

Cyberostracism and Self-Esteem: A Study on Medical Faculty Students in Western Turkey

Siber Dışlanma ve Benlik Saygısı: Türkiye'nin Batısında Bir Tıp Fakültesi Öğrencilerinde Yapılan Araştırma

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Abstract

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The technological advancements of this era made the use of Internet an essential part of our lives. It is known that the Internet is used for social media applications at most. It is thought that the use of social media has increased with the effect of decreasing face-to-face socialization due to the COVID-19 pandemic in the period, in which the present study was carried out. The use of social media plays an important role in the socialization and the development of belongingness and self-esteem in online groups but it also brings several threats with it. One of these threats is cyberostracism, which is defined as not belonging to a group in social media, being ignored, and being ostracized. The present study is a cross-sectional one carried out with students studying in the Medical Faculty of Eskişehir Osmangazi University in educational year of 2020-2021. Ethics committee approval was obtained. The study group involved 1092 students. Making use of the literature, a questionnaire form was prepared. The questionnaire was filled out online by students. The data analysis was performed using Mann-Whitney U test, Kruskal Wallis test, Spearman's Correlation Analysis, and Multiple Linear Regression Analysis. 593 (54.3%) of the students were female. Their ages were ranging between 17 and 27 years and the mean age was found to be 21.6 ± 2.0 years. The scores in the cyberostracism scale range between 14 and 70 points and the mean score was 24.8 ± 9.9 points. The social media applications used most during the day were Instagram, WhatsApp, and YouTube. In advanced analyses, character type, family type, devoting time for hobbies during the day, face-to-face communication with friends, behaviors of parents towards the participant, age of the first use of a smartphone, time of smartphone use in a day, and creating a social media membership by concealing the identity were found to be the predictors of cyberostracism. A negative relationship was found between students' level of cyberostracism and self-esteem. The increase in the use of internet and social media applications also brought the concept of "digital health" forward. This subject is important for public health. It is recommended to develop intervention programs in order to protect from the harmful effects of social media and decrease cyberostracism.

Keywords: Cyberostracism; ostracism; self-esteem; medical faculty; student

Özet

Çağımızın getirdiği teknolojik gelişmeler internet kullanımını hayatımızın vazgeçilemez bir parçası haline getirdi. İnternet erişiminin en sık sosyal medya uygulamaları kullanımı için olduğu bilinmektedir. Çalışmanın yapıldığı sürede yaşanan COVID-19 Pandemisinde yüz yüze sosyalleşmenin azalmasının da etkisiyle sosyal medya kullanımının arttığı düşünülmektedir. Sosyal medya uygulamaları kullanımı; çevirim içi gruplarda sosyalleşme, aidiyet duygusu ve benlik saygısının gelişmesinde önemli olmakla birlikte birçok tehlikeyi de beraberinde getirmektedir. Bu tehlikelerden biri sosyal medyada bir gruba dahil olamama, görmezden gelinme ve dışlanma şeklinde tanımlanan siber dışlanmadır. Çalışma 2020-2021 döneminde Eskişehir Osmangazi Üniversitesi Tıp fakültesi'nde öğrenim gören öğrencilerde gerçekleştirilen kesitsel tipte bir araştırmadır. Çalışma için etik kurul onayı alındı. Çalışma grubu 1092 öğrenciden oluştu. Literatürden faydalanılarak bir anket form hazırlandı. Anket öğrenciler tarafından online olarak dolduruldu. Verilerin analizinde Mann-Whitney U testi, Kruskal Wallis testi, Spearman Korelasyon analizi ve Çoklu Doğrusal Regresyon analizi kullanıldı. Öğrencilerin 593'ü (%54.3) kadındı. Yaşları 17-27 arasında değişmekte olup, ortalama 21.6 ± 2.0 yıldı. Siberostracizm ölçeğinden alınan puanlar 14-70 arasında değişmekte olup ortalama 24.8 ± 9.9 puanı. Gün içerisinde en çok vakit geçirilen sosyal medya uygulamalarının instagram, whatsapp ve youtube idi. İleri analizde; kişilik tipi, aile tipi, gün içinde hobilerine vakit ayırma, arkadaşları ile yüz yüze iletişim, ebeveynlerinin kendine karşı davranışları, akıllı telefon ilk kullanma yaşı, günde akıllı telefon kullanma süresi ve sosyal medyada kimliğini gizleyerek üyelik oluşturma Siber dışlanma için prediktör olarak bulundu. Öğrencilerin siber dışlanma düzeyleri ile benlik saygısı düzeyleri arasında negatif bir ilişkili bulundu. İnternet ve sosyal medya uygulamalarının kullanımının artması ile dijital sağlık kavramı gündeme gelmiştir. Konu halk sağlığı açısından önemlidir. Sosyal medyanın zararlı etkilerinden korunmaya ve siber dışlanmayı azaltmaya yönelik müdahale programlarının geliştirilmesi önerilmektedir.

Anahtar Kelimeler: Siber dışlanma; dışlanma; benlik saygısı; tıp fakültesi; öğrenci

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1. Introduction

Thanks to various factors such as interactive use of social media, rapid access, and free expression of personal opinion, many individuals (especially the young individuals) carried a large portion of their lives into the digital environment (1).

The individuals' sources of access to the Internet gradually increase by means of the rapid and extraordinary advancements in technology (2). The ease of accessing the Internet because of the gradually increasing use of smartphones also comes with advantages and disadvantages (3).

Social media became an important communication instrument for the self-esteem development of young people by establishing communication, socializing, and expressing themselves by sharing posts (4). However, it also allows some persons to overexpose themselves and be aggressive more than normal (5). Furthermore, it forces individuals to stereotype and to ostracize the different persons; this might cause a delay in gaining the right identity at young ages when the self-esteem develops (3).

Ostracism, which is a universal social phenomenon in societal life, is very common among young individuals (6). Ostracism is defined as being ignored by one or more individuals, being overlooked, and not being involved in a group (7). Cyberostracism is, however, the ostracism observed or perceived in non-face-to-face communication (e-mail, social media, WhatsApp groups, etc.) and might be on purpose or arise from a technological problem (8).

Considering that many individuals spend a long time in social media nowadays, it can be seen that the effects of cyberostracism would be as high as or higher than physical and social ostracism and the importance of this subject will increase gradually. For this reason, the number of studies on cyberostracism has increased in recent years (9, 10). In previous studies, it was reported that, when subjected to cyberostracism, individuals feel bad and lose their self-esteem and sense of belonging (8, 11). Within this context, ostracism may cause mental problems

such as anxiety, depression, and anxiety disorders, loss of performance and motivation, and academic and professional failures (12).

As a result of the gradually increasing use of the Internet, the cyberostracism becomes an important public health problem. The low number of studies carried out on this subject in Turkey motivated us for this subject. This study carried out online, it was aimed to determine the level of cyberostracism among the students studying in a medical faculty in Turkey, to examine several variables thought to be related to this subject, and to analyze the relationship between cyberostracism and self-esteem.

2. Methods

Study Design, Population, and Sample Size

The present study is a cross-sectional study carried out in the spring semester of the educational year 2020-2021 on students studying at the Medical Faculty of Eskişehir Osmangazi University. The universe of this study consists of 1580 students studying at this faculty. No sampling was taken and it was aimed to reach the entire universe. Voluntariness was taken as the basis in participation and 488 (30%) students not accepting the participation or not completely answering the questionnaire questions were excluded and the study group involved 1092 students (70%).

Questionnaire and Data Collection

By making use of the literature, a questionnaire form was prepared as a data collection instrument (2, 13-16). The questionnaire form consists of three sections. The first section incorporates students' several sociodemographic characteristics and several variables thought to be related to cyberostracism. In this study, A-type character was defined as flurried, enthusiastic, competitive, and impatient, whereas B-type character was defined as calm, planned, systematic, and patient. The second section consists of the items of the Cyberostracism Scale and the third section includes the items of the Rosenberg Self-Esteem Scale. The form

was sent online to the students via the WhatsApp application. The consent of students volunteering for participation were obtained.

Cyberostracism Scale

It was developed by Hatun and Demirci in 2020 in order to assess the level of cyberostracism. The scale consists of 14 5-point Likert-type items and it has three sub-dimensions as Cyber Direct Excluded (1-4), Cyber Indirect Excluded (5-8), and Cyber Ignored (9-14). The scale includes no reverse-scored item. The answers given to the items were as follows: 1 – never, 2 – rarely, 3 – sometimes, 4 – mostly, and 5 – always. The total score ranges between 14 and 70 points; the higher the score is, the higher the level of cyberostracism in terms of the total scale and its sub-dimensions (15).

Rosenberg Self-Esteem Scale

The reliability and validity of the scale, which was developed by Rosenberg in 1963 in order to assess the level of self-esteem, in the Turkish language was tested in 1986 by Çuhadaroğlu. The scale consists of 10 4-item Likert-type propositions and items 1,2,4,6, and 7 are positive and 3, 5, 8, 9, and 10 are negative. The answers for negative items are as follows: 4 – I completely agree, 3 – I agree, 2 – I do not agree, and 1 – I do not agree at all, whereas the positive items are answered oppositely. The total score ranges between 10 and 40 points and the increasing scores refer to the increasing level of self-esteem (16, 17).

Statistical Analysis

The data obtained were analyzed using SPSS (v15.0) statistical package software. All the variables examined here were expressed as numbers and percentages. The normality of the distribution of scores from the Cyberostracism Scale, which is the dependent variable of this study, was tested using the Shapiro Wilk test. Statistical analysis was performed using the Mann-Whitney U test, Kruskal Wallis test, Spearman's Correlation analysis, and Multiple Linear Regression analysis. In regression analysis, in order to approximate the score distribution to the normal, the logarithms of scale and sub-dimensions were taken before establishing the model. Statistical significance was set at $p < 0.05$.

Ethics Approval

Before the study, the ethics committee approval was obtained from Eskisehir Osmangazi University's Non-Interventional Clinical Researches Ethics Committee (date: 04.06.2021, number: E-25403353-050.99-174633).

3. Results

The total scores in the Cyberostracism Scale range between 14 and 70 points and the mean score was found to be 24.8 ± 9.9 points (median: 22.0 points). The distribution of students' scores from the Cyberostracism Scale in total and its sub-dimensions is presented in Table 1.

Table 1. The distribution of students' scores from the Cyberostracism Scale in total and its sub-dimensions

The Cyberostracism Scale's Sub-Dimensions	The Cyberostracism Scale Score Median (Min-Max)
Cyber Direct Exclusion	7.0 (4.0-20.0)
Cyber Indirect Exclusion	6.0 (4.0-20.0)
Cyber Disregard	9.0 (6.0-30.0)
Total	22.0 (14.0-70.0)

Of the study group, 593 (54.3%) were female and 499 (45.7%) were male. The ages of participants were ranging between 17 and 27 years and the mean age was found to be

21.6 ± 2.0 years. It was determined that 51.6% of students were at 1st, 2nd and 3rd year of university, 51.3% reported that they have A-type character, 66.3% were living in a nuclear

family, and 57.8% reported that they have middle family income level. The distribution of the scores of participants in study group

from the Cyberostracism Scale by certain sociodemographic characteristics is presented in Table 2.

Table 2. The distribution of the scores of participants in study group from the Cyberostracism Scale by certain sociodemographic characteristics

Some Sociodemographic Characteristics	n (%)	The Cyberostracism Scale Score Median (Min-Max)	Test Value z / KW; p
Age Group (year)			
≤ 20	342 (31.3)	22.0 (14.0-70.0)	1.352; 0.509
21-22	360 (33.0)	22.0 (14.0-51.0)	
≥ 23	390 (35.7)	22.0 (14.0-62.0)	
Gender			
Female	593 (54.3)	22.0 (14.0-70.0)	-2.023;0.043
Male	499 (45.7)	21.0 (14.0-62.0)	
Grade			
1-2-3	564 (51.6)	21.0 (14.0-70.0)	0.741;0.459
4-5-6	528 (48.4)	23.0 (14.0-62.0)	
Type of personality			
A	560 (51.3)	23.0 (14.0-70.0)	-2.604;0.009
B	532 (48.7)	21.0 (14.0-52.0)	
Family Type			
Nuclear	724 (66.3)	21.0 (14.0-62.0) ^a	18.262;<0.001
Extended	264 (24.2)	25.0 (14.0-56.0) ^b	
Fragmented	104 (9.5)	23.0 (14.0-70.0) ^{a,b}	
Family income status			
High	367 (33.6)	21.0 (14.0-56.0) ^a	19.441;<0.001
Middle	631 (57.8)	22.0 (14.0-70.0) ^a	
Low	94 (8.6)	28.0 (14.0-56.0) ^b	
Total	1092 (100.0)	22.0 (14.0-70.0)	

a, b, c; The difference between groups that do not have the same letter in each column is significant (p<0.05)

It was determined that 50.2% were spending time for their hobbies during the daytime, 45.1% have friends generally from the same sex, 56.2% have bad face-to-face communication with their friends, 69.8% reported their parents' behaviors towards them as positive, 31.9% have used a smartphone at the age of 12 years or younger

for the first time, 49.7% were using a smartphone for 5 hours or longer a day, and 29.9% created a social media membership by concealing their identities. The distribution of study group participants' scores in the Cyberostracism Scale by several variables, which are thought to be related with the cyberostracism, is presented in Table 3.

Table 3. The distribution of study group participants' scores in the Cyberostracism Scale by several variables, which are thought to be related with the cyberostracism

Some Variables Considered to be Associated with the Cyberostracism	n (%)	The Cyberostracism Scale Score Median (Min-Max)	Test Value z / KW; p
Spending Time For Their Hobbies During The Daytime (Doing sports, playing musical instruments, etc.)			
Yes	548 (50.2)	21.0 (14.0-62.0)	3.704;<0.001
No	544 (49.8)	23 (14.0-70.0)	
Gender Distribution in the Fellowship			
Predominantly same-sex	493 (45.1)	22.0 (14.0-70.0)	1.375;0.503
Predominantly of the opposite sex	323 (29.6)	23.0 (14.0-56.0)	
Balanced number	276 (25.3)	21.0 (14.0-56.0)	
How She Describes Her Face-to-Face Communication with Her/His Friends			
Good	478 (43.8)	20.0 (14.0-56.0)	4.047;<0.001
Bad	614 (56.2)	23.0 (14.0-70.0)	
How Her Parents Evaluate Their Behavior Towards Herself/Himself			
Positive	762 (69.8)	21.0 (14.0-56.0)	-6.163;<0.001
Negative	330 (30.2)	28.0 (14.0-70.0)	

Smartphone First Use Age (years)			
≤ 12	348 (31.9)	25.0 (14.0-56.0)	-6.527;<0.001
≥ 13	744 (68.1)	21.0 (14.0-70.0)	
Smartphone Usage Time per Day (hours)			
≤ 4	549 (50.3)	21.0 (14.0-56.0)	5.933;<0.001
≥ 5	543 (49.7)	24.0 (14.0-56.0)	
Membership Story Created by Hiding Your Identity on Social Media			
Yes	326 (29.9)	29.0 (14.0-70.0)	-10.850;<0.001
No	766 (70.1)	20.0 (14.0-62.0)	
Total	1092 (100.0)	22.0 (14.0-70.0)	

In the present study, the social media applications that the students use at most were found to be Instagram (26.2%), WhatsApp (25.0%), and YouTube (18.5%). The social media applications that the students use are presented in Table 4.

Table 4. The social media applications that the students use

Social Media Applications	n*	%
Instagram	857	26.2
Whatsapp	818	25.0
Youtube	607	18.5
Twitter	421	12.9
Facebook	211	6.4
Telegram	157	4.8
Tiktok	92	2.8
Snapchat	48	1.5
Pinterest	33	1.0
Discort	31	0.9
Total	3275	100

*The numbers are evaluated on the answers given, not on the individuals.

In the multiple linear regression analysis, it was determined that having a type-A personality, living in a large family, not spending time on hobbies during the day, having poor face-to-face communication with friends, negative attitudes of parents towards their children, using a smartphone 12 and under 5 hours or more of using the phone and

the presence of a membership created by hiding one's identity on social media were found to be predictors of the Cyberostracism scale score ($p<0.05$). The results of multiple linear regression analyses established using the variables, which were found to be related to the level of cyberostracism, are presented in Table 5.

Table 5. The results of multiple linear regression analyses established using the variables, which were found to be related with the level of the cyberostracism

Variables Detected to be Associated with the Level of the Cyberostracism	The Cyberostracism Scale			
	Standardize beta	Unstandardize beta	%95 CI	p
Gender	0.014	0.005	-0.013-0.022	0.609
Type of personality	0.062	0.020	0.003-0.038	0.025
Family Type	0.065	0.013	0.002-0.023	0.019
Family income status	0.039	0.011	-0.004-0.026	0.165
Spending Time For Their Hobbies During The Daytime	0.088	0.029	0.011-0.047	0.002
Face to Face Communication with Friends	0.110	0.036	0.018-0.055	<0.001
Her Parents' Behavior Against Herself/Himself	0.150	0.054	0.035-0.073	<0.001
Smartphone First Use Age	0.148	0.052	0.033-0.072	<0.001
Smartphone Usage Time per Day	0.112	0.037	0.019-0.055	<0.001
Creating a Membership by Hiding Your Identity on Social Media	0.291	0.105	0.085-0.125	<0.001
R ²		0.212		<0.001
F		30.400		

CI: Confidence interval

The scores of study group participants in Rosenberg Self-Esteem Scale ranged between 10 and 40 points and the mean score was found to be 20.4 ± 5.4 points and the median score to be 21.0 (10.0-40.0) points. A positive and medium-level relationship was found

between students' scores in the Cyberostracism Scale and Rosenberg Self-Esteem Scale ($r: 0.49$, $p: 0.001$). The distributions of students' scores in Cyberostracism Scale and Rosenberg Self-Esteem Scale are illustrated in Figure 1.

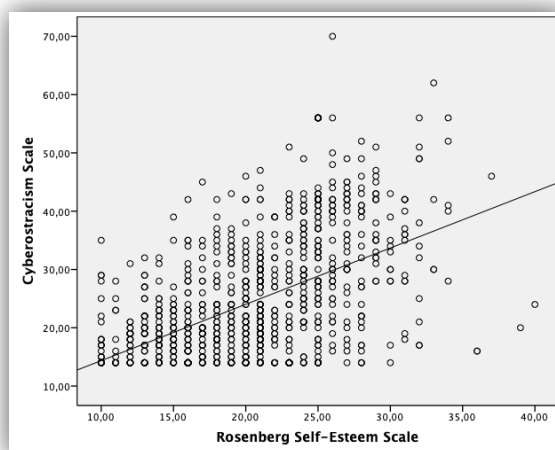


Figure 1. The distributions of students' scores in Cyberostracism Scale and Rosenberg Self-Esteem Scale

4. Discussion

Cyberostracism is an important public health problem. From this aspect, it is important to define cyberostracism, to determine the risk factors, and to examine the effects on individuals in different populations. Given the present study, it can be stated that the effect of cyberostracism was at a medium level among the medical faculty students.

There also are studies reporting that the problematic use of the Internet and the Internet addiction are more common among men (18, 19). For this reason, men are expected to have more problems in a virtual environment (cyberostracism). In a study carried out by Niu et al. on 1626 adolescents, the level of cyberostracism was reported to be higher (20). Similar results were reported in a previous study carried out in Turkey on university students (15). In the present study, different from the literature, the level of cyberostracism was found to be higher among women. In some of the studies, it was reported that there was no difference between the cyberostracism levels of men and women (21, 22). The reason for differences between the results reported in various studies may include the differences in measurement tools and

preferred social media applications. The fact that the studies were conducted in different socio-cultural groups may also have resulted in this result.

Since the persons having A-type characters are flurried, enthusiastic, competitive, and impatient, they are predicted to tend to risky behaviors, and these individuals are expected to have a higher level of cyberostracism. Moreover, in the present study, it was determined that the cyberostracism level of those having A-type characters was higher. In literature, no study relating cyberostracism to the character types could be found.

It is thought that the individuals living in large families might have stricter intra-familial control mechanisms and it might prevent their face-to-face and online communication development. The individuals living in such families are expected to have a higher level of cyberostracism. In the present study, the cyberostracism level among the participants living in large families was found to be higher than those living in nuclear families. Literature information on the subject could not be found.

Poverty negatively affects mental health and it poses a risk factor from the aspect of peer victimization (23). The students with poor familial income status are assumed to not be able to sufficiently express themselves in social life and they are expected to be subjected to the high level of cyberostracism. In the present study, the level of cyberostracism was found to be higher among the participant having such a familial income level.

It is known that individuals, who cannot have a healthy relationship with parents and live a conflict with them, spend more time in a virtual environment and they are more vulnerable to cyber threats (24). A similar result was reported in a study carried out by Buelga et al. (25). Similar to the literature, it was determined in the present study that the level of cyberostracism was higher among the students considering the attitudes of their parents towards them as negative.

Internet addiction, which is observed as a result of long and unconscious use of a smartphone, also causes several negative results such as cyberostracism (22, 26). In the present study, the level of cyberostracism was found to be higher among those having the age of first smartphone use at 12 years or younger and those spending 5 hours/day or more with a smartphone. A similar result was reported in a previous study carried out by Ni and Yan in China (27).

The virtual environments, which allow the creation of membership by concealing the real identity through fake names or pictures, also bring several cyber threats with them (28). In a study carried out by Gölcü et al. on university students, 1/3 of the participants stated that they have created an account using a different name in social media (29). A similar result was achieved in the present study and the level of cyberostracism was found to be higher in this group.

Among the young individuals, who are still at the age when the skill of coping with stress that is one of the mental problems arising from the exclusion, the peer relationships are given more importance when compared to adults and they might have emotional

problems more in case of exclusion (30). In the present study, the level of cyberostracism was found to be higher among the students having a poor face-to-face relationship with friends.

In parallel with the advancement of technology, a new social media application is introduced every day. In the present study, the social media applications that the students use most frequently were found to be Instagram, WhatsApp, and YouTube. In a previous study carried out in Turkey, the most frequently used social media applications were reported to be Instagram, YouTube, and Twitter, respectively (31), whereas the most frequently used social media applications in the USA were reported to be Facebook, Twitter, and Pinterest, respectively (32). In a study carried out in South Africa, the most frequently used apps were found to be WhatsApp, Facebook, and YouTube (33). The difference between the results reported might be the diversity of social media apps, time of the study, the sociocultural structure of countries, and tendencies of individuals.

Self-esteem is an important factor in an individual's behaviors and preferences in social life and in perceiving events. Low self-esteem is known to have a negative relationship with perceived exclusion (34). It is thought that feeling ostracized in an environment with limited self-expression chance would threaten self-esteem more than the face-to-face environments. In the present study, a negative relationship was found between students' levels of cyberostracism and self-esteem. In a previous study carried out by Schneider et al., it was reported that the participants ostracized in social media have lower self-esteem when compared to those, who are not subjected to cyberostracism (35). In studies carried out on Facebook, it was reported that the levels of self-esteem and sense of belonging among the experimentally ostracized individuals were found to be lower (11, 36). In a previous study, Filipkowski et al. reported that there was no change in self-esteem levels of individuals subjected to cyberostracism (21).

Given the fact that the use of the Internet and social media gradually increases nowadays,

the results reported here are very important. Interventions addressing the protection from harmful effects of social media, which is an integral part of our lives, on individuals and to decrease cyberostracism should be planned.

5. Conclusions

In the present study, it can be seen that cyberostracism is an important public health problem. The character type, family type, devoting time for hobbies during the day, face-to-face communication with friends, behaviors of parents towards the participant,

age of the first use of a smartphone, time of smartphone use in a day, and creating a social media membership by concealing the identity were found to be the predictors of cyberostracism.

More comprehensive studies on cyberostracism, which is a new concept for digital health, should be carried out. It is thought that the public health policies to be developed for decreasing the level of cyberostracism would contribute to future physicians for achieving a higher level of self-esteem.

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