

The Relationship Between Social Support and Uncertainty of COVID-19: The Mediating Roles of Resilience and Academic Self-Efficacy*

Zane Asher Green¹, İlhan Çiçek², & Murat Yıldırım³

¹Preston University, Islamabad, Pakistan

²Batman University, Batman, Turkey

³Ağrı İbrahim Çeçen University, Merkez, Ağrı, Turkey

This study examined the mediating effect of resilience and academic self-efficacy (psychological resources) in the relationship between social support and uncertainty of COVID-19. We recruited 607 Turkish undergraduate students (68% females) with a mean age of 21.71 years ($SD = 3.18$). Results showed that perceived social support positively predicted

Corresponding author: zanearts@gmail.com

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Data availability statement. The data that support the findings of this study are available on reasonable request from the corresponding author. The data are not publicly available due to information that could compromise the privacy of research participants.

Ethical approval. The research protocol was submitted for consideration, comment, guidance and approval to the Preston University's Research Ethics Committee. After obtaining the approval, all procedures performed in the study were in accordance with the ethical standards of the institutional research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

Informed consent. Informed consent was obtained from all individual participants included in the study.

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resilience and academic self-efficacy, while social support, resilience, and academic self-efficacy negatively predicted uncertainty of COVID-19. Findings highlight the significance of investing in social support resources for orchestrating gains in psychological resources, which may then support one another to act collectively to assuage the uncertainty of COVID-19. Theoretical contribution and practical implications of the results as well as study limitations and future research are discussed in the paper.

Keywords: perceived social support, resilience, academic self-efficacy, uncertainty of COVID-19

Highlights:

- The mediation model demonstrates a viable mechanism for curbing the uncertainty of COVID-19.
- Resilience and academic self-efficacy are pathways linking perceived social support to uncertainty of COVID-19.
- Social support resources may build psychological resources (resilience and academic self-efficacy).
- Psychological resources may bolster each other to act in tandem to alleviate the uncertainty of COVID-19.
- The model may be beneficial post-pandemic by adapting it to include other uncertainties.

Uncertainty of COVID-19 is a typical cognitive response to the pandemic emanating from its complex, unpredictable, and rapidly changing nature (Jian et al., 2020). The ever-emerging new variants of the deadly virus, escalating infection and death rates, and the massive hindrance in social functioning as well as in people's routines are major sources of uncertainty

(Ashraf et al., 2021; Jian et al., 2020; Wu et al., 2021). University students around the globe have been facing uncertainty because of the pandemic (Elsharkawy & Abdelaziz, 2021; Kaleem et al., 2020; Lim & Javadpour, 2021), as it has indisputably disrupted their academic life (Chaturvedi et al., 2021). Research indicates that university students have been experiencing considerable academic stress and anxiety (Green, 2022a; Green et al., 2022a) because of future career anxiety (Mahmud et al., 2021), reduced teacher-student interaction (Abbasi et al., 2020), increased academic demands (Bao, 2020; Elsalem et al., 2020), new criteria for covering courses and assessing students' performance, ambiguous course expectations (Friedman, 2020), and their declining academic performance (Green et al., 2022b; Hashemi, 2021). Further, many students have had to discontinue their classes, change their majors, and delay their graduation (Aucejo et al., 2020). Additionally, studies have demonstrated that uncertainty of COVID-19 has led to anxiety, frustration, and procrastination among students (Jenei et al., 2020; Lim & Javadpour, 2021; Rahimi & Vallerand, 2021). Concurrently, social support has been shown to relate to perceived uncertainties during COVID-19 (Usman et al., 2021). An important form of social support, perceived social support is the perception that one is cared for by others and has a dependable network (comprising family, friends, and significant others; Zimet et al., 1988), which is always there to help in everyday situations or in specific challenges (Taylor, 2011). As such, perceived social support may reduce uncertainty (Heaney & Israel, 2008)—particularly that associated with the pandemic. Research has also demonstrated that social support acts as a buffer in reducing the negative influence of uncertainty of COVID-19 on emotional exhaustion among hospitality employees (Ersoy et al., 2023). In addition, social support was found to buffer the effect of intolerance of uncertainty—stemming from the pandemic—on mental health in a sample of back-to-school students (Zhou et al., 2021). Essentially, social connections are able to offer support in times of uncertainty and challenges when people experience distress and anxiety

(Zaki & Williams, 2013). Considering the important role of social support in influencing uncertainty experienced during COVID-19, we believe it is pertinent to delineate a mechanism demonstrating how perceived social support may influence uncertainty of COVID-19. To this end, this study analyzes the mediating effect of two relevant psychological resources—resilience and academic self-efficacy—between perceived social support and uncertainty of COVID-19 among Turkish university students.

A major reason for carrying out this research with Turkish university students is that the intolerance of uncertainty experienced by them amid the pandemic ranges between moderate (e.g., Duman, 2020) and high (e.g., Oral & Karakurt, 2022). Of note is that Turkey scores high (85) on Hofstede's cultural dimension of uncertainty avoidance, which is why the Turks possibly feel threatened by ambiguous or unknown situations (Hofstede Insights, 2023)—such as those associated with the pandemic. Furthermore, the uncertainties faced by Turkish university students—due to the frequent changes in the central examination system and student placement criteria, the high risk of unemployment, and their inability to choose a suitable career path (Uzun & Karataş, 2020)—likely exacerbate the anxiety and stress caused by the uncertainty of the pandemic. Keeping in view the aforementioned, we believe our mediation model may present a useful solution for curbing the uncertainty of the pandemic experienced by Turkish university students.

Another reason for conducting this study is because of the importance of perceived social support for university students in Turkey, which scores low (35) on Hofstede's cultural dimension of individualism. As such, Turkey is a collectivistic society. Social connectedness is a salient feature of collective cultures. In Turkey, “we” is essential, as families and clans look after each other in exchange of loyalty (Hofstede Insights, 2022). Like people in other collectivistic societies, Turks focus on group welfare, derive satisfaction from group achievement, are considerate of the feelings of their family members, and strive for bringing

prosperity at home (Green, 2022b; Islam, 2004; Yama et al., 2007). As such, we consider it worthwhile to examine how perceived social support may influence uncertainty of COVID-19 in a sample of university students in Turkey where uncertainty avoidance is high.

Significance of the Study

This contribution is important because of four main reasons. Firstly, the relation between perceived social support and uncertainty of COVID-19 has not been sufficiently explored in the context of university students. However, prior scholarly work on different forms of social support and uncertainty during the pandemic has predominantly focused on working adults (e.g., Beck & Daniels, 2023; Ersoy et al., 2023; Usman et al., 2021). Secondly, this is perhaps the only study that provides insights into the pathways (resilience and academic self-efficacy) that may link perceived social support to uncertainty of COVID-19. Previous research during the pandemic has indicated that either resilience or academic self-efficacy successfully mediated the relationship between different independent and dependent variables. For instance, resilience mediated between perceived social support and life satisfaction among Turkish college students (Yıldırım & Çelik-Tanrıverdi, 2021). Furthermore, grit and academic self-efficacy mediated serially between basic psychological need satisfaction and academic stress in a sample of Turkish undergraduates (Çınar-Tanrıverdi & Karabacak-Çelik, 2023). In addition, resilience and generalized self-efficacy mediated the relationship between viral anxiety and psychological well-being among Lebanese people (Hong et al., 2022). As such, our mediation model has not been studied before. Thirdly, to the best of our knowledge, there is practically no research that demonstrates the contribution of psychological resources towards reducing uncertainty of COVID-19 among university students. More so, this research makes an important contribution based on demonstrating how social support resources may influence other psychological resources to decrease the uncertainty of COVID-19 in an academic setting in the context of Turkey's collective culture. Finally, this study may encourage university

counsellors, education administrators, and faculty members to jointly devise and implement strategies to alleviate the uncertainty of the pandemic among university students.

Relevance of Resilience and Academic Self-Efficacy as Mediators

Resilience

Resilience represents one's competency to overcome adversity and grow with experience (Rutter, 1985). According to a meta-analysis, resilience is a psychological resource, which may bolster the accelerated recovery and mitigation of negative effects of a crisis or misfortune (Davydov et al., 2010). Resilience enables university students to adapt to university life (Chen, 2016; DeRossier et al., 2013; Topkaya & Kavas, 2015) with regard to managing the academic workload, maintaining a study-life balance, and addressing financial issues (Stallman, 2010). It also decreases psychological distress and instills coping capabilities to address various academic stressors (Abbot et al., 2009). Also, studies conducted amid the pandemic have indicated the protective role of resilience in challenging or stressful situations among university students (e.g., Quintiliani et al., 2022; Versteeg & Kappe, 2021; Yıldırım & Çelik-Tanrıverdi, 2021) as well as advancing mental well-being among them (Rasheed et al., 2022). Resilience has also been used as a mediator in different studies during the pandemic (e.g., Rasheed et al., 2022; Versteeg & Kappe, 2021; Yıldırım & Çelik-Tanrıverdi, 2021; Yıldırım & Çiçek, 2022). Hence, resilience may serve as a meaningful psychological resource to mediate between perceived social support and uncertainty of COVID-19.

Academic Self-Efficacy

Academic self-efficacy is considered as a pertinent psychological resource because the pandemic has had a detrimental impact on university students' academic life (Green, 2022a; Chaturvedi et al., 2021; Hashemi, 2021). Academic self-efficacy represents a person's judgment about his or her competence to succeed at an academic task based on a predetermined standard or to achieve specific academic goals (Bandura, 1997; Schunk & Pajares, 2002).

Research indicates that academic self-efficacy is related to academic achievement (Byrne et al., 2014; Chemers et al., 2001), influences academic engagement (Uçar & Sungur, 2017), and has a considerable effect on learning related emotions as well as metacognitive learning strategies (Hayat et al., 2020). Furthermore, as compared to students with lower academic self-efficacy, those with higher academic self-efficacy have a greater intrinsic predisposition towards academic activities (Phan, 2010), commit to higher goals and academic expectations (Wright et al., 2013) consider difficult tasks as challenges to be tackled rather than threats to be averted (Chemers et al., 2001), and are able to confidently bounce back from failures (Pajares & Schunk, 2002). Thus, academic self-efficacy may act as a relevant psychological resource—amid the disorder and disturbance in students' academic life—for reducing the uncertainty of COVID-19.

The Mediation Model

This research contends that perceived social support may mitigate uncertainty of COVID-19, as it may influence university students' psychological resources (resilience, and academic self-efficacy), which in turn may reduce uncertainty of COVID-19. The Conservation of Resources Theory (Hobfoll, 2010) explicates the dynamics of resources, which are personal characteristics, objects, conditions, or energies that are valued by individuals or which may help them in acquiring what is valued by them. The theory asserts that individuals strive to obtain, maintain, and protect resources. Hobfoll (2010) also proposes the concept of *resource caravans*, which assumes that resources do not act independently, but form an aggregate such that possessing one favors or bolsters another or that losing one impairs or depletes another.

Perceived Social Support and Psychological Resources

The *principle of resource investment* of the Conservation of Resources Theory suggests that people must invest in resources to protect against resource loss, recover from losses, and most importantly gain more resources. It is pertinent to note that people who have more

resources are less vulnerable to resource loss and are more capable of orchestrating resource gain (Hobfoll, 2010). Augmenting and investing in social support resources (perceived or real; Gottlieb, 1983; Lopez-Zafra et al., 2019) in the form of closest structural support (i.e., family and friends; Gottlieb, 1983) may therefore help individuals in orchestrating resource gains based on the acquisition of such resources as resilience and academic self-efficacy. The Social Support Resource Theory (Hobfoll et al., 1990)—one aspect of the greater Conservation of Resources Theory—suggests that people are particularly motivated to increase and protect their social support resources, which play a crucial role in widening their resources outside the limited resources that are contained in the self. As such, through social support resources, people may build other resources (i.e., resilience and academic self-efficacy).

Perceived Social Support and Resilience. Perceived social support enables individuals to demonstrate resilience in stressful times (Ozbay et al., 2007; Yıldırım & Çelik-Tanrıverdi, 2021) by equipping them with the pertinent resources to effectively manage them (Chi et al., 2011) and bounce back from them (Mattanah et al., 2010). This is possibly because when people are under pressure or facing adversity, social connections provide them psychological and material resources to relieve stress and mitigate stress-induced negative emotions to facilitate their adaptation to adverse conditions (Mai et al., 2021). Additionally, empirical evidence has indicated that perceived social support is related to resilience (Çiçek, 2021; Yang et al., 2018; Ye et al., 2020; Yıldırım & Green, 2023).

Perceived Social Support and Academic Self-Efficacy. Social support is a pertinent resource that enables people to deal with stress, augments self-confidence, and improves self-efficacy (Wang et al., 2015). According to the Social Learning Theory (Bandura, 1977), others' guidance, expectations, and support may influence individuals' self-efficacy. When individuals perceive higher levels of external support and expectations, then their positive learning motivation may be bolstered (Gettens et al., 2018) for completing university workload,

securing good grades, and preparing adequately for exams (academic self-efficacy; Jerusalem & Schwarzer, 1981). Furthermore, there is empirical evidence indicating that perceived social support is related to academic self-efficacy (Chen et al., 2020; Sari et al., 2020). In addition, the Social Cognitive Theory (Bandura, 1999)—an extension of his Social Learning Theory—can also explicate how perceived social support may be associated with the mediators. According to the theory, individual cognition is influenced by the social environment. Individual cognition represents a person's judgment of whether he or she has the capability of completing a task (self-efficacy). As such, perceived social support—as a cognitive variable pertaining to the social environment—likely shapes student cognition via family, friends, or university. Students are able to muster greater self-confidence when they believe that friends, family, and other sources of support can provide them the necessary resources to address their study-related problems.

In light of the aforementioned, we predict that perceived social support will be related to resilience as well as academic self-efficacy.

Psychological Resources and Uncertainty of COVID-19

The second part of our mediation model suggests that higher levels of psychological resources may mitigate the uncertainty of COVID-19 among Turkish university students. In line with the concept of resource caravans (Hobfoll, 2010), resilience and academic self-efficacy may support each other to act collectively to assuage the uncertainty of COVID-19. The ensuing paragraphs explicate how resilience and academic self-efficacy may influence the uncertainty of the pandemic.

Resilience and Uncertainty of COVID-19. Resilience advances students' well-being by positively influencing their capacity to effectively navigate amid life's trials and tribulations (Hartley, 2011). Moreover, resilience has been shown to relieve university students from the anxiety they experience regarding their future on account of the pandemic (Paredes et al.,

2020). This is possibly because resilient individuals are optimistic, experience positive emotions, and make effective use of coping strategies as well as humor to overcome adversity (Bonanno, 2008; Fredrickson et al., 2003). It is noteworthy that the positive emotions (optimism included; Green et al., 2023) experienced by resilient individuals may develop additional coping resources to further increase their resilience to effectively counter the persistent negative effects of the pandemic (Tugade & Frederickson, 2004), which may include the uncertainty experienced by individuals because of the pandemic. In addition, empirical evidence suggests that resilience is related to intolerance of uncertainty during the COVID-19 pandemic (Karataş & Tagay, 2021). Based on the above, we predict that resilience will be related to uncertainty of COVID-19.

Academic Self-Efficacy and Uncertainty of COVID-19. Academic self-efficacy—as conceptualized in this study—reflects students’ beliefs in their competencies to complete university-related work, achieve greater success based on adequate preparation for exams, be well aware of what it takes to secure good grades, and succeed in the hardest of written exams (Jerusalem & Schwarzer, 1981). This conceptualization indicates that academic self-efficacy instills such internal resources as self-assurance, personal insight, self-determination, effort investment, and goal-orientation in students (Green, 2020, 2022a). These competence-based and action-oriented internal resources represent successful coping as well as imply an internal-stable attribution of success (Bandura, 1997) in relation to academic activities and may therefore contribute towards minimizing the effect of the uncertainty of COVID-19. Fundamentally, the internal resources may enable students to face uncertainty with confidence to an extent that its effect is minimized. There is also evidence that academic self-efficacy is related to intolerance of uncertainty (Uzun & Karataş, 2020). Hence, we predict that academic self-efficacy will be related to uncertainty of COVID-19.

Hypothesis

Based on the theoretical framework and the empirical evidence reviewed above, we hypothesize that perceived social support will be indirectly related to uncertainty of COVID-19 via resilience and academic self-efficacy.

Method

Participants and Procedure

The sample consisted of 607 undergraduates from six state universities located in eastern and south eastern Turkey. The 413 (68%) women and 194 (32%) men had an average age of 21.71 years ($SD = 3.18$). Majority (93.6%) of the participants were single. After the Contemporary Research Initiative at the Preston University obtained the necessary ethical approval from its Research Ethics Committee for conducting the study, data were collected from the six universities via an online form. All participants participated voluntarily and anonymously. The first page of the online form explained the participants about the purpose of the study and assured them of the confidentiality of their responses. Also, participants were required to complete all the items in the survey for it to be submitted.

Measures

Brief Perceived Social Support Questionnaire (BPSSQ)

Developed by Kliem et al. (2015), the BPSSQ consists of 6 items (e.g., “There is someone very close to me whose help I can always count on”). Participants rated each item of the BPSSQ on a 5-point Likert type scale (1 = *strongly disagree*; 5 = *strongly agree*). Higher scores on the scale indicate better perceived social support. Yıldırım & Çelik-Tanrıverdi. (2021) adapted the BPSSQ to Turkish. The internal consistency reliability determined by them calculated to .77.

Uncertainty of COVID-19 (UCV-19S)

This scale was adapted by Jian et al. (2020) from the uncertainty scales developed by Andrews (2008). The 3 items scale (e.g., “I perceive the context of COVID-19 as very

complex”). Participants rated each item of the UCV-19S on a 5-point Likert type scale (1 = *strongly disagree*; 5 = *strongly agree*). Jian and colleagues reported a Cronbach’s alpha value of 0.84 for the UCV-19S. The forward-backward translation method was used to develop the Turkish version of the UCV-19S based on established protocols pertaining to cross-cultural adaptation (cf. Yu et al., 2004). The Cronbach’s alpha value pertaining to the UCV-19S amounted to .72.

Resilience Scale (RS)

The 3-item resilience subscale of the positive psychological functioning scale by Merino and Privado (2015) was used in this study. The 3 items (e.g., “I do not surrender easily to the difficulties of life”) were taken from the resilience scale by Rutter (1985). A 5-point Likert type scale (1 = *strongly disagree*; 5 = *strongly agree*) was used for participants to rate each item. Merino and Privado (2015) reported an internal consistency reliability of 0.71 for the RS. The Turkish adaptation of the RS followed the forward-backward translation method. The internal consistency reliability for the RS calculated to .78.

Academic Self-Efficacy Questionnaire (ASEQ)

The scale was developed by Jerusalem and Schwarzer (1981) comprising 7 items (e.g., “In my university education, I am always able to accomplish the work to be done”). In this study, a 5-point Likert type scale (1 = *strongly disagree*; 5 = *strongly agree*) was used for participants to rate each item. Higher scores on the scale suggest that students have a high academic self-efficacy. The Turkish adaptation of the scale was undertaken by Yılmaz et al. (2007) who found its internal consistency reliability to be .79.

Data Analyses

Preliminary analyses comprised computing descriptive statistics and correlation coefficients for the analysed variables. The assumption of normal distribution was explored by using the kurtosis and skewness statistics. In this regard, the acceptable level of univariate

normal distribution range is between -2 and +2 (Field, 2009). Pearson correlation coefficients determined the association between the study variables. Next, a parallel mediation analysis was undertaken utilizing the Model 4 of the PROCESS macro version 3.5 for SPSS (Hayes, 2017). A 95% bias-corrected confidence interval based on 10,000 bootstrap samples was used to evaluate the indirect effect through each mediator (Hayes, 2017). All analyses were carried out in SPSS 25.

Results

The results of preliminary analysis demonstrated that skewness and kurtosis values varied from -1.11 to .78 suggesting that all variables had a relatively normal distribution (see Table 1). Correlation analysis showed that perceived social support, resilience, and academic self-efficacy were positively related to one another and were negatively related to uncertainty of COVID-19 (see Table 1). The correlations provided first evidence into the relationship among the study variables. Hence, the study variables were appropriate for model testing.

Parallel Mediation Analysis

A parallel mediation analysis was used to investigate the indirect impact of perceived social support on uncertainty of COVID-19 through resilience and academic self-efficacy (see Figure 1). According to Table 2, results showed that perceived social support was a significant predictor of resilience ($\beta = .25$; $p < .001$) and academic self-efficacy ($\beta = .28$; $p < .001$). Perceived social support explained 15% of the variance in resilience and 12% of the variance in academic self-efficacy. Furthermore, perceived social support ($\beta = -.12$, $p < .001$), resilience ($\beta = -.14$, $p < 0.01$), and academic self-efficacy ($\beta = -.08$, $p < .01$) significantly predicted uncertainty of COVID-19 by explaining 13% of the variance in uncertainty of COVID-19. A 95% bias-corrected confidence interval based on 10,000 bootstrap samples showed that the indirect effect through each mediator, while holding the other two constant, had no zero value in its confidence interval range, i.e., resilience ($\beta = -.04$; $SE = .01$, 95 % CI [-.06, -.084]) and

academic self-efficacy ($\beta = -.02$; $SE = .01$, 95 % CI [-.04, -.01]) mediated the perceived social support \rightarrow uncertainty of COVID-19 link (see Table 3). Results support the hypothesis, as perceived social support was indirectly related to uncertainty of COVID-19 via resilience and academic self-efficacy.

Discussion

Based on the proposed mediation model, results indicate that resilience and academic self-efficacy (psychological resources) mediated the relation between perceived social support and uncertainty of COVID-19. These results offer valuable insights into the role of psychological resources in explaining the indirect effect of perceived social support on uncertainty of COVID-19. Results suggest that the availability of help, support, and understanding from others (family, friends, and neighbors) in times of need and despondency as perceived by the Turkish university students may empower them to: (1) bounce back from adversity and become stronger after overcoming life's challenges as well as (2) complete university work, secure good grades, and adequately prepare for exams. As a consequence of the two psychological resources (resilience and academic self-efficacy) fostered through perceived social support, university students may be able to mitigate the uncertainty of COVID-19. Thus, the two mediators provide explanatory power to the relationship between perceived social support and uncertainty of COVID-19. The theoretical contribution and practical implications of the results are discussed in the ensuing sections.

Theoretical Contribution

Results of the study make important theoretical contribution. Firstly, this research adds to the sparse evidence regarding the relationship between perceived social support and uncertainty of COVID-19. Prior research has not sufficiently explored the relationship between the two variables. Secondly, this study provides first evidence as to how perceived social support may influence uncertainty of COVID-19 in a sample of university students in Turkey

where uncertainty avoidance is high. Results suggest that resilience and academic self-efficacy are important pathways that may link perceived social support to uncertainty of COVID-19. The mediation model therefore demonstrates a viable mechanism for alleviating the uncertainty of the pandemic among university students in a collective culture. It should be noted that this model may be beneficial post-pandemic for mitigating other kinds of uncertainty as well. In this regard, the type of uncertainty prevailing may be used as the dependent variable in the model. Other collective cultures may also benefit from this model.

Thirdly, regarding the first part of the mediation model, the principle of resource investment of the Conservation of Resources Theory (Hobfoll, 2010) offers an understanding of how investing in social support resources (e.g., family, friends, teachers, neighbors, relatives, and significant others) may help university students in planning and arranging resource gains, such as resilience and academic self-efficacy. In addition, the Social Support Resource Theory (Hobfoll et al., 1990) suggests the importance of social support resources in expanding people's personal resources. In consonance with the theory, Turkish university students may be able to build additional psychological resources based on their social support resources. In the Turkish collective culture, relationships hold great significance and reflect such values as belongingness, interdependence, and harmony (Hofstede Insights, 2022; Uchida & Ogihara, 2012). Social support is most likely a quintessential element of the Turkish culture like in all other collective cultures. As such, Turkish students may be able to muster the social support that they perceive to be available to them in times of need.

Fourthly, with regard to the second part of the mediation results, the concept of resource caravans (Hobfoll, 2010) implies that the two psychological resources may function together to mitigate the uncertainty of COVID-19. Empirical evidence reviewed earlier and the correlations between the variables in this study also indicate that resilience and academic self-efficacy are related to uncertainty. It should be noted that psychological resources are valuable,

as they are associated with positive outcomes (e.g., improved academic performance and enhanced well-being) and enable individuals to achieve their personal goals and fulfill their needs (Merino & Privado, 2015). As such, these may bolster each other to act in tandem to attain the outcome of reducing the uncertainty of COVID-19.

Practice Implications

Turkish students may be encouraged to build social support resources to be able to orchestrate psychological resources. In this regard, interventions may be aimed at fostering students' social competence to enable them to identify, share, and adapt strategies for cultivating quality relationships and strengthening existing ones. For instance, the Reinvent Yourself training intervention may be useful, as it focuses on managing one's inner resources, expanding self-awareness, practicing positive behavioral attitudes, nurturing interpersonal and intrapersonal skills, and demonstrating teamwork for advancing social competence (cf. Green, 2019). Also, student affairs professionals in collaboration with faculty members may organize talks by experts, problem-solving sessions, short-duration lectures, and personal enrichment workshops (see Green et al., 2015a, 2015b) throughout the year for building students' psychological resources. These intentional learning activities may be based on such topics as art-of-living, body-mind-spirit dimensions of wellness, family relationships, problematic social media use, unlocking the winner within, the Five Ps of demonstrating proactivity, and building inner strength and fortitude (Çiçek et al., 2021, 2023; Green & Rizwan, 2023; Green et al., 2015c, 2015d, 2020a, 2020b; Yıldırım et al., 2023). Further, strengths interventions aimed at facilitating career adaptation, developing the X-Factor, and advancing personal growth initiative (see Green, 2021, 2023; Green & Yıldırım, 2022) may enable Turkish university students to build valuable psychological resources. To increase the effectiveness of strengths interventions, it is recommended that they enable university students to identify their signature strengths, observing strengths in others, and using their dominant strengths to develop their

lesser strengths (cf. Green, 2022b). Furthermore, education administrators may need to motivate faculty to offer social support to their students in these challenging times to bolster their students' academic self-efficacy beliefs.

Limitations and Future Research

A major limitation of this contribution is its cross-sectional nature, which may not confirm the causality with regard to the relationships in the mediation model. The study variables may interplay in different ways and as such the possibility of bidirectionality may also exist. In the future, longitudinal research may provide conclusive evidence regarding the direction of causality from perceived social support to uncertainty to COVID-19. However, this research provides strong theoretical support for the mediation model. Also, the reviewed empirical evidence supports the relationships in the model. Further, the use of self-report measures is another limitation of this research, as these may have introduced a response bias because of social desirability. In the future, a mixed-method study may be conducted for providing explanatory power to the quantitative results. Another limitation of this research is that the study sample was based on undergraduate students from state universities. Future research may focus on samples of graduate and undergraduate students from both state and private universities as well as those studying at the secondary and higher secondary levels in Turkey to improve its generalizability. Also, future research may focus on other psychological resources (e.g., creativity, autonomy, self-esteem, purpose in life, and vitality) as mediators between perceived social support and uncertainty to COVID-19. It may also be interesting to analyze the role of the six character virtues (cf. Peterson & Seligman, 2004) between perceived social support and uncertainty to COVID-19 in a future study.

All in all, this research makes a valuable contribution by demonstrating the significance of investing in social support resources for orchestrating gains in psychological resources,

which may then strengthen each other to act in unison to alleviate the uncertainty of COVID-19.

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Indirektan efekat percipirane socijalne podrške na nesigurnost u vezi COVID-19 ostvaren preko psiholoških resursa na uzorku turskih studenata

Zane Asher Green¹, İlhan Çiçek², & Murat Yıldırım³

¹Preston University, Islamabad, Pakistan

²Batman University, Batman, Turkey

³Ağrı İbrahim Çeçen University, Merkez, Ağrı, Turkey

Ova studija ispituje medijatorske efekte rezilijentnosti i akademske samo-efikasnosti (psiholoških resursa) na vezu između socijalne podrške i nesigurnosti u vezi COVID-19. U istraživanju je učestvovalo 607 turskih studenata osnovnih studija (68% žena) sa prosečnom starošću od 21.71 godina ($SD = 3.18$). Rezultati pokazuju da percipirana socijalna podrška pozitivno predviđa rezilijentnost i akademsku samo-efikasnost, dok socijalna podrška, rezilijentnost i akademska samo-efikasnost negativno predviđaju nesigurnost u vezi COVID-19. Nalazi ističu značaj investiranja u resurse socijalne podrške radi dobijanja na psihološkim resursima. Dejstvujući zajedno ti resursi mogu imati još jače dejstvo na smanjivanje nesigurnosti u vezi COVID-19. Teorijski doprinosi i praktične implikacije rezultata kao i nedostaci i predlozi za buduća istraživanja su takođe u radu.

Ključne reči: percipirana socijalna podrška, rezilijentnost, akademska samo-efikasnost, neizvesnost COVID-19

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Table 1
Descriptive Statistics and Correlations

No	Variable	Descriptive Statistics				α	Correlations			
		Mean	<i>SD</i>	Skewness	Kurtosis		1	2	3	4
1	Perceived social support	15.65	5.02	-0.23	-0.95	.77	—	.39	.34	-.30
2	Resilience	8.05	3.26	-0.37	-1.22	.72		—	.35	-.27
3	Academic self-efficacy	20.25	4.15	-0.45	-0.40	.78				-.23
4	Uncertainty of COVID-19	10.33	2.99	0.25	-1.11	.79				—

Note. All correlations are significant at $p < .001$

Table 2. *Unstandardized Coefficients for the Mediation Model*

Antecedent		Consequent			
		M_1 (Resilience)			
		Coeff.	SE	<i>t</i>	<i>p</i>
X (Perceived social support)		.25	.02	10.43	<.001
Constant		4.08	.40	10.22	<.001
		$R^2 = .15$ $F = 108.84; p < .001$			
		M_2 (Academic self-efficacy)			
X (Perceived social support)		.28	.03	8.88	<.001
Constant		15.85	.52	30.46	<.001
		$R^2 = .12$ $F = 78.76; p < .001$			
		Y (Uncertainty of COVID-19)			
X (Perceived social support)		-.12	.03	-4.03	<.001
	M_1 (Resilience)	-.14	.04	-3.57	<.001
	M_2 (Academic self-efficacy)	-.08	.03	-2.68	<.01
Constant		14.93	.60	25.07	<.001
		$R^2 = .13$ $F = 28.78; p < .001$			

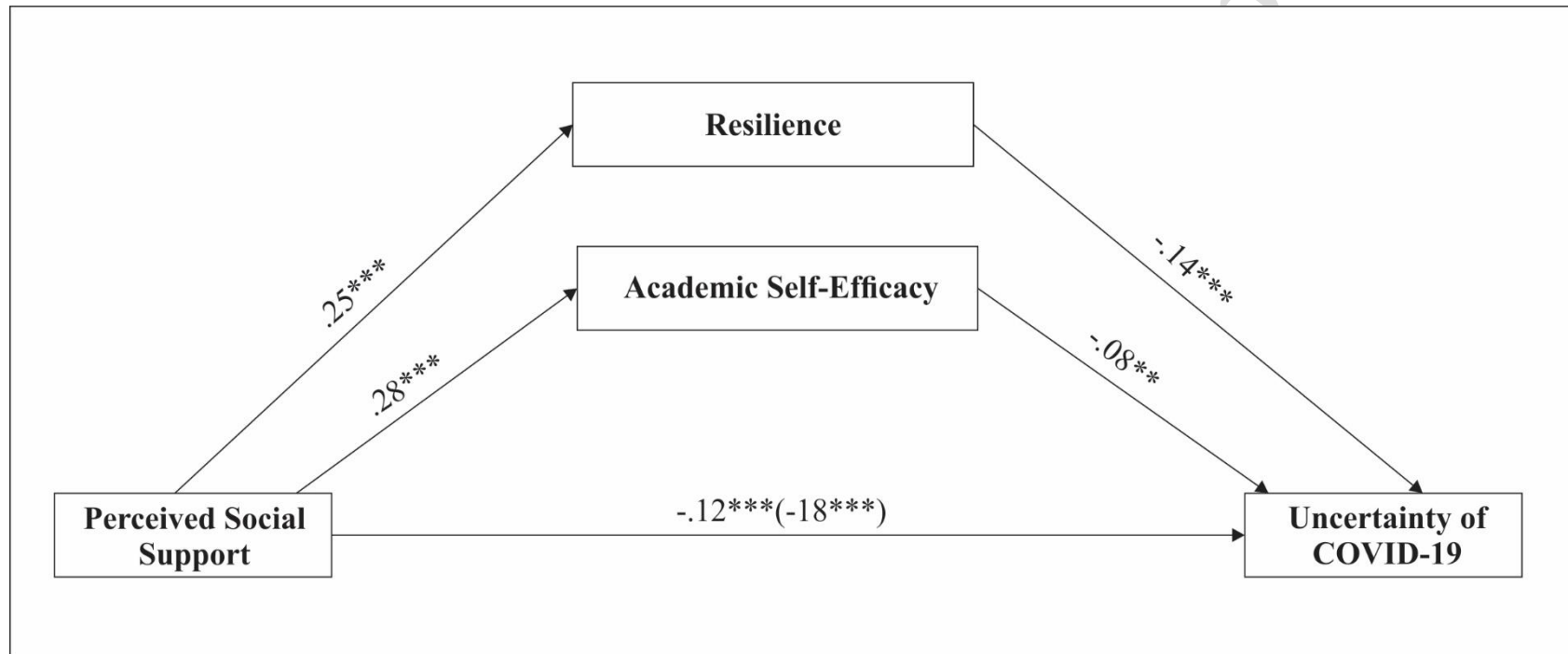
Note. SE = standard error. Coeff = unstandardized coefficient. X = independent variable; M = mediator variable; Y = dependent variable

Table 3. *Standardized Total and Indirect Effects*

Path	Effect	SE	BootLLCI	BootULCI
Total	-.06	.01	-.08	-.04
Social support→Resilience→Uncertainty of COVID-19	-.04	.01	-.06	-.02
Social support→Academic self-efficacy→Uncertainty of COVID-19	-.02	.01	-.04	-.01

Note. Number of bootstrap samples for percentile bootstrap confidence intervals: 10,000

Figure 1
The Mediation Model



Note. $**p < .01$; $***p < .001$