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RESEARCH ARTICLE

Investigating the moderator effect of fear of COVID-19 in the relation between communication anxiety and self-efficacy

Nesrullah Okan 

ABSTRACT

Background/purpose – COVID-19 has forced many people to face psychological problems, with already difficult living conditions having become progressively more challenging. Individuals with low pre-pandemic levels of communication anxiety saw those levels increase, which negatively affected their self-efficacy. Therefore, the main purpose of this study was to examine the moderating effect of fear of COVID-19 on the relationship between communication anxiety and self-efficacy.

Materials/methods – Three measurement tools were used to perform analyses regarding the purpose of the research; the Communication Anxiety Scale, the Self-efficacy Scale, and the Fear of COVID-19 Scale. Along with these variables, the moderating effect of COVID-19 fear was examined. IBM's SPSS 25 package program and Hayes's process were used to perform the analysis. Data from 393 participants were included in the analysis within the scope of the research.

Results – In the model in which the moderating effect of COVID-19 fear was examined, it was concluded that fear of COVID-19 worsened the relationship between communication anxiety and self-efficacy. In addition, a negative and significant result was obtained between communication anxiety and self-efficacy.

Conclusion – According to the results obtained from this research, fear of COVID-19 increases communication anxiety and decreases self-efficacy. At the same time, fear of COVID-19 had a negative moderating effect on the relationship between communication anxiety and self-efficacy. This research was completed by analyzing the variables, presenting the results, forming a discussion, and with suggestions put forward.

Keywords – COVID-19, COVID-19 fear, communication anxiety, self-efficacy, moderator.

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1. INTRODUCTION

As social beings, connections between people are realized through communication. This human communication basically refers to a process that begins in the mother's womb and continues throughout life. A baby cries when they are hungry, children play with their friends, students get the right to speak in the classroom, and an artist performing on the stage are all forms of human communication. Communication, however, is not just a verbal process, with there being two types of communication, namely verbal and nonverbal communication (Eroğlu et al., 2013). In some cases, individuals may have hesitations in communicating, which is referred to as "communication anxiety."

Çakmak (2018) stated that communication anxiety is an individual's anxiety about communicating with another person or other people. Mutlu (2012) defined communication anxiety as the cognitive process problem in communicating with others. In other words, communication anxiety may be expressed as the cognitive anxiety of the individual in communicating with others. McCroskey (1997) expressed that communication anxiety was the fear and anxiety experienced by the individual whilst communicating with others. In the literature, the discussion of whether communication anxiety is a personal characteristic or a situation is ongoing (Bourhis et al., 2006), and there are opinions to be found that accept both of these. Beatty et al. (1998) mentioned that communication anxiety was a variable of an individual structure. Although there have been various studies presented on communication anxiety (e.g., Beatty et al., 1998; Bodie, 2010; Bourhis et al., 2006; Duff et al., 2007; Dwyer, 2000), the area may be said to have been generally neglected in terms of published research.

Some researchers have associated communication anxiety with neuroticism (Blume et al., 2010), whilst others linked communication anxiety with social anxiety (Daly, 1978; Leary, 1983). Levinson et al. (2011) concluded that communication anxiety is also associated with introversion and neuroticism. Based on these studies, communication anxiety can be stated to affect one individual's interaction with others. In particular, there is a situation that negatively affects the self-efficacy levels of individuals. Kuh et al. (2011) mentioned high levels of anxiety found in some individuals. Bandura (1997) stated that anxiety and stress are related to an individuals' self-efficacy. In other words, individuals with high self-efficacy levels can cope more easily with communication concerns (Bandura, 2000). As communication anxiety has been largely neglected by researchers, the relationship between communication anxiety and self-efficacy also presents a gap in the literature.

Considering the potential for communication issues during crises such as a pandemic, it appears worthy to investigate how the COVID-19 pandemic has affected individuals' communication anxiety and self-efficacy levels. To put this more clearly, the current study aims to examine the relationship between communication anxiety and self-efficacy, and to address the moderating effect of COVID-19 fear on this relationship.

2. LITERATURE REVIEW

2.1. Communication Anxiety and Self-Efficacy

Hassal et al. (2013) stated that one of the biggest obstacles to an individual's communication skills development is communication anxiety, and as such, individuals with communication anxiety tend to avoid communicating with others. Richmond and McCroskey (1989) described individuals with high communication anxiety as quiet individuals who are

reluctant to communicate. Therefore, individuals in this situation are not expected to establish healthy levels of communication and may develop a sense of inadequacy about themselves. This situation affects the self-efficacy of individuals. The concept of self-efficacy is one that has an important place in both the social sciences and also in psychology.

Self-efficacy is one of the basic principles of social cognitive theory. Bandura (1986) stated that self-efficacy is the most important power behind social cognitive theory. Studies have shown that self-efficacy is effective in reducing both stress and anxiety (Bandura et al., 2003), which emphasizes the overcoming of difficulties faced by the individual. Bandura (2006) stated that it positively affects many areas in addition to coping with difficulties. Self-efficacy is said to be necessary for post-trauma recovery (Benight & Bandura, 2004; Benight & Harper, 2002). Likewise, self-efficacy has an important function in individuals' lives for their psychological wellbeing, lack of distress, not experiencing burnout syndrome, and reduced instances of depression (Bisschop et al., 2004; Brouwers & Tomic, 2000; Gallagher et al., 2011).

Wong (2005) found that individuals with high levels of self-efficacy have higher motivation to take charge, and that individuals with low levels of self-efficacy avoid the responsibility of taking part due to communication-based concerns. In Wong's longitudinal study, it was concluded that individuals with low levels of communication anxiety and task avoidance showed lower self-efficacy. Singh and Bussey (2010) associated higher levels of self-efficacy with decreased communication anxiety, social anxiety, and also depression. Higher levels of self-efficacy are commonly accompanied by a lower cortisol response following experiencing stress and diminished autonomic arousal following mental challenges (Nierop et al., 2008; Sanz & Villamarin, 2001). In addition, results have shown that self-efficacy increases academic performance and decreases stress and anxiety levels (Hoffman, 2010; Niemiec & Lachowicz-Tabaczek, 2015). When the published studies are examined, communication anxiety is seen as detrimental to self-efficacy. Looking at this situation in reverse, self-efficacy can be expressed as a situation that can reduce an individual's communication anxiety level. Therefore, the first hypothesis of the current study is as follows;

Hypothesis 1: There is a negative relationship between communication anxiety and self-efficacy.

2.2. Fear of COVID-19, Communication Anxiety and Self-Efficacy: The Moderator Role of Fear of COVID-19

Spreading from Wuhan, China, across the globe, COVID-19 has adversely affected many situations in the lives of individuals, both directly and indirectly. With people wearing facemasks, being socially restricted, and having to spend much of their time inside their homes has undoubtedly caused negative effects. With this pandemic, it is expected that various psychological problems, especially anxiety, will be reported as having increased during this time. Various psychological problems are expected to occur during and after the pandemic (Karakose et al., 2021; Lam et al., 2009). However, it is only possible to determine the levels of these effects through academic research.

Since COVID-19 has significantly restricted the living conditions of many people (Sheridan et al., 2020), the emergence of differing psychological problems seems inevitable (Karakose & Malkoc, 2021a; Koçak et al., 2021). In particular, individuals who are concerned about the transmission of COVID-19 are likely to avoid communicating directly with each

other. This situation is likely to increase both communication anxiety and social anxiety (Phelps & Sperry, 2020). Some studies have shown that the pandemic has increased the communication anxiety of many and thereby pushes certain individuals towards social solitude (Guan et al., 2020; Okuhara et al., 2020; Van Bavel et al., 2020). When these results are evaluated, it is seen that fear of COVID-19 can significantly increase communication anxiety. As a result, a negative result is expected to occur in the self-efficacy of individuals. Although previous studies have been conducted in this area, the effect of COVID-19 fear on the relationship between communication anxiety and self-efficacy has yet to be specifically studied. Research has also shown that communication anxiety can negatively affect self-efficacy; however, it is very important to examine the effect of COVID-19 fear, specifically, on this relationship. With COVID-19 fear as the moderator-active, its analysis forms the basis for the second hypothesis of the current study:

Hypothesis 2: COVID-19 fear has a moderating effect on the relationship between communication anxiety and self-efficacy.

The study aims to resolve a gap in the literature by examining the moderating effect of COVID-19 fear as a variable on the relationship between university students' communication anxiety and their self-efficacy. While some previous studies have examined communication anxiety and self-efficacy (e.g., Bacchini & Magliulo, 2003; Bandura et al., 1999; Caprara et al., 2010; Chen et al., 2010; Klasen et al., 2015; Muris et al., 2016; Soysa & Wilcomb, 2015; Steca et al., 2014), not many have examined the relationship between communication anxiety and self-efficacy. Additionally, no research appears to exist in the published literature on how fear of COVID-19 affects this relationship. Therefore, the current study aims to examine the moderating effect of fear of COVID-19 on the relationship between communication anxiety and self-efficacy. The aim of this study is to determine how fear of COVID-19 affects the relationship between communication anxiety and self-efficacy. Thus, the effects of COVID-19 fear on both communication anxiety and self-efficacy are revealed.

There are two assumptions made by this study. First, communication anxiety negatively affects self-efficacy; and second, that fear of COVID-19 increases the negative relationship between communication anxiety and self-efficacy. The second assumption constitutes the main purpose of this study. Figure 1 shows the main hypothesis of this research.

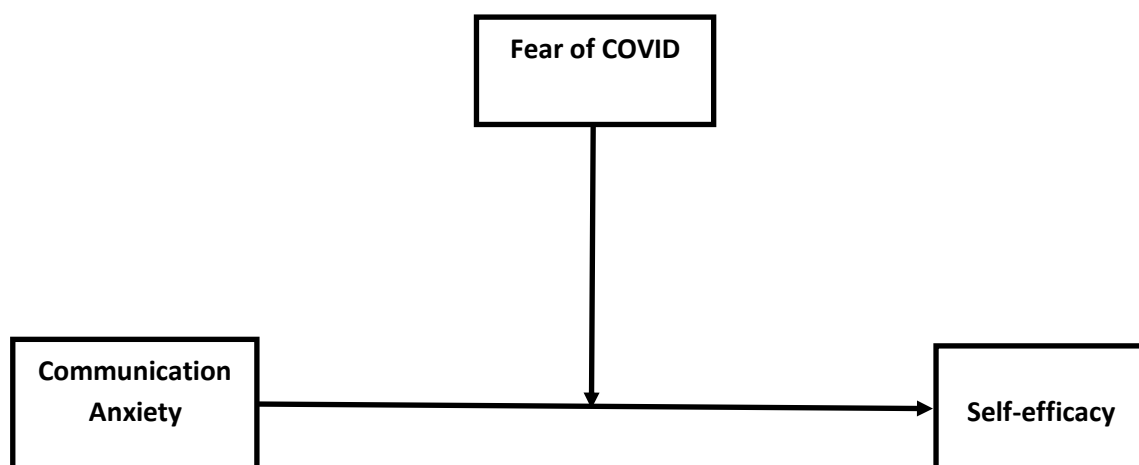


Figure 1. Model examining the moderator effect of fear of COVID-19 on the relationship between communication anxiety and self-efficacy

2. METHODOLOGY

2.1. Research Model

This research is a relational survey study designed so as to determine the moderator effect of another variable on the relationship between two different variables through a structural equation model. Creswell (2017) described relational survey research as a model that defines and determines the relationship between two or more variables, the degree of the existing relationship between variables, and the state and change of variables that affect each other.

Within the scope of the study, the variables of communication anxiety, self-efficacy, and fear of COVID-19 were examined. First, the relationship between communication anxiety and self-efficacy was tested, followed by the moderating effect of COVID-19 fear on this first relationship. In this context, Hayes's (2018) analysis was used in order to determine the moderator effect.

2.2. Participants

The population for the research was comprised of students enrolled at two state universities in Turkey and within any undergraduate program during the 2020-2021 academic year. The research sample was comprised of 393 students through convenience sampling according to their availability. Of the participant students, 305 (77.6%) were female, whilst 88 (22.4%) were male. Information regarding the demographic information of the participants is presented in Table 1.

Table 1. Frequency and percentage of participants' demographic variables

<i>Variables</i>	<i>Groups</i>	<i>f</i>	<i>%</i>
Gender	Female	305	77.6
	Male	88	22.4
Grade (university level)	First grade	175	44.5
	Second grade	101	25.7
	Third grade	64	16.3
	Fourth grade	53	13.5
Academic success	Low	94	23.9
	Middle	274	69.7
	High	25	6.4
Income	Low	37	9.4
	Middle	333	84.7
	High	23	5.9
	Total	393	100.0

2.3. Instruments

The following scales were used to collect data during the study: communication anxiety, self-efficacy, and fear of COVID-19 scales.

The *Communication Anxiety Scale* was developed by McCroskey (1982) and consists of 24 items. It was later adapted to the Turkish context by Çakmak (2018), along with validity and reliability analyses. The Turkish version of the scale also consists of 24 items. The reliability coefficient for the scale applied in the current study is .85 for the whole scale. To determine the reliability of the scale with the test-retest method, a test was applied to 64 people every 3 weeks. Through this application, the test-retest reliability coefficient of the scale was

calculated as being .81 for the whole scale. According to the results of confirmatory factor analysis, the scale's model fit values were established as being acceptable ($S-B\chi^2 = 667.68$; $\chi^2 = 240$; CFI = .92; NNFI = .91; RMSEA = .077).

The *Self-Efficacy Scale* was first developed by Schwarzer and Jerusalem (1995) and later adapted to the Turkish context by Aypay (2010). The first dimension of the scale is "effort and resistance," whilst the second is "ability and confidence." Significant and positive correlations were found with the Coping with Stress Scale ($r = .40$, $p < .001$) and also with Rosenberg's Self-Esteem Scale ($r = .38$, $p < .001$). Cronbach's alpha internal consistencies for the two factors were found to be between .79 and .63.

The *Fear of COVID-19 Scale* was developed by Ahorsu et al. (2020) and soon after adapted to the Turkish context by Bakioğlu et al. (2020). The scale consists of a single dimension with seven items. The scale employs a 5-point, Likert-type rating system, ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). Item factor loads of the original scale ranged from .66 to .74, and item-total correlations vary between .47 and .56. Cronbach's alpha internal consistency coefficient of the scale was shown to be .82. A positive and significant correlation was found between the total score of the scale and depression ($r = .43$), anxiety ($r = .51$), perceived infectability ($r = .48$), and germ aversion ($r = .46$).

2.4. Procedure

First, permission was sought from relevant university committees on conducting this type of research study. Then, research data were collected from university students attending İstanbul Marmara and Firat universities during the 2020-2021 academic year according to the convenience sampling method. The students were each informed about the nature of the study, and that they could take part voluntarily in the study. The students confirmed the voluntary nature of their acceptance to join the study, and a written informed consent form was collected from each student that also included the study purpose and assurance of the confidentiality of the collected data.

In the research, data were collected from students of different faculties (Education, Theory and Engineering), with the data collected online. This data collection procedure lasted for approximately 10 minutes for each participant student. This study was of a cross-sectional design, and a correlation and simple mediator model were used.

2.5. Data Analysis

After the study's data had been collected, potential errors were then checked for, and where found, missing value and extreme value analyses were performed. Any missing data of the participants were eliminated in each scale, with missing values determined, and the average scores of these data determined according to the serial average method. Z scores were calculated for each continuous variable in order to determine outliers. After the data were deemed to be ready, the analyses were performed using *t*-tests, with correlation analysis used to determine the relationship between variables via IBM's SPSS 25 package program. Then, with the help of the Hayes' process, analyses were performed for the model to test the moderator effect.

3. RESULTS

Prior to the main analyses that constitute the basic hypothesis of the research, certain prerequisite analyses were conducted to assess the reliability of the study. In this context, the average, standard deviation, kurtosis skewness, Cronbach's alpha values, and correlation analysis results obtained from the study's participants according to the aforementioned three scales are presented in Table 2.

As can be seen from Table 2, when the reliability of the scales were examined according to their Cronbach's alpha values, the results show that the scales and their respective sub-dimensions present sufficient reliability values (Büyüköztürk, 2015).

Table 2. Intervariable correlation, arithmetic averages, and internal consistency coefficients of variables

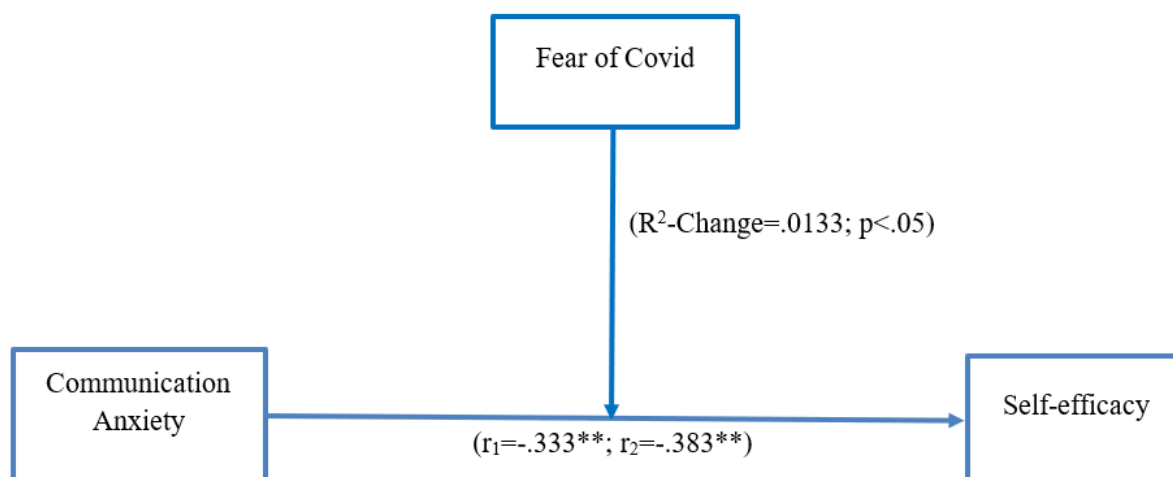
Variable	N	\bar{X}	Cronbach's Alpha	Skewness	Kurtosis	1	2	3
1. Communication anxiety	393	64.22	.853	-.087	.816	1	-.276**	.323**
2. Self-efficacy	393	43.27	.822	-.361	-.127		1	-.414**
3. Fear of COVID	393	20.92	.856	.812	-.135			1

** $p < .001$

To determine the correlation values and direction of the relationships between the variables within the scope of the study, Pearson product moment correlation analysis was performed, and the results of this analysis are also presented in Table 2. In addition, the analysis technique developed by Hayes (2013) was used to test the moderator effect, which is the main purpose of the study. The correlation values shown in Table 2 are interpreted in line with the direction given by Cohen and Cohen (1983), who stated that variables or variables considered for moderator effect are expected to either strengthen or weaken the relationship between dependent and independent variables.

When Table 2 is examined, a negative relationship can be seen to exist between communication anxiety and self-efficacy ($r = -.276$; $p < .001$); a positive relationship between communication anxiety and fear of COVID-19 ($r = .323$; $p < .001$); and a negative correlation between self-efficacy and fear of COVID ($r = -.414$; $p < .001$).

In order to perform moderator effect analyses of fear of COVID-19, which is the main purpose of the current study, the correlation values should be considered appropriate. When looking at the relationship between communication anxiety, self-efficacy, and fear of COVID-19, it can be seen from Table 2 that all variables are in a meaningful relationship. Therefore, subsequent analyses were able to examine the moderator effect of the COVID-19 fear variable, which is considered the moderator variable and is the next process. In the context of these data, the model was tested, and the findings regarding the model are illustrated in Figure 2.



****** $p < .001$

Figure 2. Investigation of the moderator effect of the COVID-19 fear variable on the relationship between communication anxiety and self-efficacy

The results of the analyses performed to examine the moderating effect of the COVID-19 fear variable on the relationship between communication anxiety and self-efficacy are illustrated in Figure 2. According to these results, the relationship between communication anxiety and self-efficacy can be seen as negative and significant ($r = -.333$; $p < .001$). This situation shows the first effect result. When we examine the moderating effect of the COVID-19 fear variable, it is seen that this variable negatively increases the relationship between communication anxiety and self-efficacy ($r_1 = -.333^{**}$; $r_2 = -.382^{**}$). According to this result, the negative relationship between communication anxiety and self-efficacy further increased. In other words, as COVID-19 anxiety increases communication anxiety, the individuals' self-efficacy is reduced. The results regarding the model are presented in Table 3.

Table 3. Moderator Effect Analysis Results

		Coeff.	SE	t	p
Constant	i	94.2	11.5	8.18	.000
	y	6	2		0
Communication anxiety (X)	b	-.57	.17	-3.37	.000
	1				8
Fear of COVID (W)	b	-1.84	.48	-3.78	.000
	2				2
Communication Anxiety X Fear of COVID (XW)	b	.02	.007	2.55	.010
	3			72	9
Model 1: $R^2 = 20.74$, $MSE = 74.88$, $F(33, 93)$, $p < .000$					

When Table 3 is examined, it can be seen that the moderator effect of COVID-19 fear is significant in the relationship between communication anxiety and self-efficacy ($p = .0109$). According to this result, fear of COVID-19 increases the communication anxiety of individuals, and this situation decreases their self-efficacy as a result (see Figure 3).

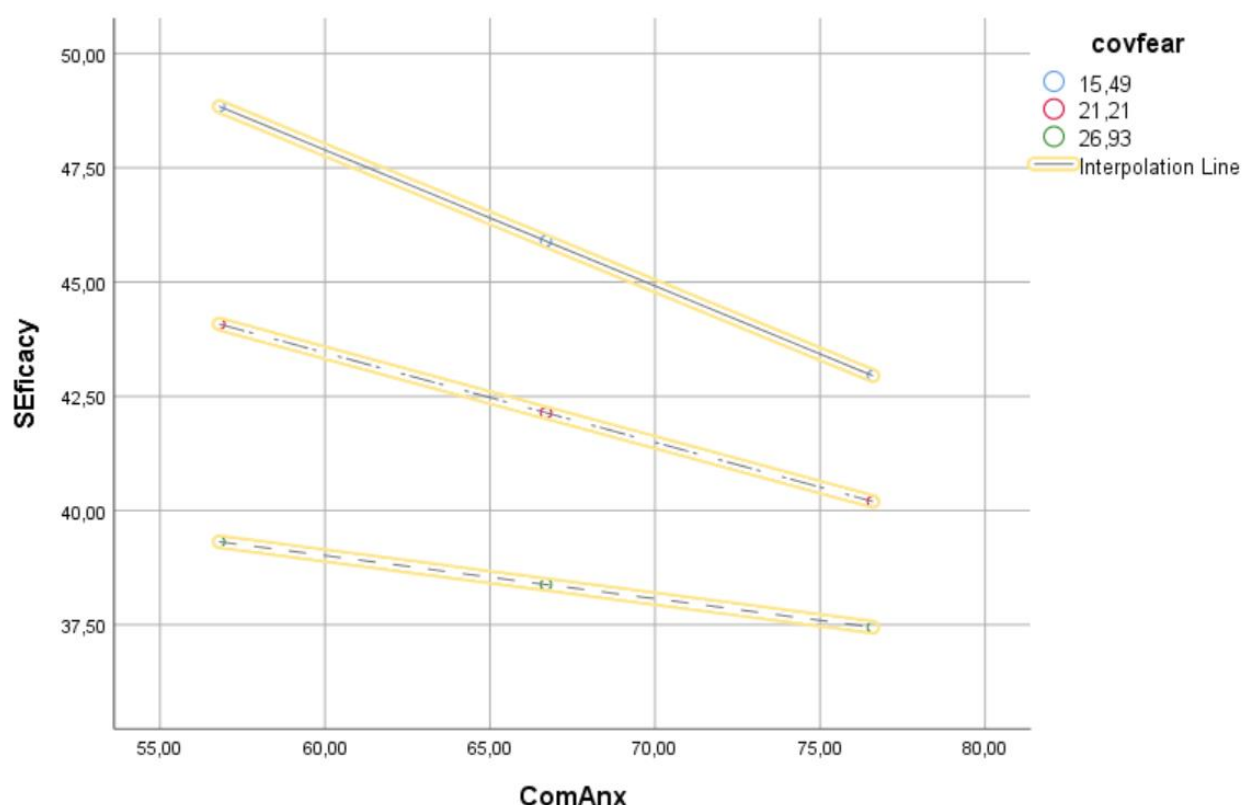


Figure 3. Moderator effect of fear of COVID-19 on the relationship between communication anxiety and self-efficacy

Figure 3 shows that the relationship between communication anxiety and self-efficacy presents a negative correlation. Fear of COVID-19 increases communication anxiety, especially in individuals with a high level of self-efficacy, and this situation causes a serious decrease in their self-efficacy. To put it more clearly, COVID-19 fear has a significant effect on the relationship between communication anxiety and self-efficacy. As a result of all these analyses, the following results highlights may be stated:

- There is a negative relationship between communication anxiety and self-efficacy. Therefore, as communication anxiety increases, self-efficacy decreases.
- COVID-19 fear worsens the relationship between communication anxiety and self-efficacy. In other words, the fear of COVID-19 increases anxiety regarding communication, whilst self-efficacy decreases.

3. DISCUSSION

Examining the effects of the fear of COVID-19, which can considerably affect people's daily lives, may provide important clues to the appropriate solution of problems. In this study, the effect of COVID-19 fear on the lives of individuals was examined in the context of several variables. Self-efficacy is considered an important factor of Bandura's (1997) social cognitive theory, and its relationship with stress and anxiety is generally accepted. In other words, a relationship has been shown to exist between communication anxiety and self-efficacy. The purpose of the current study was to examine the moderating effect of COVID-19 fear on this relationship.

Several results obtained from the current study for this purpose are discussed here. First, the relationships between anxiety and self-efficacy have previously been discussed in studies

by Benight and Bandura (2004), Benight and Harper (2002), and also by Vaezi and Fallah (2011). In the current study, a negative relationship was found to exist between communication anxiety and self-efficacy. It was also concluded that this relationship worsened due to the fear of COVID-19. According to this result, fear of COVID-19 increases communication anxiety experienced by individuals, and as a result, their self-efficacy levels decrease.

This result supports other studies which investigated the negative aspects of the pandemic (Lam et al., 2009). In most studies conducted during the COVID-19 period, the negative effects of the pandemic have generally been mentioned (e.g., Guan et al., 2020; Karakose & Demirkol, 2021; Koçak et al., 2021; Okuhara et al., 2020; Phelps & Sperry, 2020; Sheridan et al., 2020; Van Bavel et al., 2020). In addition, when other studies on COVID-19 are considered, it can be understood that the pandemic has negatively affected not only communication, but also many other areas too (Gritsenko et al., 2020; Kameg, 2020; Santini et al., 2020; Torales et al., 2020). Of course, these negative reflections may well be effective not only today, but also in the future as the end of the pandemic will not necessarily mean the end of its effect.

Karakose and Malkoc (2021b) stated that the emergence of various psychological problems both during and following the end of the pandemic is an expected situation. With increased research having been conducted in this area, more data has become available on the negative effects of COVID-19. In particular, varying negative effects on young people and families have also emerged. Communication anxiety and psychological problems have arisen due to the closure of face-to-face schooling, the breaking up of families, and unexpected losses (Galea et al., 2020; Karakose, 2020; Karakose, 2021; Lee, 2020; Pfefferbaum & North, 2020). All these results in the literature are from studies that have revealed the negative effect of the pandemic. In the current study, it has been seen that fear of COVID-19 also has a negative effect. The current study has shown that fear of COVID-19 worsens the relationship between communication anxiety and self-efficacy, which to some point support the main purpose of the study.

3.1 Limitations and future research directions

Certain limitations should be taken into account when interpreting the results presented here. First, since this study is quantitative in nature, it does not allow for causal inferences to be drawn regarding the results revealed concerning the relationships between variables. Therefore, it would be useful to additionally conduct qualitative studies in which the research results are questioned in terms of the reasons. Second, the data obtained from the current study are limited only to students studying at public universities; therefore, it may prove beneficial to conduct similar studies with different universities and with varying faculties. Third, the current study examined the moderating effect of COVID-19 fear on the relationship between communication anxiety and self-efficacy; however, future studies could be designed according to different variables. Whilst this quantitative study presents the negative effects of COVID-19 in general, conducting qualitative studies to examine the reasons behind such findings could take these results to a different dimension. Finally, the current study has shown that fear of COVID-19 increases communication anxiety, which in turn reduces self-efficacy; a qualitative study questioning the reasons for this finding could prove very useful to the overall literature on this area of research.

4. CONCLUSION

This research examined the moderating effect of fear of COVID-19 on communication anxiety and self-efficacy. The results have shown that the fear of COVID-19 negatively affects the relationship between communication anxiety and self-efficacy. However, it was found that communication anxiety also reduced self-efficacy. Additionally, it was concluded that fear of COVID-19 negatively affects self-efficacy. Therefore, the current study, which emphasizes the importance of various studies that support the self-efficacy of individuals and aim to reduce communication anxiety, may be considered as a guide to solving these problem issues.

DECLARATIONS

Author Contributions The article was written by a single author, who read and approved the final published version of the article.

Conflicts of Interest The author declared no conflict of interest.

Ethical Approval All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki Declaration and its later amendments or comparable ethical standards.

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Data Availability Statement The data that support the findings of this study are available from the corresponding author upon request. The data are not publicly available due to privacy or ethical restrictions.

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