.27**	0.25**	0.22*	-0.05
Schizoid personality	-0.04	0.06	-0.07	0.03
Paranoid personality	0.16	-0.05	-0.03	-0.04
Borderline personality	-0.02	-0.01	0.04	-0.16

**: p<0.01; **: p<0.001; SMD: Social Media Disorder Scale; DST: Daily spent time; SS: Number of shared Selfies; TS: Number of taken selfies*

ty scores. Interestingly, number of taking selfies regardless of sharing was not correlated to any personality scores except for narcissistic personality in a trend level (p<0.05) (Table 2).

We divided the study group into two subgroups according to the cut-off point of the SMD. We have found that 94 of the participants (18.4%) were over the cut-off point of SMD indicating that they might have a social media disorder.[20] We compared these students with those who scored under the cut-off point in terms of PBQ subscales and we found that avoidant, dependent, antisocial, histrionic, paranoid and borderline personality scores were higher in the participants scored over the cut-off point on the SMD. However, scores of the remaining personalities -except for schizoid personality- were also higher in the subjects over cut-off point in a trend level (p<0.05) (Table3).

Next, we conducted a series of regression analyses to determine which personality and sociodemographic features (i.e. age and gender) predicted the SMD and other variables related to SM usage when controlling for other personality pathology. According to these analyses, SMD scores (R=0.36, R^2=0.13, p<0.001), total time spent with SM (R=0.28, R^2=0.08, p<0.001) and the number of selfie share (R=0.27, R^2=0.08, p<0.001) were predicted by only Histrionic personality scores in addition to female gender. However, number of taken selfies regardless of sharing was predicted only by narcissistic personality scores (R=0.26, R^2=0.07, p=0.002) (Table 4).

DISCUSSION

We have investigated the association between the features of personality pathology and addictive usage/overutilization of SM, taking and sharing selfies. We found that several types of personality features were correlated with addictive usage and overutilization of SM at the bivariate level, indicating that individuals with high levels of certain personality pathologies show higher levels of addictive use of SM. Also, we have found that the scores of these personality pathologies were higher in participants scored above the cut-off point on the SMD compared to those scored under the cut-off point. However, to the results of the regression analyses, SMD score, daily duration of SM use and frequency of selfie sharing were predicted by female gender and histrionic personality features only. Furthermore, selfie taking was predicted only by narcissistic personality features.

The findings of our study are in line and extend the Rosen's study which reported that general Facebook usage positively predicts narcissism, antisocial, compulsive, paranoid and histrionic personality traits among adult Facebook users. They also reported that histrionic and narcissistic personality traits are predicted by number of friends on Facebook which negatively predicts schizoid personality features.[35] Despite supporting our findings that DSM based personality disorder traits (especially histrionic and narcissistic personality traits) are related to SM use, their study design was different from our study in that our study further investigatesunique predict-

tions between personality pathology and SM use while controlling for the comorbidity between types of personality pathology. Our findings further fit with research showing robust relations between personality pathology with a variety of addiction subtypes. Previous studies indicate that in addition to substance abuse and addiction,[36,37] behavioral addictions like gambling disorder and internet addiction are very frequent in people with personality disorders.[38-40]

We have found that addictive use of SM and the time spent daily -which is an important sign for addictive use-[41] were correlated with several personality disorder features. This finding supports the literature obtained from the samples of other kinds of addictions indicating that having a personality disorder is a risk for SM addiction like other kinds of addictions. However, our findings differ from previous studies conducted on personality disorders-internet addiction relationship which failed to demonstrate a unique role for Histrionic personality.[39,40,42,43] This discrepancy may be related to the differences in the nature of general internet use and SM use. SM is based on online social interaction including activities like sharing, liking and being popular which are not the basics of general internet use or online gaming. Thus, individuals with personality features which are mostly associate with interest in social activities and have a desire to be visible and to be liked are possible top users of SM. Another difference between SM use and use of internet for other purposes relates to gender differences. While previous studies report no difference among genders[44] or higher risk for males for online gaming disorder or internet addiction,[45] studies on SM use mostly report that women use SM more frequently than men.[16,46] Our study supports this finding by showing that addictive use of SM, daily spent time in and sharing selfies were predicted by female gender. These results indicate that addictive use of SM should be investigated as a different concept from other use purposes of technology because of its nature.

Our results further more replicated the by now well-known finding between narcissism and SM and internet use. Many of these studies report that both internet use for general purposes[47] and use for SM purposes are related to narcissism.[16] However, while our findings showed positive correlations between narcissistic features and several SM use outcomes, the results of the regression analyses controlling for age, sex and other personality features (which has not been conducted in previous studies) demonstrated that narcissistic features did not predict any of the SM use outcomes except for taking selfies. Instead, these variables were highly related to histrionic features as mentioned before. Ackerman et al. demonstrated three components of narcissism including leadership/authority, grandiose exhibitionism, and entitlement/exploitativeness and showed that grandiose exhibitionism (reflecting self-absorption, vanity, and exhibitionistic propensities), to be associated with higher selfie posting[48] supporting our findings that rather than narcissism itself, its exhibitionistic features may be related to selfie taking.

Our study has several limitations. We have used self-report measures which may have inflated the association between independent and dependent variables. Additionally, we also wish to acknowledge the limitations of using a measure of DSM-IV or DSM-5 Section II defined personality pathology. The field is moving towards a dimensional approach to assessing personality pathology which calls into question the validity of concepts such as borderline, histrionic, narcissistic personality disorder. Future studies should therefore endeavor to evaluate relations with SM using DSM-5 section III measures of Criterion A and B.

Despite these limitations, we believe that the current study makes an incremental contribution to our understanding of the relations between maladaptive SM use and personality pathology - an area which will gain more and more prominence especially in young people-.

Authors' contributions: *Ö.F.A.: conceptualization, data collection, statistical analysis, supervision and writing; A.B.: conceptualization, data collection, statistical analysis and supervision; H.K.: data collection; Y.Ç.: data collection; F.K.: data collection; C.S.: writing (review), supervision, language editing.*

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