

Original article / Araştırma**Investigation of the relationship between social network usage and sleep quality among university students****İbrahim GÜNDOĞMUŞ,¹ Ayşegül TAŞDELEN KUL,¹ Deniz Adnan ÇOBAN²****ABSTRACT**

Objective: Smartphones have become the most preferred devices of today with the development and widespread use of social media networks. The aim of this study is to determine the relationship between social network usages and sleep quality among university students. **Methods:** Overall, 1369 university students (791 females and 578 males) were included in the study. In the cross-sectional study with self-report questionnaires [Sociodemographic Questionnaire, Pittsburg Sleep Quality Index (PSQI), and Smartphone Addiction Scale Short Version (SAS-SV)] were utilized. Descriptive and inferential statistics were done. **Results:** The mean score of SAS-SV and PSQI was calculated based on demographic variables and statistically significant differences were found between the frequency of smartphone change, monthly smartphone bill, smartphone addiction, and sleep quality. It was statistically significant when students' daily Facebook, Twitter, Instagram, Snapchat, Swarm, and Foursquare user's times were compared with the mean score of SAS-SV and PSQI. **Conclusions:** In conclusion, our study thought that overuse of smartphones along with social media networks in college students is potentially addictive and will affect sleep quality negatively. It was also discussed which popular social media networks increased smartphone addiction risk and affected sleep quality. Due to the limited number of studies in the literature on this subject, we think that our study will contribute to the field. (*Anatolian Journal of Psychiatry* 2020; 21(2):141-148)

Keywords: smartphone addiction, social media networks, sleep quality

Üniversite öğrencilerinde sosyal ağ kullanımı ve uyku kalitesi arasındaki ilişkisinin araştırılması

ÖZ

Amaç: Akıllı telefonlar, sosyal medya ağlarının geliştirilmesi ve yaygın kullanımı ile günümüzün en çok tercih edilen cihazları durumuna geldi. Bu çalışmanın amacı, üniversite öğrencilerinde sosyal ağ kullanımı ve uyku kalitesi arasındaki ilişkiyi belirlemektir. **Yöntem:** Çalışmaya, 1369 üniversite öğrencisi (791 kız, 578 erkek) alındı. Özbildirim türü ölçekler ile yapılan kesitsel çalışmada (Sosyodemografik Veri Formu, Pittsburg Uyku Kalitesi İndeksi (PUKİ) ve Akıllı Telefon Bağımlılığı Ölçeği Kısa Versiyonu (ATBÖ-KF)) kullanılmıştır. Tanımlayıcı ve çıkarımsal istatistikler yapıldı. **Bulgular:** Ortalama ATBÖ-KF ve PUKİ puanı demografik değişkenlere göre hesaplandı ve akıllı telefon değişim sıklığı, aylık akıllı telefon faturası, akıllı telefon bağımlılığı ve uyku kalitesi arasında istatistiksel olarak anlamlı fark bulundu. Öğrencilerin günlük Facebook, Twitter, Instagram, Snapchat, Swarm ve Foursquare kullanım süreleri ATBÖ-KF ve PUKİ ortalama puanları ile karşılaştırıldığında istatistiksel olarak anlamlıydı. **Sonuç:** Sonuç olarak, çalışmamız üniversite öğrencilerinde sosyal medya ağlarıyla birlikte akıllı telefonların aşırı kullanımının potansiyel olarak bağımlılık yaratacağını ve uyku kalitesini olumsuz yönde etkileyeceğini düşündürmüştür. Ayrıca, popüler sosyal medya ağlarının hangilerinin akıllı telefon bağımlılığı riskini artırdığı ve uyku kalitesini etkilediği de tartışıldı. Bu konuda alan yazındaki araştırma sayısının az olması nedeniyle, çalışmamızın alana katkı sağlayaca-

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Anahtar sözcükler: Akıllı telefon bağımlılığı, sosyal medya ağları, uyku kalitesi

INTRODUCTION

Sleep is one of the most basic human necessities for the relaxation of the body and mind, and the initiation of neurophysiological processes that has vital importance.¹ Likewise, it is a healing, relaxing, and nutritious natural way to protect body energy, restore normal processes, activate physical growth, and ensure mental refreshment.^{1,2} The most important indicator of insufficient sleep is excessive daytime sleepiness. Sleep disturbances with variety, such as insomnia, hypersomnia, parasomnias, sleep-related breathing disorders, circadian rhythm disorders, motor disturbances in sleep, and restless legs syndrome, can also be the first symptoms of psychiatric disorders or can be used as a sensitive data for the diagnosis and follow-up in psychiatric practice.^{3,4} There is growing evidence that psychiatric disorders, such as major depressive disorder, post-traumatic stress disorder, hypomania, mania, schizophrenia, anxiety disorders, alcoholism, and behavioral disorders, are associated with sleep disorders.^{3,5,6} Likewise, sleep quality is also important in some special populations, such as college students who are experiencing major risks, social changes, and challenges because of low academic performance, reduced mental health and declining quality of life.⁷ Previous studies have shown that the sleep quality may be low due to the high risk of mental disorders, such as depression, anxiety, and addiction in university students.⁸⁻¹⁰ Looking from this perspective, increasing sleep quality will provide significant benefits in this population.

Smartphones that have been increasing in features every day have become the most practical and most preferred of mobile devices. Versatile features, such as communication, messaging, gaming, navigation, access to the Internet, multimedia, and access to social networks (perhaps the most important part), can be considered, among the reasons for preferences. The fact that smartphones are being used so often in our daily practice and that they are indispensable have caused us to face the concept of 'smartphone addiction'.¹¹ Researchers have argued that everything that gives excitement carries the risk of addiction.¹² According to the behavioral approach, if a behavior gives happiness and/or helps to get rid of negative

behavior, the person tends to this behavior and the person continues to take pleasure or escape from distress and negative behavior.¹³ When we look at it from this direction, the smartphone gives pleasure to the person and/or he/she becomes to be distant from the distress and the stress, so the risk of addiction is always present. Another reason that increases the risk of addiction is the growing number of social media services in usage and variety. Social media networks, despite the fact that people have come out to communicate, evolved over time in different directions. Today, there are social media networks with all kinds of contents and sharing, such as music, photos, videos, messages, shopping, and meetings. The most suitable population for using these social media networks and the more prone group of the smartphone addiction is the university students who think that they can express themselves better in the social media networks.¹⁴

Previous studies in the literature have shown that smartphone overuse and addiction are related to sleep quality.^{15,16} To the best of our knowledge, there is no study showing the relationship between the social media networks used and sleep quality. With the hypothesis that the use of different social media networks will affect smartphone addiction and sleep quality, the aim of this study is to determine the effect of social media networks on smartphone addiction and sleep quality and examine the various related factors, in university students.

METHODS

Design

The study was conducted in the Department of Psychiatry, Health Sciences University Sultan Abdulhamid Han Training and Research Hospital, İstanbul. This study is a cross-sectional survey conducted in a sample of university students during the period of May and October 2017. All accessible students from two state universities in İstanbul (Health Sciences University and Marmara University) were invited to the study. Only volunteer students were included in the study. Eighty-seven participants were excluded from the survey due to their inability to complete the survey or lack thereof, and thus 1369 of 1456 university students were included.

The volunteers who are still a formal university student who fulfill the inclusion criteria for over a year's use of smartphones were included in the study. Exclusion criteria were having psychiatric diagnosis and treatment or physical diseases that can alter sleep, failing in filling up the questionnaires (less than 80% of questions), and not wanting to participate in the study.

The ethical protocol of the study was approved by the Ethics Committee of the Haydarpaşa Numune Training and Research Hospital and informed consent was taken from all the volunteers before filling out the questionnaires. The study complied with the Helsinki Declaration standards.

The data were collected with a standardized, anonymous, self-report data collection page. Personal information, habits, educational information, and smartphone information were asked for all attendees, along with the sociodemographic form. All volunteers were asked to question the quality of sleep, the Pittsburgh Sleep Quality Index (PSQI) self-rated scale, and the Smartphone Addiction Scale-Short Version (SAS-SV) for querying the smartphone addiction status. They were grouped into cases and control following the questionnaires. The social media networks of the volunteers were determined after the statistics.¹⁷

Measures

The sleep quality in this study was assessed by the Pittsburgh Sleep Quality Index that was developed by Buysse et al.¹⁸ The Turkish validity and reliability study was conducted by Agargun et al.¹⁹ PSQI is a 19-item standard self-report questionnaire that assesses sleep quality of last 1 month that yields seven component scores: daytime dysfunction, habitual sleep efficiency, use of sleep medications, sleeps disturbances, and overall sleep quality, duration of sleep, and sleep latency. Each component was scored between 0 and 3 and the total scale score ranged from 0 to 21. High scores are associated with poor sleep quality and also low scores with good sleep quality. According to previous studies, the PSQI global score of less than 5 was associated with better sleep quality and higher than 6 with poor sleep quality.²⁰

Smartphone addiction was measured by SAS-SV that is a validated scale that contains 10 items.²¹ The scale consisted of 10 questions, are Likert type. (1 'strongly disagree' to 6 'strongly agree') The scores to be obtained from the scale vary between 10 and 60. High scores are asso-

ciated with smartphone addiction in the last year. Turkish validity and reliability study Noyan et al.²² conducted. According to Kwon et al.²¹ cutoff values of ≥ 31 and ≥ 33 smartphone dependencies were determined for male and female participants, respectively.

Statistical analysis

After data gathering and calculation of sleep quality scores and smartphone addiction score for each study subjects, the data analysis was performed using SPSS (Version 20.0, Chicago, IL) for Windows. After the descriptive analysis was used to examine the sociodemographic characteristics (gender, age, and educational term) of the study participants, numerical variables were presented as mean $\pm$ standard deviation and categorical variables were presented as frequency and percentages. To determine whether to use parametric or non-parametric tests, it was first determined whether the normal distributions were appropriate. Student's *t*-test and one-way analysis of variance test were used for normal distribution variables. Tukey post-hoc analysis was used to show differences between groups. Mann-Whitney U test and Kruskal-Wallis test were used for non-normal distributional variables. Bonferroni post-hoc analysis was used to show differences between groups. Chi-square tests were used to compare the differences between categorical variables. Pearson's and Spearman's correlations were used to determine the relationship between variables. Statistical significance was accepted as *p* values less than 0.05.

RESULTS

Overall, 1369 university students participated in this study and completed the questionnaires. Sociodemographic data, SAS-SV score and PSQI score of the participants are shown in Table 1. The students consisted of 57.8% females and 42.2% males. The mean age of the participants was 21.54 ± 2.97 years (range: 18-45 years). The average SAS-SV score was 31.06 ± 10.33 and PSQI score was 5.48 ± 3.40 . Statistically significant difference was found between male and female SAS-SV scores because of the difference in cut-off scores of females and males.²¹ The mean SAS-SV score was calculated based on demographic variables and statistically significant differences were found between gender, frequency of smartphone change, monthly smartphone bill, smartphone addiction, and sleep quality. ($p < 0.001$; $p < 0.001$;

Table 1. Characteristics of the participants, comparisons of mean values for PSQI and SAS-SV in different groups

Variable	n	%	PSQI total score Mean±SD p		SAS-SV score Mean±SD	p
All participants	1369	100.0	5.48±3.40		31.06±10.33	
Gender						
Female	791	57.8	5.42±3.38	0.456	32.34±9.91	<0.001
Male	578	42.2	5.56±3.43		29.41±10.64	
Body Mass Index						
Underweight	124	9.1	5.37±3.36	0.417	31.87±10.40	0.223
Healthy	961	70.2	5.44±3.34		31.09±10.24	
Overweight	234	17.1	5.55±3.60		30.12±10.77	
Obese	50	3.7	6.24±3.57		32.96±9.61	
Faculty						
Medicine	185	13.5	4.84±3.22	0.90	30.83±9.91	0.800
Law	72	5.3	5.70±3.72		31.05±10.14	
Education	88	6.4	5.68±3.37		29.86±10.18	
Economics	203	14.8	5.71±3.69		31.26±11.31	
Engineering	314	22.9	5.37±3.18		29.72±10.08	
Healthy Sciences	164	12.0	5.87±3.47		31.59±10.37	
Junior Technical College	106	7.7	5.87±3.69		32.00±10.50	
Place of residence						
Family	546	39.9	5.40±3.43	0.91	31.19±10.42	0.804
Friend	303	22.1	5.90±3.54		30.55±10.61	
Alone	129	9.4	5.51±3.40		31.14±10.18	
Student hostel	391	28.6	5.27±3.31		32.26±10.04	
Monthly income						
Low	320	23.4	5.95±3.60	0.12	31.30±11.50	0.338
Middle	601	43.9	5.43±3.28		31.37±10.10	
High	448	32.7	5.22±3.38		30.47±9.72	
Frequency of smartphone change						
0-1 Years	35	2.6	6.91±4.59	<0.001	36.45±11.76	<0.001
1-2 Years	293	21.4	6.09±3.65		33.67±10.80	
2-4 Years	730	53.3	5.31±3.20		30.93±9.88	
4 and more	311	22.7	5.15±3.36		28.32±9.93	
Monthly smartphone bill						
Very low	139	10.2	5.28±3.21	0.005	29.28±10.17	0.001
Low	789	57.6	5.28±3.31		30.73±10.30	
Middle	290	21.2	5.72±3.48		31.30±9.99	
High	151	11.0	6.27±3.78		34.00±10.77	
Smartphone addiction						
Yes	739	54.0	6.24±3.52	<0.001	40.10±6.39	<0.001
No	630	46.0	4.84±3.16		23.36±5.81	
Sleep quality						
Good	787	57.5	3.08±1.33	<0.001	24.48±9.42	<0.001
Poor	582	42.5	8.73±2.54		34.55±10.48	

PSQI: Pittsburgh Sleep Quality Index; SAS-SV: Smartphone Addictions Scale Short Version.

p=0.001; p<0.001; p<0.001, respectively) The mean PSQI score was calculated based on demographic variables and statistically significant differences were found between frequency of smartphone change, monthly smartphone bill, smartphone addiction, and sleep quality (p<0.001; p=0.005; p<0.001; p<0.001, respectively) (Table 1).

It was statistically significant when students'

daily Facebook, Twitter, Instagram, Snapchat, Swarm, and Foursquare use times (non-user group, 1-60 minute/day, 61-120 minute/day, 121 and over minute/day) were compared with the mean score of SAS-SV but it was statistically insignificant when were compared the mean score of SAS-SV of student who using LinkedIn and Pinterest. (p<0.001; p<0.001; p<0.001; p<0.001; p<0.001; p<0.001; p=0.008; p=0.088;

Table 2. Comparisons of SAS-SV scores with daily usage of social media networks

	Smartphone Addictions Scale Short Version score								p
	Non-user group		1-60		61-120		121 and over		
	min/day		min/day		min/day				
	Mean±SD/ n	%	Mean±SD/ n	%	Mean±SD/ n	%	Mean±SD/ n	%	
Facebook	28.67±9.43 ^a		30.69±9.93 ^b		33.17±10.25 ^c		36.68±12.08 ^d		<0.001
	374	27.3	681	49.7	176	12.9	138	10.1	
Twitter	28.20±9.38 ^a		32.41±9.66 ^b		34.08±11.08 ^b		37.90±12.42 ^c		<0.001
	619	45.2	485	35.4	181	13.2	84	6.1	
Instagram	25.91±9.65 ^a		29.49±9.33 ^b		33.33±9.48 ^c		36.69±12.19 ^d		<0.001
	202	14.8	595	41.3	433	31.6	169	12.3	
Snapchat	28.55±9.65 ^a		31.93±9.80 ^b		38.50±11.86 ^c		39.44±13.10 ^c		<0.001
	565	41.3	700	51.1	59	4.3	45	3.3	
LinkedIn	31.31±10.39 ^a		29.30±10.22 ^a		32.54±2.84 ^a		33.28±3.35 ^a		0.088
	1169	85.4	182	13.3	11	0.8	7	0.5	
Swarm	29.80±10.17 ^a		33.24±10.05 ^b		37.47±13.14 ^b		35.45±10.39 ^b		<0.001
	897	65.5	442	32.35	19	1.4	11	0.8	
Pinterest	31.08±10.49 ^a		30.77±9.20 ^a		34.33±9.48 ^a		30.42±8.40 ^a		0.787
	1196	87.4	157	11.5	9	0.7	7	0.5	
Foursquare	30.74±10.25 ^a		33.42±10.97 ^b		36.57±2.50		37.33±2.08		0.008
	1217	88.9	142	10.4	7	0.5	3	0.2	

^{a,b,c,d}: the same letters are not statistically different, the different letters are statistically different.

Table 3. Comparisons of PSQI Scores with daily usage of social media networks

	Pittsburgh Sleep Quality Index score								p
	Non-user group		1-60		61-120		121 and over		
	min/day		min/day		min/day				
	Mean±SD		Mean±SD		Mean±SD		Mean±SD		
	n	%	n	%	n	%	n	%	
Facebook	4.94±3.03 ^a		5.31±3.28 ^a		6.12±3.41 ^b		6.94±4.30 ^b		<0.001
	374	27.3	681	49.7	176	12.9	138	10.1	
Twitter	4.91±3.09 ^a		5.62±3.06 ^b		6.17±4.06 ^b		7.48±4.62 ^c		<0.001
	619	45.2	485	35.4	181	13.2	84	6.1	
Instagram	4.80±2.87 ^a		5.15±3.32 ^a		5.73±3.32 ^b		6.79±4.01 ^c		<0.001
	202	14.8	595	41.3	433	31.6	169	12.3	
Snapchat	5.28±3.22 ^a		5.40±3.36 ^a		6.50±4.35 ^b		7.95±3.71 ^b		<0.001
	565	41.3	700	51.1	59	4.3	45	3.3	
LinkedIn	5.53±3.39 ^a		5.25±3.60 ^a		4.63±1.12 ^a		5.71±3.40 ^a		0.622
	1169	85.4	182	13.3	11	0.8	7	0.5	
Swarm	5.31±3.32 ^a		5.74±3.42 ^a		7.05±5.32 ^a		6.72±3.58 ^a		0.016
	897	65.5	442	32.4	19	1.4	11	0.8	
Pinterest	5.48±3.38 ^a		5.61±3.65 ^a		4.88±1.96 ^a		4.57±2.96 ^a		0.802
	1196	87.4	157	11.5	9	0.7	7	0.5	
Foursquare	5.50±3.39 ^a		5.28±3.42 ^a		6.42±3.55 ^a		7.33±4.50 ^a		0.582
	1217	88.9	142	10.4	7	0.5	3	0.2	

^{a,b,c,d}: the same letters are not statistically different, the different letters are statistically different.

p=0.787, respectively) (Table 2).

It was statistically significant when students' daily Facebook, Twitter, Instagram, Snapchat, and Swarm use times (non-user group, 1-60

minute/day, 61-120 minute/day, 121 and over minute/day) were compared with the mean score of PSQI but it was statistically insignificant when were compared the mean score of SAS-SV of

student who were using LinkedIn Pinterest, and Foursquare ($p < 0.001$; $p < 0.001$; $p < 0.001$; $p < 0.001$; $p = 0.016$; $p = 0.622$; $p = 0.802$; $p = 0.582$, respectively (Table 3).

The Pearson's correlation showed that the smartphone addiction had a significant relationship with the quality of sleep ($p < 0.001$; $r = 0.326$)

DISCUSSION

The most important finding of our study is that the increase in the time spent on daily social media has increased the risk of poor sleep quality and smartphone addiction. According to the social media kind usage, the changes of risk are another important finding of the study. It has also been demonstrated that smartphone addiction and the use of various social media networks have an impact on sleep quality. The effect of the usage periods of social media networks on smartphone dependency was investigated. To the best of our knowledge, this is the first study to examine the impact of various social media networks on sleep quality and smartphone addiction.

According to the results of our study, the most popular social media tool among university students is Instagram, secondly Facebook, and respectively, Twitter and Snapchat. Although it is reported that Facebook is used most in the general population, we have shown that Instagram is the most used in the university student population.¹⁷ We think that the reason for this situation is that there are online sharing areas, such as photography, writing, games, shopping in these social media networks, and they can be taken against these shares. It may also make it easier to spend more time with these social media tools being more widely used and their content being richer. Furthermore, in accordance with the literature, the current study found that those in daily who use smartphones more have more frequent smartphone changes and that monthly smartphone bills are higher.²³ We think that this is due to the rapid development of smartphone technology, the speed of processing, and especially the increase of photo quality.²³ Because with the increase in quality, costs related to the use of smart phones such as internet quantity increases. Especially, among young people, it has become a necessity to more frequently change the smartphone and pay more bills, in order to get more 'follow', more 'like,' and thus more attention.²⁴ The results of our article support the results found in the literature.^{24,25}

According to Griffiths, people may develop dependence on certain activities that they have performed, even though the risk of potential dependence on the devices containing the internet.²⁶ Nowadays, social media networks can be considered as the best example of this. The increasing popularity of social media networks, the change of the popular social media network, the change of people's social media expectations, and the use of multiple social media networks by people have led us to the concept of smartphone addiction from social media network addiction.²⁷ As a whole, smartphone features, such as navigation, messaging, calling, and photography, can be also significantly affecting addiction although social media networks are an important part of smartphone dependency. The results of our study also support this idea, especially the usage of Instagram, Facebook, Twitter, and Snapchat increases the risk of smartphone addiction. Swarm and Foursquare have a partial impact on smartphone dependency, meaning there is a statistically significant difference between those who have an account and those who do not. We think there are not appropriate applications to spend a lot of time because these two social media networks are mostly used to share the location. Pinterest and LinkedIn do not affect the risk of smartphone dependency according to our results. This may be because it is not so popular among university students. Our results support the information contained in the literature and contribute to the literature due to the size of the sample size. This may be because it is not so popular among university students. Our results support the information contained in the literature, and contribute to the literature due to the size of the sample size.^{25,27}

Sleep quality is an important public health problem that is getting worse day by day. It is not possible to predict exactly the reason because there are too many factors that can affect sleep quality. Although there are many contradictory results in the previous studies in the literature, the results of our study suggest that social networking networks are going overused and smartphone addiction is the reason for the poor sleep quality among university students.^{15,28} The inconsistency of previous study results may be due to excessive phone use causing anxiety and depression or being used as a means of preventing these disorders symptoms.²⁹⁻³¹ Also, if the phone is used late at night, it may decrease sleep quality.³¹ In addition to the literature, according to the results of the present study, using Facebook, Twitter, Instagram, Snapchat, and

Swarm have been shown to have a negative impact on sleep quality. Besides the mental fatigue caused by the excessive use of social media because of this negative effect, it can be considered that the wealth of sharing such as photos, video, games, shopping, messages, especially in Facebook and Instagram, and the high expectation of these shares affected the sleep quality. Furthermore, there is no effect on LinkedIn, Pinterest and Foursquare sleep quality.

Social media networks have been established to communicate with friends, create personal profiles and create common groups, over time, shopping, gambling, gaming, sharing, and pornographic content and etc. were added to their theme. But, it began to create a threat of addiction, with usage out of its intended use and with much more use than was anticipated. The overuse of social media has strengthened the idea of addiction by encountering consequences like behavioral addiction, such as loss of control, withdrawal, increased use, tolerance, extended recovery periods, relapse, sacrificing social, occupational and recreational activities, and continued use despite negative consequences. As we mentioned in the Introduction, social media networks can become addictive because of the giving excitement and happiness of the person using it and/or the removal from the anxiety.^{12,13} In addition, the use of social media networks can affect human emotions and cause rapid changes in emotions. These emotions cause excitement in the person and lead to virtual happiness and goodness. In other words, the person creates a virtual world in which he/she wants to be different, happy, excited, and imagined from the real world and can use that this virtual world as a means of departing from the real world. This leads to the more frequent use of social media networks and increased risk of addiction.

The results of this study should be interpreted in the light of study limitations, although there is a large sample size. First, the population in which the study is done is university students and may not reflect all the population. It should be taken into consideration that data may not be taken at the same time by the students. Furthermore, the scales used are self-report. Other limitation of our study is that the collected data are cross-sectional and limit causal inferences. Especially, when examining sleep quality, it is always to be considered that the mixing factors are too great. Finally, the literature is not mature enough on these issues.

CONCLUSION

As a result, our study showed that overuse of smartphones along with social media networks in college students is potentially addictive and will affect sleep quality negatively. It was also discussed which popular social media networks increased smartphone addiction risk, and affected sleep quality. To the best of our knowledge, these results are limited in the literature and limited in number, so our study will provide significant contributions.

In conclusion, it will be useful to see the overuse of social media networks as a public health problem, to avoid dependency and to use it as intended. It should be read in mind that proper use of an object for any purpose may be of great benefit, but excluding it may lead to unintended consequences. We must take the necessary precautions, especially among our young people, to use them appropriately for the purpose of social media networks. Future research on this topic should be added to the literature in a well-structured and planned way of doing personality analysis, social interaction and more specific topics.

Authors' contributions: İ.G.: planning, literature, data collection, statistics; A.T.K.: finding topic, literature, data collection, writing manuscript; D.A.Ç: data collection, planning, literature, examination sample, writing manuscript.

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