

The Role of Online Communication Platforms in Maintaining Social Connectedness When Face-to-face Communication is Restricted

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ABSTRACT

Social connectedness, an indicator of psychological well-being, requires social interaction and communication among individuals. Prior research usually examined the relationship between the use of online communication channels and the sense of social connectedness under the circumstances where face-to-face communication was readily available. Pandemic provided an excellent setting to study the sole effect of the use of online communication on social connectedness as online communication was not accompanied by in-person communication due to restrictions such as lockdowns. Seizing the opportunity, this study aims at investigating the relationship between the use of online communication platforms and social connectedness at a time when face-to-face communication was not an option and individuals employed online communication channels heavily. To this end, a survey was conducted online on 406 college students in Turkey in November- December 2022 to present retrospective analyses. The findings indicate while face-to-face communication is the prime component to build social connectedness, the use of online communication channels, particularly WhatsApp, social networking sites, video call helped to maintain social bonds among individuals when in-person communication was virtually absent. The research provides insights on how different communication channels can promote social connectedness with varying degrees depending on their social presence.

Keywords: Online Communication Channels, Social Connectedness, Social Media, Pandemic, Social Presence.

Yüz yüze İletişimin Kısıtlı Olduğu Durumlarda Sosyal Bağlılığın Korunmasında Online İletişim Platformlarının Rolü

ÖZ

Psikolojik iyi oluş halinin bir göstergesi olan sosyal bağlılık, bireyler arasında sosyal etkileşim ve iletişimi gerekli kılmaktadır. Önceki çalışmalar online iletişim kanallarının kullanımı ile sosyal bağlılık hissi arasındaki ilişkiyi genellikle yüz yüze iletişimin de kolayca mümkün olduğu koşullarda incelemiştir. Sokağa çıkma yasakları gibi kısıtlamalar nedeniyle yüz yüze iletişimin mümkün olmadığı pandemi süreci, online iletişimin sosyal bağlılık üzerindeki tek başına etkisini incelemek için mükemmel bir ortam sağlamıştır. Bu fırsattan yararlanarak, bu çalışma, yüz yüze iletişimin bir seçenek olmadığı ve bireylerin online iletişim kanallarını yoğun bir şekilde kullandığı bir dönemde, online iletişim platformlarının kullanımı ile sosyal bağlılık arasındaki ilişkiyi incelemeyi amaçlamaktadır. Bu doğrultuda, Kasım-Aralık 2022'de Türkiye'de 406 üniversite öğrencisi ile çevrimiçi bir anket yapılmıştır. Bulgular, yüz yüze iletişimin sosyal bağlılık oluşturmak için temel bileşen olduğunu, ancak özellikle WhatsApp, sosyal ağ siteleri ve görüntülü görüşme uygulamaları gibi online iletişim kanallarının, yüz yüze iletişimin kısıtlı olduğu durumlarda bireyler arasındaki sosyal bağları korumaya yardımcı olduğunu göstermektedir. Araştırma, farklı iletişim kanallarının sosyal bulunuşluk özelliklerine bağlı olarak değişen derecelerde sosyal bağlılığı nasıl artırabileceğine ilişkin fikirler sunmaktadır.

Anahtar Kelimeler: Online İletişim Kanalları, Sosyal Bağlılık, Sosyal Medya, Pandemi, Sosyal Bulunuşluk.

1. Introduction

The World was tremendously struck by the COVID-19, which started in the late fall 2019 in China. The infection was caused by SARS-CoV-2 virus, which resulted in a mild to severe contagious respiratory illness including deaths at an unprecedented level worldwide (Dong et al., 2020). Since there was no medicine or vaccine to prevent or cure the illness at the outbreak of the pandemic, governments and authorities were compelled to take precautions such as stay-at-home orders, social/physical distancing, movement restrictions, closure of educational institutions and workplaces to prevent the further spread of

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the virus. With the first confirmed case in March 2020, Turkish government closed all schools, ordered businesses to end indoor activities, restricted travel among cities, forbade all social gatherings. The government enacted lockdowns on weekends and on public holidays, ordered a total curfew for over the age of 65 and under the age of 20. The drastic measures such as frequent curfews, the adoption of remote working and distance education practices meant a decrease in physical interactions among individuals. Hence, people turned to online communication channels to pursue business activities, to get education, to access news, to make purchases, to keep in touch with their friends or families.

Maintaining meaningful social bonds and relationships plays a crucial role in promoting psychological well-being (Baumeister & Leary, 1995; Valkenburg & Peter, 2007). On the other hand, lack of social interaction and isolation can have adverse effects on psychological health, involving increased risk of depression, distress, and other mental health conditions (Alsubaie et al., 2019) and can lead to a decreased sense of social connectedness. Therefore, social interaction and communication are a must for human beings under any condition. During the pandemic, the online communication channels such as social networking sites, video call platforms etc. were the sole platforms for social interaction besides phone call since in-person interactions were rather limited. They enabled individuals to have virtual gatherings, attend virtual events, and communicate with their close ties.

Previous research demonstrated that the use of online platforms help to compensate for real-life social deficiencies, to get social support and a sense of belonging to others and to enhance social connectedness (Ellison et al., 2014; Ryan et al., 2017). But these studies were all conducted when the use of online communication channels were, inevitably, coupled with face-to-face communication. There is little research in literature investigating the relationship between the feeling of social connectedness and the use of online communication channels under the conditions where in-person communication was virtually absent. However, the COVID-19 pandemic provided researchers with an excellent setting where face-to-face interactions were lacking so that the sole effect of the use of online communication channels on social connectedness could be tested. To address the gap in literature, it is necessary to investigate whether the use of these platforms for communication purposes can help to preserve bonds among individuals and to build a sense of social connectedness where in-person communication is absent or quite restricted.

Drawing on social presence theory (Short et al., 1976) and considering the social presence of each communication channel, this study examines the relationship between the use of online communication channels and the feeling of social connectedness, which is an indicator of well-being (Baumeister & Leary, 1995). To this end, an online survey was carried out on a sample of 406 college students in Turkey between November- December 2022, and the participants were asked to answer the questions considering their experiences under the pandemic restrictions such as legal curfews and stay-at-home orders. The data were analyzed through SPSS 22.0 (IBM SPSS Statistics for Windows, 2013), and the findings were interpreted within the framework of stimulation hypothesis (Valkenburg & Peter, 2007). Although this study draws upon the data related to the experiences during the COVID-19 pandemic, the findings can be generalized to future incidents such as other pandemics or disasters that will limit face-to-face communication and will result in a dramatic increase in online communication.

2. Online Communication Platforms

Online communication platforms/ channels are digital platforms and tools that enable individuals or groups to communicate and collaborate over the internet. Examples include email, instant messaging applications, video calling applications, social networking sites, Wikis, blogs etc. Among these, social networking sites, wikis and blogs constitute a broader concept as social media (Troom & Leonardi, 2013). Listed under social media, social networking sites (SNSs) are spheres where users congregate around shared interests to build or continue relationships (Boyd & Ellison, 2008), and differ from other media having virtual collections of user profiles (Hughes et al., 2012) and enabling viewing and articulating a list of other users with whom they are bound up within the system (Boyd & Ellison, 2008). On the other hand, instant messaging services such as WhatsApp can be considered a social media platform depending on interpretation (Pang & Woo, 2020). These channels all allow users to communicate in real-time or asynchronously irrespective of physical location and time.

According to “the uses and gratifications approach” (Katz et al., 1973), online communication channels satisfy a wide range of motives; social interaction and communication (Boztepe Taskiran, 2019; Türk, 2023) being the predominant ones. For instance, research has revealed major motives for SNS use are self-expression and self-presentation (Hollenbaugh, 2021; Yenilmez Kacar, 2023), entertainment and escapism (Falgoust et al., 2022), affection seeking and social support (Apodaca, 2017) whereas those for instant messaging app use are relationship maintenance (Lo & Leung, 2009), information sharing and convenience (Gan & Li, 2018). On the other hand, individuals utilize e-mail especially to meet their needs related to information seeking/ sharing (Papacharissi & Rubin, 2000) and video calling apps for distance education (Correia et al., 2020) and business communication purposes (Denstadli et al., 2011) besides communication and social interaction.

According to the studies conducted during the pandemic, individuals steered towards online platforms to get/ share the latest news, information as to the updates on the coronavirus (Watson, 2020) and guidelines established by health authorities (Saud et al., 2020). Being restricted to home for an extended period of time, individuals utilized these platforms for relaxation, pass time, escapism (Bowden-Green et al., 2021) and for communication with their families and social circles whereby they got social support, maintained their existing relationships and social connectedness (Banskota et al., 2020). They could continue their education through synchronous or asynchronous distance learning practices (Grammens et al., 2022) and keep up their work by conducting business operations, meetings, and transactions online by means of online platforms (Anka et al., 2020). Therefore, the use of online communication channels escalated rapidly even in the early stages of pandemic.

At the height of the pandemic, as of 2021 January, the number of global internet users rose by 316 million and reached 4.7 billion, which made up 59.6% of the world’s population. Typical internet users spent an average of 6 hours and 54 minutes per day on the internet (Kemp, 2021a). The most popular instant messaging application, WhatsApp saw a 40% increase in usage (Perez, 2020). The video calling app, Zoom was downloaded 30 times more than the previous year (Kalmykov, 2020). Research reported an additional one to two hours spent on social media per day (Dixon, 2022). In Turkey, average daily amount of time spent on social media totaled up to 2 hours 57 minutes (Kemp, 2021b). As there are a large number of reasons for utilizing online communication channels during the pandemic as mentioned above, the question arises to what extent these channels were used specifically for the purpose of social interaction and communication, and which online communication channels came to the fore in comparison to other channels such as phone call or face to face communication.

3. Online Communication Platforms and Social Connectedness

Communication and social interactions are fundamental human needs since sharing thoughts, emotions or any kind of information enables human beings to socialize with others, to get to know oneself within these social interactions and to comprehend the world around. Through social interactions, individuals establish bonds with others, enhance and retain these relationships and attain the sense of social connectedness. Social connectedness can be defined as the feeling of relatedness and psychological tie felt towards others, groups of people or society (Haslam et al., 2015). It derives from the human instinct to belong to other(s) and to engage in meaningful and positive social interactions (Baumeister & Leary, 1995). Being closely related to psychological well-being, it elevates mood, decreases stress, strengthens self-esteem (Lee & Robbins, 1995), causes an increase in life satisfaction (Sum et al., 2009) and helps to keep control of physiological and mental balance. Lack of social connection leads to the feeling of loneliness (Cacioppo & Patrick, 2008), unhappiness (Liu et al., 2019) in addition to the problems such as maladjustment (Baumeister & Leary, 1995).

Besides face-to-face communication, online communication channels play a significant role in establishing and maintaining social connections. These platforms enable people to connect to each other by making audio/ video call, sending text messages, creating and sharing various forms of contents, whereby people who are physically distant from each other can communicate and maintain their relationships with ease and exhilarating opportunities. However, studies on the relationship between the use of online platforms and psychological well-being have yielded contradictory results. There are two

main opposing hypotheses as to the impact of online communication channels on individuals. According to the displacement hypothesis, the utilization of online communication replaces the time that could be spent with strong ties and close circles offline and harms the quality of these friendships (Kraut et al., 1998; Valkenburg & Peter, 2007). Thus it has detrimental effects on psychological well-being of individuals such as depression, stress (Marino et al., 2018), lower self-esteem, distorted body image (Macmillan, 2017), social isolation (Primack et al., 2017) and emotional instability (Throuvala et al., 2019). These negative impacts emerge especially when these channels are used excessively.

There is also proof supporting the opposite hypothesis: Stimulation hypothesis suggests that the utilization of online communication enhances the quality of relationships as it increases social interaction with existing friends in alternative forms; therefore, it contributes to psychological well-being (Valkenburg & Peter, 2007). A significant number of studies have revealed positive effects of online communication such as increase in self-esteem and in life satisfaction (Seabrook et al., 2016), decrease in anxiety and depression (Macmillan, 2017). Creating occasions to express the self, to build self-identity, to form or maintain friendships and to get social support, these platforms increase social capital, reduce the level of loneliness and gratify the need for social connectedness (Liu et al., 2019; Ryan et al., 2017; Seabrook et al., 2016).

As regards the use of online communication platforms specifically during the pandemic when face-to-face interactions were limited, or sometimes absent, some studies underlined their significance in relieving anxiety and stress by providing social support under lockdown conditions (Saud et al., 2020; Stuart et al., 2021). On the other hand, some others reported negative effects such as escalation in stress, depression, and anxiety levels, but the motive for using digital channels in these studies was seeking information on COVID-19 (Boursier et al., 2020; Liu et al., 2021). Therefore, the impact of online communication channels on psychological well-being is not known when they were used particularly for communication purposes in the absence of in-person communication, and there is little research thereon. Considering that individuals were physically isolated from each other, therefore, were already liable to experience a decrease in their psychological well-being and social-connectedness under strict stay-at-home measures, it is suggested that online communication platforms, being the sole tools for social-interaction during lockdowns, would not harm relationships, on the contrary, would help to maintain them and would improve mental health. Accordingly, the question arises whether the use of these channels was positively related to social connectedness when they were employed specifically for communication and social interaction purposes under restricted in-person conditions during the pandemic. Therefore, this study attempts to answer this very question and address the gap within the literature.

While examining the relationship between various online channels and social connectedness, the reasons for any potential difference in social connectedness can be interpreted drawing on social presence theory (Short et al., 1976). The theory of social presence classifies types of media in accordance with the quality of social presence each embodies (Oh et al., 2018) such as their capability to convey verbal and non-verbal cues like eye contact, gestures, and to enable synchronicity, feedback and psychological proximity within an interaction (Walther, 1996). For instance, face-to-face communication renders the highest level of social presence since it provides visual cues, interactivity, physical closeness, synchronicity, besides auditory cues. On the other hand, email has a lower level of social presence, being devoid of visual cues, verbal information and synchronicity, etc. (Oh et al., 2018). Prior research demonstrated that communication channels higher in social presence are more likely to promote psychological well-being of individuals (Liu et al., 2019; Riedl et al., 2013). Hence, if any connection between the use of different communication channels and social connectedness is determined in this study, social presence theory will help to interpret the distinctions.

4. Material and Methods

4.1. Research Questions

The current study aims at determining the use of online communication channels during the pandemic restrictions and examining the relationship between the use of online communication platforms and social connectedness under circumstances where in-person communication was virtually absent.

The study attempts to answer the following questions:

1. To what extent was the engagement on online communication platforms during the pandemic restrictions? Were there any significant gender differences thereof?
2. To what extent was the feeling of social connectedness during the pandemic restrictions? Were there any significant gender differences thereof?
3. How did the use of different channels of communication relate to the feeling of social connectedness when face-to-face communication was restricted?

4.2. Method

For the current research, quantitative research model was adopted, and an online survey was conducted in November- December 2022 via Google Forms. The research design was developed drawing on a pilot study which was carried out by the researcher beforehand to gain a broader view on online communication habits during the pandemic in Turkey (Yenilmez Kacar, 2021).

4.3. Population and Sampling

In Turkey, 54% of the population is under the age of 35 (Dierks, 2022), and most of the users of online communication channels belong to that group (Kemp, 2021b). Therefore, the population of this study was determined as young adults who used online communication channels during the pandemic in Turkey. The participants were selected from college students via convenience and snowball sampling- a non-probability sampling method- for reasons such as ease of use, low cost and limited amount of time.

Ethical clearance was received from Trakya University Social and Human Sciences Research Ethics Committee with the report number 2021.05.20 dated 26.05.2021. Then, the survey link was shared on WhatsApp and email groups. To represent a population of one million and more, the minimum sample size aimed to reach was calculated as 384 with 95% confidence interval, 5% margin of error (Cohen et al., 2002; Tutar & Erdem, 2020), and 406 valid responses were obtained. The total sample was made up of 209 females (51.5%) and 197 males (48.5 %). Most of the participants were between 18 and 21 (n = 270, 66.5 %).

4.4. Measures

The questionnaire involved questions on engagement on online communication channels and on the sense of social connectedness besides demographic questions related to age and sex.

Engagement on Online Communication Platforms. The participants were asked closed ended questions such as “how many hours did you spend on the internet/ social media on average on a daily basis during the pandemic restrictions?” and “how often did you use SNSs during the pandemic restrictions?”. Assuming that most of the participants would live with their family during the pandemic and, therefore, would have a greater need to communicate with their friends, they were asked “how often did you communicate with your friends in the following ways under the pandemic restrictions?”. To compare the engagement on online communication platforms during the pandemic with normal circumstances, a scale was developed. The scale yielded two factors as “increase in engagement on SNSs” and “increase in engagement on WhatsApp”, which is discussed under Findings in detail.

Social connectedness. To measure the level of social connectedness the participants felt during the pandemic, a scale was developed by adapting some items from “the social connectedness scale” produced by Duru (2007). The scale by Duru was measured to have a high reliability ($\alpha = .90$) and has one factor. The items were rewritten to measure the feeling of social connectedness to friends and family during the pandemic. Higher scores denote higher degrees of social connectedness on the scale.

4.5. Processing Data

Data obtained via online survey were analyzed on SPSS 22.0 (IBM SPSS Statistics for Windows, 2013). Descriptive analyses were performed to measure the counts, percentages and mean values. In order to develop aforementioned scales, exploratory factor analyses were conducted, and both scales yielded a good reliability level, discussed in detail under Findings section. To carry out parametric tests, the

normality of the sample was tested: Skewness and kurtosis values varied from -1.5 to +1.5, indicating that the variables were normally distributed (Tabachnick & Fidell, 2013). *t*-tests were performed to establish significant distinctions by gender. A Pearson’s correlation was implemented to interrogate meaningful statistical relationships among variables, then simple linear regressions were conducted to determine if and to what extent an independent variable can significantly predict a dependent variable.

5. Results

Engagement on Online Communication Platforms

The first research question asked to what extent individuals engaged on online communication platforms during the pandemic measures such as lockdowns. To answer this, the engagement on the internet, social media and SNSs was measured. Then, the use of primary communication channels was examined in terms of communication with friends. Next, to test if there was a change in engagement on online communication platforms during the pandemic, a scale was developed.

According to findings, the most participants (*n* =136, 33.5%) reported spending 5-6 hours on the internet during pandemic while only 7 (1.7%) reported spending less than one hour on a daily basis during the pandemic restrictions. On the other hand, the most participants (*n* =238, 58.6%) reported spending 2-4 hours on social media and only 2 (0.5%) reported spending more than 8 hours on a daily basis as shown in Table 1. 385 participants (94.8%) had SNS accounts whereas 21 (5.2%) had no account on SNSs. The data attained from 21 participants without a SNS account were not included in any tests related to SNS use within the research.

Table 1. Time Spent on the Internet/ Social Media

	Time spent on the internet		Time spent on social media	
	n	%	n	%
less than 1hour	7	1.7	99	24.4
2-4 hours	81	20.0	238	58.6
5-6 hours	136	33.5	53	13.1
7-8 hours	107	26.4	14	3.4
more than 8 hours	75	18.5	2	0.5
<i>n</i>	406	100	406	100

Descriptive statistics for the ownership of an SNS account and the frequency of SNS use (on a 5-point Likert scale; 1 = never, 5= always) by 385 participants with an account on SNSs are shown in Table 2. Most of the participants (*n* = 367, 95.3%) reported having an account on Instagram and used it the most (*M* = 4.03, *SD* = 1.03). The lowest number of account ownership was for Tiktok (*n* = 53, 13.1%) while the least usage was for Facebook *M* = 1.57, *SD* = 1.02).

Table 2. Use of Social Networking Sites

	Have an account on.....		Frequency of use			
	<i>n</i>	%	Minimum	Maximum	<i>M</i>	<i>SD</i>
Instagram	367	95.3	1	5	4.03	1.03
Twitter	267	69.4	1	5	3.5	1.25
Tiktok	53	13.1	1	5	2.67	1.48
Snapchat	201	52.2	1	5	2.57	1.41
LinkedIn	139	36.1	1	5	2.54	1.24
Facebook	230	59.7	1	5	1.57	1.02
<i>n</i>	385					

As regards the channels of communication during the pandemic, the participants reported using WhatsApp the most to communicate with their friends (*M* = 3.40, *SD* = 0.87 on a 4-point Likert scale; 1 = never/ almost never, 4 = several times a day). They used social networking sites (*M* = 3.13, *SD* = 1.05), made a phone call (*M* = 2.34, *SD* = 0.95), made a video call (*M* = 1.94, *SD* = 1.01), met face-to-face (*M* = 1.80, *SD* = 0.80), sent an SMS (*M* = 1.76, *SD* = 1.08) and sent an email (*M* = 1.09, *SD* = 0.37) to keep in touch with friends in descending frequency.

To assess the increase in engagement on online communication platforms during the pandemic restrictions, an exploratory factor analysis was performed on seven items through principal component analysis using Varimax rotation. One item relating to Increase in Engagement on SNS: “I spent more time on SNSs during the pandemic” was deleted as the factor loading was below .50 while the others were above .69 (Field, 2009). Sampling adequacy (KMO= .576) and Bartlett’s test of sphericity ($\chi^2(6) = 157.548$, $p < .001$) indicated the set of variables was appropriate for factor analysis. The analysis revealed two factors with eigenvalues over 1; Increase in Engagement on SNSs and Increase in Engagement on WhatsApp during the Pandemic, explaining 70.149% of the variance in total. As regards the reliability of the scale, the total Cronbach’s Alpha was found to be .55. Considering the low number of items within each factor, this value still demonstrated acceptable reliability for the scale (Hinton et al., 2004: 364). The factor loadings and the Cronbach’s alpha of each factor are shown in Table 3.

Table 3. Exploratory Factor Analysis of the Increase in Engagement on Online Communication Platforms During the Pandemic

Factors and Items	Factor Loadings	Variance Explained %	Cronbach's Alpha
<i>Factor 1: Increase in Engagement on SNSs during the Pandemic</i>			
1. I had more accounts on SNSs than before the pandemic.	.859	33.110	.49
2. I shared more on SNSs during the pandemic than I normally do.	.755		
<i>Factor 2: Increase in Engagement on WhatsApp during the Pandemic</i>			
3. I used WhatsApp more during the pandemic than I normally use.	.840	37.039	.62
4. I belonged to more groups on WhatsApp than before the pandemic.	.842		
	Cumulative variance	70.149	
	Total Cronbach's Alpha	.55	
	Kaiser-Meyer-Olkin Measure of sampling adequacy	.576	
	Bartlett's Test of Sphericity	$\chi^2 = 157.548$	
		df= 6	
		$p = .00$	
	<i>n</i>	385	

The mean scores of the increase in engagement on SNSs and WhatsApp were quite high (on a 3-point Likert scale; 1 = false; 3 = true). The mean score of increase in engagement on WhatsApp ($M = 2.27$, $SD = 0.70$) was much higher than that on SNSs ($M = 1.52$, $SD = 0.62$).

Engagement on Online Communication Platforms with Respect to Gender

An independent-samples *t*-test was carried out to compare online communication activities during the pandemic for women and men. There was no significant effect for gender ($p = .93$) in the scores of time spent on the internet. As regards the time spent on social media, there was a significant difference between women ($M = 2.17$, $SD = 0.75$) and men ($M = 1.83$, $SD = 0.69$); $t(383) = 4.51$; $p < .001$). There was a significant gender difference for the increase in engagement on SNSs; women ($M = 1.65$, $SD = 0.65$) and men ($M = 1.37$, $SD = 0.54$), $t(378.734) = 4.65$; $p < .01$); for the increase in engagement on WhatsApp, women ($M = 2.38$, $SD = 0.69$) and men ($M = 2.16$, $SD = 0.70$), $t(404) = 3.18$; $p < .01$). For all the variables aforementioned, the mean values of women were significantly higher than those of men.

In terms of the channels of communication with friends during the pandemic, there was a significant gender difference in the scores of communication face-to-face; women ($M = 1.70$, $SD = 0.74$) and men ($M = 1.91$, $SD = 0.83$), $t(383) = -2.72$; $p < .01$); communication via SMS; women ($M = 1.90$, $SD = 1.19$) and men ($M = 1.61$, $SD = 0.96$), $t(375.651) = 2.64$; $p < .01$); communication via SNSs; women ($M = 3.28$, $SD = 0.99$) and men ($M = 2.96$, $SD = 1.09$), $t(383) = 2.99$; $p < .01$); communication via video call; women ($M = 2.22$, $SD = 1.05$) and men ($M = 1.72$, $SD = 0.91$), $t(381.070) = 5.06$; $p < .001$). However, there was not a considerable gender distinction as to communication via phone, e-mail or via WhatsApp (all $p > .05$). Whereas the mean values of men were higher than those of women for communication face-to-face, the mean values of women were significantly higher than those of men for communication via SMS, SNSs and video call.

Social Connectedness during the Pandemic

In accordance with the second research question, to test social connectedness during the pandemic restrictions, an exploratory factor analysis was conducted on five items using principal component analysis with Varimax rotation. Sampling adequacy (KMO= .617) and assumptions of sphericity ($\chi^2(10) = 917.431, p < .00$) sufficed to conduct factor analysis.

The analysis yielded two factors with eigenvalues over 1; Connectedness to Friends and Connectedness to Family, explaining 81.633% of the variance in total. The reliability of the scale was tested, and the total Cronbach's Alpha was found to be .68, which demonstrates good reliability for the scale (Hinton et al., 2004: 364). The factor loadings and the Cronbach's alpha of each factor are illustrated in Table 4.

Table 4. Exploratory Factor Analysis of Social Connectedness During the Pandemic Restrictions

Factors and Items	Factor Loadings	Variance Explained %	Cronbach's Alpha
<i>Factor 1: Connectedness to Friends</i>			
1. I felt disconnected from my friends during the pandemic. (reversed)	.894	45.132	.83
2. I didn't feel related to my friends during the pandemic. (reversed)	.845		
3. I felt so distant from my friends during the pandemic. (reversed)	.861		
<i>Factor 2: Connectedness to Family</i>			
4. I had a sense of togetherness with my family during the pandemic.	.950	36.501	.89
5. I felt close to my family during the pandemic.	.942		
	Cumulative variance	81.633	
	Total Cronbach's Alpha	.68	
	Kaiser-Meyer-Olkin Measure of sampling adequacy	.617	
	Bartlett's Test of Sphericity	$\chi^2 = 917.431$	
		df = 10	
		p = .00	
		n = 406	

The mean score of connectedness to family ($M = 3.06, SD = 1.10$) was higher than that of connectedness to friends ($M = 2.85, SD = 1.13$) on a 5-point Likert scale; 1 = strongly disagree, 5 = strongly agree.

Social Connectedness during the Pandemic with Respect to Gender

An independent-samples *t*-test was carried out to compare connectedness to friends and connectedness to family for women and men. However, there was not a meaningful difference in the scores ($p = .81$ and $p = .18$, respectively).

Relationship between the Channels of Communication with Friends and Connectedness to Friends

During the pandemic restrictions, 16 participants reported living alone (3.9%), 10 with friends (2.5%), 5 with relatives (1.2%). The majority of the sample lived with their family ($n = 375, 92.4\%$), which implies most of the participants were physically isolated from their friends; therefore, they were more liable to be devoid of social connectedness with their friends. Hence, in accordance with the third research question, the relationship between social connectedness to friends and channels of communication with friends was tested by using Pearson's correlation coefficient. The results of the analysis are illustrated in Table 5.

Table 5. Bivariate Correlations Among Variables

Variables	1	2	3	4	5	6	7
1 Connectedness to Friends							
2 Comm. with friends face to face	.291**						
3 Comm. with friends via phone call	.183**	.408**					
4 Comm. with friends via WhatsApp	.214**	.354**	.425**				
5 Comm. with friends via SNS	.171**	.266**	.434**	.576**			
6 Comm. with friends via Video Call	.155**	.231**	.546**	.333**	.396**		
7 Comm. with friends via SMS	.095	.153**	.356**	.216**	.255**	.289**	
8 Comm. with friends via email	-.002	.155	.210**	.019	.064	.259**	.251**

** p < .01 level (2-tailed).
n = 385

Bivariate correlation coefficients indicated that connectedness to friends was moderately correlated with face-to-face communication with friends, $r = .29$ ($p < .01$), which was the highest coefficient among the scores showing relationship between the channels of communication with friends (2, 3, 4, 5, 6) and connectedness to friends. Connectedness to friends was significantly related to communication with friends via WhatsApp, $r = .21$. There was a weak but statistically significant correlation between connectedness to friends and communication with friends via phone call, $r = .18$; via SNS, $r = .17$; via videocall, $r = .16$ (all $p < .01$). On the other hand, there was no significant correlation between connectedness to friends and communication with friends via SMS ($p > .05$) or via email ($p > .05$).

The study also examined if the uses of different communication channels are predictors of social connectedness. To check the effect of the channels of communication with friends on the variable of connectedness to friends, simple linear regressions were carried out. The analysis revealed that communications with friends face to face explained 9% of the variance in connectedness to friends ($F(1) = 35.532$, $p = .00$); communications with friends via WhatsApp explained 5% of the variance in connectedness to friends ($F(1) = 18.417$, $p = .00$); communications with friends via phone call explained 3.3 % of the variance in connectedness to friends ($F(1) = 13.232$, $p = .00$); communications with friends via SNSs explained 3% of the variance in connectedness to friends ($F(1) = 11.563$, $p = .00$).

6. Discussion and Conclusion

This research aims to investigate the use of online communication channels and the levels of social connectedness, and to examine the relationship between social connectedness and the use of online communication platforms when face-to-face communication is restricted. The COVID-19 pandemic offered an unprecedented setting to test these. As most of the participants stated to be staying with their family during the lock-down period, which brought about limited in-person contact with their friends, the study focuses on social connectedness in terms of connectedness to friends and the channels of communication with friends.

In line with the first research question, the engagement on online communication platforms during the pandemic restrictions was measured. The results indicate that most of the participants (78.3%) spent more than five hours per day on the Internet. Most of them (58.6%) spent two to four hours a day on social media, which supports “Digital 2021: Turkey report” (Kemp, 2021b).

Nearly all participants (94.8%) had an account in any social networking site. According to the data, Instagram was the most popular SNS among all others. Of the participants with a SNS account, the majority (95.3%) had an account on Instagram and used it the most during the pandemic. Facebook ranked the third after Twitter in terms of the number of participants who had an account on it; however, it was used the least. This suggests that individuals in Turkey created an account on Facebook in the past and still held it, but did not use it anymore during the pandemic. The decrease in popularity of Facebook in Turkey was also demonstrated in “Digital 2021: Turkey report” by Data Reportal (Kemp, 2021b) while it was the most used social platform based on global figures (Kemp, 2021a). Twitter was the second popular platform as to both the number of users and the frequency of usage. However, it is evident that Twitter was utilized extensively as a source of global/ local health information besides social networking during the pandemic since people were in need of instant and up-to-date information as to the global crisis.

Our study shows that among the primary channels to communicate with friends, WhatsApp was the most frequently used one to get in touch with friends under strict stay-at-home orders. This particular finding is in accordance with the findings of Nguyen et al. (2021) that showed the use of any messaging app was far more than email, social media, video call or voice call in the early months of the pandemic.

SNSs followed WhatsApp in frequency of use to communicate with friends. This fact implies that while SNSs had been more popular for consuming user-generated contents till 2019 (GWI, 2021), with the outbreak of the pandemic, social component of social networking sites came to the fore. They were preferred more often than a phone call or a video call, which underlines its significance in maintaining existing offline social connections. Boyd et al. (2008) and Smock et al. (2011) also pointed to such function of SNSs as a feature which distinguishes it from other online platforms. It is interesting that even

though there was little chance to meet face-to-face during the frequent stay-at-home orders during the pandemic, face-to-face communication was still a more common form than communication via e-mail or SMS among friends according to our findings. During this period, individuals could easily access email and SMS, but they preferred them even less than face-to-face communication. It may stem from the fact that email is more commonly used for formal communication rather than within one's closer ties, and SMS has already lost its popularity to Internet protocol-based messaging services such as WhatsApp, which is a free application. This finding also implies that during the pandemic, individuals endeavored to meet in-person to maintain relationships despite the strict measures such as stay-at-home orders at weekends, at public and religious holidays and partial curfews for people under the age of 20.

As to the increase in engagement on online communication platforms, the results indicate that participants engaged both on SNSs and WhatsApp far more than they normally do, which is similar to previous research (Boursier et al., 2020; Gioia et al., 2021; Nguyen et al., 2020, 2022). Such an increase can be explained by greater need for online social support and belonging during COVID-19 measures such as quarantine. In our study, participants were found to utilize WhatsApp much more than they did SNSs. This may stem from the fact that individuals were deprived of and in need of communication under the pandemic limitations, and WhatsApp, which mainly focuses on messaging, fulfilled this need as an easy and instant communication platform with advanced features that allows to make voice call or videocall. Moreover, besides communication, WhatsApp was utilized for educational and business purposes extensively during the pandemic, and these uses led to greater increase in engagement on WhatsApp than on SNSs.

As regards the engagement on online communication platforms during the pandemic, a significant gender difference was observed. Women spent more time on the internet and social media than men did and increased their use of SNSs and WhatsApp far more than men, which is parallel with the findings of Nguyen et al. (2020), showing a more significant rise in the use of any form of digital communication by women than men and Gioia et al. (2021), demonstrating a more dramatic increase in time spent on SNSs for women than men. According to our findings, women wrote a SMS, used SNSs and made videocalls to get in touch with their friends more often than men did, which is in line with the findings of Kimbrough et al. (2013), who carried out their study under normal circumstances. This underlines that women made use of mediated communication technologies more than men during stay-at-home orders as they are more oriented towards relationship maintenance online (Muscanell & Guadagno, 2012; Williams et al., 2009). On the other hand, men met their friends face to face more often than women, which implies they could gratify the needs of social interaction and communication better face-to-face. Kimbrough et al. (2013) also demonstrated men's tendency to use direct communication more than women before the pandemic.

With respect to the second research question to examine the level of social connectedness during physical distancing, a scale was developed measuring connectedness to friends and connectedness to family as two separate factors. The results reveal that connectedness to friends was significantly lower than connectedness to family during the pandemic. The reason for this is that most of the individuals lived with their family during the pandemic restrictions and they had limited face-to-face interactions with their friends due to the imposed stay-at-home orders. As to the social connectedness during the pandemic, no significant gender difference was observed either for connectedness to friends or connectedness to family.

Considering the finding that most of the participants were physically distant from their friends and felt less socially connected to their friends than to their families, the question arises if the use of online communication channels promoted the sense of social connectedness to friends when they could not meet in-person. In line with the third research question, the relationship between social connectedness to friends and the use of various channels to communicate with friends was examined. In general, the findings demonstrate that higher frequency of communicating with friends via WhatsApp, phone call, SNSs, videocall or face-to-face was positively related to higher social connectedness to friends. This finding is contrary to that of Nguyen et al. (2022), who found higher usage of digital communication predicted less social connectedness during the pandemic. According to our findings, communication with friends via SMS or email wasn't found to be related to the feeling of social connectedness to friends. The more individuals used WhatsApp, phone call, video call, the more they felt socially connected to their

friends, which is in line with social presence theory (Short et al., 1976). This particular finding suggests that these channels, all high in social presence (Fox & McEwan, 2017), provided an experience analogous to face-to-face communication and contributed to social connectedness.

Communication via SNSs, was also positively related to social connectedness, which means individuals utilized SNSs as a vehicle to preserve bonds with the ones they were already close to. This particular result corroborates the findings of previous studies carried out before the pandemic (Shane-Simpson et al., 2018; Vanden Abeele et al., 2018). Furthermore, communication via SNSs predicted an increase in social connectedness more significantly than the use of video call did although video call was found to have much higher social presence than SNSs in previous research (Fox & McEwan, 2017; Nguyen et al., 2022; Oh et al., 2018). This may stem from the fact that certain SNSs enable synchronous communication with rich visual and verbal cues, which is similar to in-person communication, besides asynchronous communication. When these SNSs are used for communication purposes in particular, their features such as live video streaming, synchronous video or audio chat are employed more and, hence, SNSs attain far more social presence.

Communication via WhatsApp predicted an increase in social connectedness the most significantly among all the mediated communication channels. A possible explanation for this might be that WhatsApp is more than a text messaging channel with high social presence (Fox & McEwan, 2017), and is generally utilized to maintain relationships (Pang & Woo, 2020; Valkenburg & Peter, 2007). Via WhatsApp, individuals could get in touch with their friends through voice call and video call, even in a group, therefore it may have contributed to the feeling of social togetherness more.

Face-to-face communication had the highest correlation with social connectedness to friends. As individuals met their friends in-person more, they felt more socially connected to them. It is interesting that although face-to-face communication was quite limited and rare under social distancing measures, meeting in-person -albeit rare- sufficed to reinforce the feeling of social connectedness with friends. This stems from that face-to-face interactions have the highest social presence in comparison to means of mediated communication (Fox & McEwan, 2017). This particular finding demonstrates in-person communication played the primary role in facilitating social connectedness.

The findings of this study reveal that besides social presence of online communication channels, the purpose of use had a significant effect on the feeling of social connectedness attained. Previous research showed contradictory results as to the link between the use of online communication channels and social connectedness, and some reported a decline in the feeling of social connectedness (Liu et al., 2019; Nguyen et al., 2022). However, in our study the use of these platforms was examined particularly in terms of their use for communication purposes rather than their uses such as pass time, entertainment or surveillance. Therefore, it can be inferred that depending on the purpose of use of these platforms and on the existence of a chance to communicate face-to-face, social connectedness obtained as a result of use may differ.

In brief, the current study underlines the vital role of face-to-face communication in establishing social connectedness, but also demonstrates that online communication channels such as SNSs, WhatsApp and video call helped to maintain social connectedness among individuals effectively when the chances of in-person interactions were virtually missing. It can, therefore, be assumed that when used with the purpose of communicating with friends, online platforms can contribute to individuals' overall well-being in the absence of face-to-face communication. This particular finding supports the stimulation hypothesis (Valkenburg & Peter, 2007) that online communication can improve the quality of individuals' existing relationships and, thus, reduce loneliness and have a positive effect upon mental health.

The study also presents examples on how different channels of communication can help to enhance social connectedness among individuals with varying degrees depending on their social presence. Moreover, it indicates that online communication channels can be utilized as a substitute for face-to-face communication during global crises necessitating stay-at-home orders and, still, can sustain psychological well-being of the society.

The dramatic rise in the use of online channels for communication during the pandemic also demonstrates that access to the internet and these channels is a basic need for human beings in the 21st

century. Governments and authorities are to take notice of this fundamental right and to develop policies to enable widespread adoption of the internet. Furthermore, they are to grant subsidies for free access to the internet in the time of disasters to maintain social bonds among citizens.

Arařtırmacıların Katkı Oran Beyanı / Contribution of Authors

Yazarların alıřmadaki katkı oranları Glnur YENİLMEZ KAAR %100 řeklinde dir.
The authors' contribution rates in the study are Glnur YENİLMEZ KAAR %100 form.

ıkar atıřması Beyanı / Conflict of Interest

alıřmada herhangi bir kurum veya kiři ile ıkar atıřması bulunmamaktadır.
There is no conflict of interest with any institution or person in the study.

İntihal Politikası Beyanı / Plagiarism Policy

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Bu alıřmada Yksekğretim Kurumları Bilimsel Arařtırma ve Yayın Etięi Ynergesi kapsamında belirtilen kurallara uyulmuřtur.
In this study, the rules specified within the scope of the Higher Education Institutions Scientific Research and Publication Ethics Directive were followed.

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