MEDICAL RESEARCH REPORTS

Med Res Rep 2024;7(2):68-78
https://doi.org/10.55517/mrr.1400086

ORIGINAL ARTICLE

Social Media Use and Perceived Loneliness Level in Covid-19 Infected Patients and Its Relationship with Depression

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ÖZET

Amaç: Çalışmamızda Covid-19 nedeniyle karantinaya alınan bireylerle, Covid-19 geçirmeyip karantinaya alınmayan kişilerin depresyon, anksiyete, sosyal medya bağımlılığı ve algılanan yalnızlık düzeyleri arasındaki ilişkilerin karşılaştırılması ve değerlendirilmesi amaçlanmıştır. **Yöntem:** Psikiyatri polikliniğine anksiyete ve depresyon belirtileri ile başvuran 92'si Covid-19 tanısı ile karantinaya alınmış, 97'si Covid-19 geçirmemiş ve karantinaya alınmamış 189 hasta çalışmaya katılmıştır. Katılımcılara sosyodemografik bilgi formu, Beck Depresyon Ölçeği, Beck Anksiyete Ölçeği, Sosyal Medya Bağımlılığı Formu, Algılanan Yalnızlık Ölçeği, Nomofobi Ölçeği uygulanmıştır. **Bulgular:** Karantinaya alınan hastaların anksiyete düzeyleri alınmayanlara kıyasla anlamlı derecede yüksek ve algılanan yalnızlık düzeyleri ise anlamlı derecede düşük olarak saptanmıştır. Karantinaya alınan bireyler arasında depresyon ve anksiyete düzeyleri arasında orta düzey ve anlamlı bir ilişki (r=0,593), nomofobi ve sosyal medya bağımlılığı düzeyleri arasında orta düzeyde ve anlamlı bir ilişki (r=0,679) ve anksiyete ve yalnızlık düzeyleri arasında orta düzeyde ve anlamlı bir ilişki (r=0,404) tespit edilmiştir. Covid -19 geçirmemiş hastalar arasında nomofobi ile yalnızlık arasında zayıf ve anlamlı bir ilişki (r=0,295) ve nomofobi ile sosyal medya bağımlılığı arasında orta düzeyde ve anlamlı bir ilişki (r=0,609) gözlenmiştir. **Sonuç:** Çalışmamız, karantinanın olumsuz psikolojik etkilerle ilişkili olduğu ve bunun da kişinin yalnızlık hissi ve sosyal medya kullanımı ile ilişkili olduğu sonucuna varmıştır. Bu sorunlar, güvenilir kaynaklardan doğru bilgi edinilmesi ve sosyal medyaya sınırlı zaman ayrılmasıyla azaltılabilir.

Anahtar kelimeler: Anksiyete, Karantina, Sosyal medya

ABSTRACT

Aim: This study aimed to compare and assess the connections between depression, anxiety, social media dependency, and perceived loneliness levels in individuals who were quarantined due to Covid-19 and those who were not affected by the virus and were not quarantined. **Methods:** The study involved 189 patients seeking treatment for anxiety and depression at a psychiatry outpatient clinic, with 92 of them being quarantined due to Covid-19 and 97 not being affected by the virus. Participants completed a sociodemographic information form, Beck Depression Inventory, Beck Anxiety Inventory, Social Media Addiction Form, Perceived Loneliness Scale, and Nomophobia Scale. **Results:** Quarantined patients exhibited significantly higher anxiety levels and lower perceived loneliness levels compared to those who were not quarantined. Among individuals with Covid-19, there was a moderate and significant correlation between depression and anxiety levels (r = 0.509), a moderate and significant correlation between nomophobia and social media addiction levels (r = 0.580), and a moderate and significant correlation between anxiety and loneliness levels (r = 0.305). Among patients without Covid-19, a weak but significant correlation between nomophobia and loneliness (r = 0.295) and a moderate and significant correlation between nomophobia and social media addiction (r = 0.609) were observed. **Conclusion:** The study concluded that quarantine was linked to adverse psychological effects, which were also associated with feelings of loneliness and social media usage. These issues could potentially be alleviated by providing accurate information from reliable sources and by limiting social media usage.

Keywords: Anxiety, Quarantine, Social media

Cite this article as: Baziki Çetin S, Akıl Ö, Calıskan İlter Z. Social Media Use and Perceived Loneliness Level in Covid-19 Infected Patients and Its Relationship with Depression. Medical Research Reports 2024; 7(2): 68-78

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INTRODUCTION

Quarantine is defined as keeping people infected with an infectious disease in a separate place to check to see if they are infected and to prevent the spread of the disease to other people (1). Individual quarantine can be effective when transmission of an infectious disease is limited, and cases originate from other countries or have clear epidemiological links with other cases. In the later stages of an outbreak, when the virus continues to spread and connections between cases are unclear, individual quarantines may not be enough. In such cases, community-wide quarantines, such as closing schools, canceling public meetings, and reducing travel, may be necessary (2). The term "quarantine," originating from the word quarantenaria, meaning a period of forty days, was initially used in Venice during the 12th century to isolate individuals with leprosy and was later widely employed during plague outbreaks (3). In recent years, many regions quarantined during severe acute respiratory syndrome (SARS), Ebola, MERS outbreaks. More recently and globally, quarantine has also been recommended by World Health Organization (WHO) to manage the Covid-19 outbreak. Despite the WHO' s endorsement of quarantine as a measure to contain the spread of the epidemic, research has revealed adverse psychological effects. Literature has demonstrated that factors such as restricted freedom, monotony, and social stigmatization resulting from quarantine can have detrimental effects on individuals' mental well-being. (1). In the past, psychiatric evaluations of individuals quarantined in outbreaks have revealed that they are at a higher risk of depression, anxiety, post-traumatic stress and emotional exhaustion than the general population (3-5). During the Covid-19 pandemic, quarantine measures were put in place, and there was a greater reliance on technology for social interaction compared to previous outbreaks (6, 7). The use of social media has become increasingly important in our lives and has begun to impact our socializing habits (8). The impact of social media on human psychology is a significant area of study, and the heightened reliance on social media during the Covid-19 pandemic can be seen as essential for tasks like accessing information, pursuing education and work, leisure activities, communication, shopping, entertainment, and arranging virtual meetings (9). Nevertheless, it has been found that using social media can result in various other issues, including excessive screen time, addiction to social media and gaming, psychological issues like stress, depression, and feelings of isolation, as well as physical health problems (10). In today's world, with over 3 billion people using social media (11), the impact of phones and social media on depression, anxiety, and loneliness has been neglected in favor of previous studies on the effects of quarantine. As a result, the isolation experienced during the Covid-19 pandemic and the social distancing measures have been replaced by digital connections through social media. During this time, there has been a significant increase in both the time spent on

social media and the amount of information obtained online (12). In this research we aimed to investigate the levels of depression and anxiety, social media use and perceived loneliness among people who were quarantined with diagnosed Covid 19 infection and people who had never had the disease and were not quarantined during this period and to make a comparison between the groups.

MATERIAL AND METHODS

Individuals who applied to the psychiatric outpatient clinic with anxiety and depression complaints and volunteered to be included in the study were informed about the purpose of the study and their consent was taken. The study data were obtained between March 01, 2022 and October 01, 2022. The researcher conducted the scales with the participants for 30 minutes. Following a psychiatric interview, individuals diagnosed with anxiety disorder or depression by a specialist psychiatrist according to DSM-5 criteria were included in the study. The participants were then divided into two categories: those who had been in quarantine within the past 3 months and those who had not. For those who were and quarantined, patients who applied within the first 3 months after quarantine, were between the ages of 18-65 and had no previous psychiatric admission were included in the study. The participiants who had Covid-19 but did not quarantine were excluded. For not quarantineted, those who were between the ages of 18-65 and had their first psychiatric admission were included in the study, and those who quarantined because someone in their family had Covid-19 or had a contact were excluded. In total, 92 Covid-19 patients who were infected with Covid in the last 3 months and 97 patients who did not have Covid-19 were included in the study. Before starting the study, the necessary approval was obtained from the Ministry of Health and the University Ethics Committee (decision dated 07.02.2022 and numbered 2022/03-25).

Data Collection Tools

The personal data form, which was created by reviewing the relevant literature and obtaining expert opinions, included 16 questions about the sociodemographic information of the individuals and whether they or their relatives had Covid-19. In addition to the demographic information form, Perceived Loneliness Scale (UCLA), Beck Depression Inventory (BDI), Beck Anxiety Inventory (BAI), Social Media Addiction Scale Adult Form (SMAS- AF) and Nomophobia Scale were applied to all participants after reading the consent form and obtaining permission.

Beck Depression Inventory (BDI)

The Beck Depression Inventory was developed by Beck in 1961 and assesses emotional, cognitive, physical and motivational factors (13). It is a self-report scale frequently used in research and clinical practice. Although it mainly aims to measure depression symptoms in detail, it also helps to assess cognitive content (14). The Turkish validity and reliability study of the BDI used to measure the degree of depression was performed by Hisli (15).

Beck Anxiety Inventory (BAI)

BAI is 21 items self-report scale used for determining level and intensity of anxiety symptoms. The items in the scale are scored between 0 and 3 and the result obtained varies between 0-63. The score obtained from the test is evaluated as follows: 0-7 minimal anxiety, 8-15 mild anxiety, 16-25 moderate anxiety and 26-63 severe anxiety (16). The Turkish validity and reliability study was performed by Ulusoy et al (17).

UCLA Loneliness Scale

This scale was developed to assess the loneliness levels of individuals. The form revised by Russell, Peplau and Cutrona includes 10 positive and 10 negative statements (18). UCLA Loneliness Scale was adapted into our language by Demir (1989) (19). In each item of this scale, feelings and thoughts about social relationships are evaluated, and expected to rate how often the participants's experience the situations in the scale with a Likert-type four-point rating scale. the total score of the scale as the 'General Loneliness Score'. The general lonelines score ranges from 20 to 80. The higher score indicates the higher level of loneliness.

Social Media Addiction Scale - Adult Form (SMAS- AF)

The scale developed by Şahin and Yağcı (2017) to measure the level of people's dependence on social media. There are 20 items and two sub-dimensions; "Virtual Tolerance" and "Virtual Communication". Two items of the scale are reverse coded. Score ranges from 20 to 100. A high score means that the individual perceives the self as a "social media addict" (20).

Nomophobia Scale

The nomophobia scale is a 20-item 7-point Likert-type scale used to assess smartphone addiction. (20). The scale developed by Yıldırım and Correira consists of four sub-dimensions to measure the nomophobic status of the individual. These are (i) Not being online, (ii) Loss of communication, (iii) Lack of mobile device, (iv) Inability to access information. The reliability value (Cronbach Alpha) was calculated as 0.95, and the Cronbach Alfa of the four subscales were 0,94, 0,87, 0.83 and 0,81 (21). Turkish adaptation study was conducted (22).

Statistical Analysis

The analysis findings were reported in the form of Mean±Standard Deviation and Median (minimum-maximum) for numerical data, and frequency (percentage) for categorical data. The Kolmogorov-Smirnov test was employed to assess normal distribution. It was found that the scores did not meet the normal distribution. Mann-Whitney U test was used for group comparisons and Spearman Correlation Analysis was used to examine the relationship between scale scores. The significance level was taken as $p<0.05$. SPSSv22.0 (Statistical Package for Social Sciences) package program was used to analyze the data.

RESULTS

In the quarantine group (QG), 46% of individuals were between the ages of 18-25, 43% were aged 35-55, and 11% were aged 55-72. Additionally, 38% of the group were male, 66% were married, and 66% resided with their spouse and children. Among the cohabitants, 35% had contracted Covid-19. In contrast, the non-quarantine group (non-QG) consisted of 50% individuals aged 18-25, 39% aged 35-55, and 11% aged 55-72. Furthermore, 35% were male, 49% were married, and 54% lived with their spouses and children. Notably, 48% of cohabitants in this group had contracted Covid-19. The sociodemographic characteristics of the participants in our study are given in Table 1.

Table 1. Sociodemographic characteristics of the study participants

Quarantined status		**Yes**		**No**		
		Number (n)	**%**	**Number (n)**	**%**	**p**
Age (years)	18-35	42	46	49	50	0.552
	35-55	40	43	38	39	
	55-72	10	11	9	11	
Gender	Male	35	38	54	55	0.016
	Female	57	62	43	45	
Education level	Literate	5	5	8	8	0.233
	Primary school	26	28	22	23	
	Secondary school	14	15	23	24	
	High school	13	14	24	25	
	University	34	37	20	20	
Marital status	Married	61	66	48	49	0.013
	Single	30	33	44	45	
	Divorced-widowed	1	1	5	6	
Living together	Alone	9	10	14	14	0.613
	Partner and children	61	66	52	54	
	Parents and siblings	22	24	31	32	
Place of residence	Village	2	2	7	8	0.258
	City	85	92	74	76	
	County	5	5	16	16	
History of psychiatric disease	Yes	44	52	47	48	0.931
	No	48	48	50	52	
Comorbidity	Hypertension	5	5	7	8	0.477
	Diabetes mellitus	5	5	4	5	
	Heart failure	3	3	0	0	
	Obstructive lung disease	4	4	5	5	
	Cancer	10	11	5	5	
	None	65	71	74	77	
COVID-19 history of cohabitants	Yes	60	35	46	48	0.014
	No	32	65	51	52	
Alcohol and substance use	Yes	1	1	3	3	0.340
	No	91	99	94	97	
Cigarette	Yes	21	77	34	36	0.065
	No	71	23	63	64	
Total		92	100	97	100	

*Mann-Whitney U

It was observed that anxiety levels of QG were significantly higher ($p<0.01$) and perceived loneliness levels were significantly lower ($p<0.01$) compared to non-QG. However, there were no significant differences between the groups in terms of social media addiction, depression, and nomophobia, as indicated in Table 2.

Table 2. Scale scoring averages of people with and without COVID-19

	Quarantined status	Number (n)	Mean rank	p
Depression scores	Yes No	92 97	16.57±9.56 16.88±8.98	0.666
Nomophobia scores	Yes No	92 97	53.02±29.41 50.72±19.53	0.849
Anxiety scores	Yes No	92 97	23.54±13.56 16.23±13.93	**<0.01**
Loneliness scores	Yes No	92 97	41.61±11.10 46.79±6.58	**<0.01**
Social media addiction scores	Yes No	92 97	2.22±0.99 2.02±0.87	0.88

*Mann-Whitney U

In the investigation of the correlation between depression, nomophobia, anxiety, social media addiction, and levels of loneliness in a sample population, it was observed that there existed a statistically moderate and significant association between depression and both social media addiction ($p=0.01$, $r=0.342$) and loneliness levels ($p=0.01$, $r=0.328$). Additionally, a moderately significant relationship was identified between depression and anxiety levels ($p<0.01$, $r=0.593$). Furthermore, a robust and statistically significant correlation was found between nomophobia and social media addiction scores ($p<0.01$, $r=0.679$), while a significant and moderate association was observed between anxiety and loneliness scores ($p<0.01$, $r=0.404$) (Table 3).

In the non-QG cohort, the study revealed a moderate correlation between nomophobia and feelings of loneliness ($r=0.367$), a strong correlation between nomophobia and addiction to social media ($r=0.759$), and a moderate correlation with perceived loneliness ($r=0.367$), as well as a weak correlation with the severity of depression ($r=0.230$). These correlations were found to be statistically significant ($p<0.05$) as shown in Table 3.

Table 3. The correlation of the scale scores of those quarantined and those not quarantined

Quarantined status		n		1	2	3	4	5
Yes	**Social media addiction total score**	92	r	1.000	.122	.679**	.342**	.243*
			p		.246	**<0.01**	**.001**	**.020**
	Perceived loneliness score	92	r		1.000	.030	.328**	.404**
			p			.779	**.001**	**<0.01**
	Nomophobia score	92	r			1.000	.354**	.179
			p				.001	.089
	Beck depression scale	92	r				1.000	.593**
			p					**<0.01**
	Beck anxiety scale	92	r					1.000
			p					
No	**Social media addiction total score**	97	r	1.000	.256*	.759**	-.030	.056
			p		**.011**	**<0.01**	.774	.583
	Perceived loneliness score	97	r		1.000	.367**	.230*	.053
			p			**<0.01**	**.023**	.607
	Nomophobia score	97	r			1.000	-.091	.093
			p				.373	.366
	Beck depression scale	97	r				1.000	.217*
			p					**.033**
	Beck anxiety scale	97	r					1.000
			p					

1: Social media addiction total score, 2: Perceived loneliness score, 3: Nomophobia score, 4: Beck depression scale, 5: Beck anxiety scale
*Spearman correlation analysis

Upon comprehensive assessment of all cohorts, a robust association was observed between levels of social media addiction and nomophobia (r=0.703), while a weaker correlation was identified with depression (r=0.152) and anxiety levels (r=0.153). These findings were statistically significant (p=0.05) as depicted in Table 4.

Table 4. Correlation of scale scores of all participants

	n		1	2	3	4	5
Social media addiction total score	189	r	1.000	.103	.703	.152*	.153*
		p		.158	**<0.01**	**.037**	**.036**
Perceived loneliness score	189	r		1.000	.138	.089	.101
		p			.057	.224	.166
Nomophobia score	189	r			1.000	.160*	.113
		p				**.028**	.121
Beck depression scale	189	r				1.000	.356**
		p					**<0.01**
Beck anxiety scale	189	r					1.000
		p					

DISCUSSION

In this research, it was observed that individuals identifying as QG exhibited elevated levels of anxiety compared to non-QG individuals. Furthermore, a noteworthy association was identified between anxiety levels and perceived loneliness among QG participants. Additionally, the study revealed a connection between nomophobia levels and social media addiction in QG individuals, with these levels demonstrating positive correlations with both depression and anxiety. Numerous studies have demonstrated that participation in social networking can act as a protective element by reducing feelings of isolation during periods of quarantine. This is accomplished by enabling individuals to engage in virtual social interactions, connect with others, and meet their cultural and social needs through digital platforms (23). In contrast, Bano et al. (2021) conducted a cross-sectional study to investigate the association between nomophobia and symptoms of depression, anxiety, and stress. Their results revealed that students who spent more time using the internet experienced higher levels of anxiety and stress, which is consistent with the findings of the current study (24). Farchakh et al. (2021) reported a significant relationship between nomophobia and anxiety, depression, high stress, poor sleep and impulsivity (25). In another study, it was observed that people with high scores in gaming addiction, compulsive internet use and social media use also had high scores in depression, loneliness, poor quality sleep and depression-related anxiety (26). Studies have shown that people who feel lonely tend to use their smartphones for social interactions and exhibit behaviors related to addiction when using social media (27). Bian and Leung (2014) stated that smartphone use allows people to avoid face-to-face or voice dialog with others, avoid uncomfortable environments while in public, and enter a virtual, private mobile computing environment (28). In this context, it can be argued that intensive smartphone use and the resulting nomophobia may be related to loneliness.

A study in 2021 in China showed that anxiety levels were lower in Wuhan province during the Covid-19 pandemic compared to residents of Hubaei province, who showed high levels of anxiety. While people in Wuhan city had the opportunity to directly access information about Covid-19, people in Hubaei city had to rely more on social media and were more likely to be exposed to false and alarming information (29). Recent studies suggest that various health problems and risky behaviors, particularly exposure to misinformation and conspiracy stories during the pandemic, may be closely linked to social media use (30, 31). Although numerous studies indicate that perceived loneliness levels would be elevated in QG, our findings revealed a contrasting result, with lower perceived loneliness levels in QG. However, individuals in QG exhibited higher scores on the anxiety scale. The Southeastern Anatolian region, where the study was conducted, is characterized by a strong emphasis on kinship and family ties, with an extended family structure prevailing over

nuclear families. Family relationships in this region are notably more robust and supportive compared to those in western regions of the country. In instances of illness or death, individuals in this region endeavor to offer support to their relatives, often utilizing social media or telephone communication for this purpose (32). We think that the present results can be explained, at least in part, by the cultural structure of the region in which the study was conducted, which is characterized by strong family relationships and individuals living together in the family.

Examination of the factors associated with anxiety and anger symptoms following the MERS outbreak indicates that individuals tend to experience heightened anxiety during the initial phases of the outbreak, when their knowledge about the disease is limited and they rely more on unofficial sources of information (4, 33). As susceptibility grew and people increasingly turned to informal channels for information, there was a concurrent escalation in levels of anxiety. It was observed that various factors identified in the initial phases of the pandemic may also have ramifications for subsequent periods. These results demonstrate the significance of effectively addressing anxiety levels through the timely and accurate dissemination of information about the disease during the initial phase of the pandemic. (33). These results are in line with recent studies showing that feelings of loneliness during quarantine play an important role for depression, anxiety and other comorbidities (34). Loneliness may also explain a significant proportion of the variation in psychiatric symptoms observed in individuals (35). Many expected outcomes of quarantine and associated social and physical distancing measures are important risk factors for mental health problems (1).

One limitation of our study is that the sample was limited to individuals receiving treatment at a psychiatric outpatient clinic. This narrow study population limits the generalizability of the results to the wider population. Furthermore, due to the absence of pre-quarantine data from the participants, it is not feasible to ascertain any potential alterations in the levels of nomophobia and other variables in comparison to the preceding period. Therefore, it is difficult to say whether the proposed model can explain the relationships between the analyzed variables in the same way in situations other than the pandemic. Another limitation to take into account is that the nomophobia scale only focused on the aggregate nomophobia score. Although the total nomophobia score is frequently employed in global literature, a more thorough evaluation of the sub-dimensions of nomophobia could have provided more nuanced understanding of the connections among the variables being studied. In addition, we think that the inclusion of QG patients who presented within the first 3 months after the quarantine, those who had not previously applied to the psychiatric unit and the exclusion of those who did not comply with the quarantine rules, and the exclusion of cases in which the individual himself was quarantined due to the possibility of Covid-19 in a family member, although he did not have

Covid-19 in non-QG, increased the reliability of our results.

Although quarantine is a necessary preventive measure during major infectious disease outbreaks, our study and other studies suggest that quarantine may often be associated with negative psychological effects. This finding is supported by studies showing that the psychological effects of quarantine can be detected months or years later, emphasizing the need for effective mitigating measures to be taken during the quarantine planning process (4). It is also important for individuals to access information from reliable sources and to allocate limited time, at most once or twice a day, to search for information on social media (36).

Source(s) of financial support: None.

Conflicts of interest: The authors have no conflicts of interest to declare.

Ethical Statement: Confirmation Number: I06-392-23, Date: 20/06/2023

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