



Character Strengths' Change During COVID-19

Sahar Amoury Naddaf¹ · Shiri Lavy¹ 

Accepted: 5 September 2022 / Published online: 5 November 2022
© The Author(s), under exclusive licence to Springer Nature B.V. 2022

Abstract

The COVID-19 had negative effects on individuals and nations worldwide. However, based on literature suggesting that crises can trigger growth, we propose that it may have also triggered individuals' character strengths development, especially among those having experienced moderate levels of difficulty during the pandemic and having received social support. The participants' ($N=1700$) 24 character strengths were assessed twice: before and during COVID-19. At the second assessment, participants also reported the level of impact COVID-19 had on their lives, and their perceived social support. MANOVA analysis revealed a general increase in character strengths, with significant – but mainly negligible or small - increases in 17 strengths: appreciation of beauty and excellence, bravery, prudence, creativity, curiosity, fairness, gratitude, honesty, hope, judgment, kindness, leadership, perspective, self-regulation, social intelligence, spirituality, and zest. Across the 24 strengths, the reported level of COVID-19's impact (i.e., low, moderate, or high) was not associated with different changes during the pandemic. Univariate analyses showed that such changes were significant only in curiosity, forgiveness and kindness. The multivariate effect of social support on changes in character strengths was significant. Specifically, it enhanced the increase in love, prudence, curiosity, forgiveness, gratitude, honesty, hope, judgment, leadership, humility and zest during COVID-19, although the interactions effect sizes were small. The results suggest that, in the time frame examined in this study, character development processes triggered by COVID-19 were evident, yet specific changes in strengths were relatively mild. Some of these processes may have been enhanced by social support.

Keywords Character Strengths · Character Strengths Development · COVID-19 Crisis · Character Strengths Change · Social Support

✉ Sahar Amoury Naddaf
saharamoury@gmail.com

Shiri Lavy
shirilavy@gmail.com

¹ Department of Leadership and Policy in Education, University of Haifa, Haifa, Israel

1 Introduction

COVID-19 has led to a fundamental change in multiple life domains, thus challenging many individuals' habits, plans, and ways of thought and behavior. Whereas such crises have been shown to engender negative effects on individuals (e.g., Baiano et al., 2020), it was suggested that they may also promote growth processes under certain circumstances (e.g., Rashid & McGrath 2020; Tedeschi & Calhoun, 1996, 2004). Our study focuses on such growth processes and the mechanisms that facilitate them during the COVID-19 crisis. Specifically, we focus on the possible development of individuals' *character strengths*—positive personal attributes that are thought to be valued across different cultures and religions whose deployment and development are considered a path for human flourishing and fulfillment (Peterson & Seligman, 2004). The study aimed to conduct an initial empirical exploration of the possible development of character strengths during COVID-19 in a large sample. It further aimed to examine how this process is impacted by the level of challenge posed by COVID-19 on the individual and the role of social support in facilitating it. This study aims to broaden our understanding of character strengths change during the COVID-19 crisis and the mechanisms that may underline these changes. Thus, it will expand our understanding of potential personality change that may accompany global crises and the conditions that may foster them.

1.1 COVID-19 Crisis

Recently, individuals and communities worldwide have been facing a challenging period due to the global spread of coronavirus, known as COVID-19 (henceforth, termed COVID-19 in the present study). The pandemic has resulted in over 181 million confirmed cases and almost four million deaths worldwide (World Health Organization Report, 2021). Furthermore, COVID-19 has led to a global crisis impacting not only individuals' health but also their financial, professional, and social lives (e.g., McKibbin & Fernando, 2021; Nicola et al., 2020), as it notably changed many aspects of people's daily lives and personal, organizational, educational, and national plans. For instance, COVID-19 has led to the closure of various educational institutions, impacting over 1.5 billion students worldwide, from primary to tertiary level (e.g., Nicola et al., 2020; UNESCO, 2021). In addition, unemployment rates have dramatically increased in several countries. For example, in April 2020, unemployment rates increased in the U.S. (14.80%), Canada (13.10%), OECD countries (8.82%), Spain (15.20%), and other EU countries, and millions have become unemployed (OECD Report, 2021). The present study focuses mainly on American participants. Like other countries, U.S. suffered from COVID-19 massive spread. According to the CDC website (i.e., Centers for Disease Control and Prevention), on January 20, 2020, U.S. had its first laboratory-confirmed case of COVID-19. On January 31, 2020, The World Health Organization International Health Regulation Emergency Committee declared the coronavirus crisis a Public Health Emergency of International Concern. However, only on March 13, 2020, President Trump declared a nationwide emergency in the US, with lockdowns attempting to prevent the spread of the pandemic starting from March 15. For example, public schools in New York City (with 1.1 million students) were closed. On March 28, 2020, measures of social distancing were extended by The White House until the end of April 2020. On April 13, 2020, the number of confirmed cases of COVID-19 was the highest to be reported by

most of U.S. states. On May 28, 2020, United States COVID-19 number of deaths surpassed 100,000. This number has increased and on December 14, 2020, United States COVID-19 death toll surpassed 300,000 (the data was retrieved from the CDC website: <https://www.cdc.gov/museum/timeline/covid19.html>).

Acknowledging the distressing nature of this crisis, most of the research on COVID-19 to date has highlighted its negative impact on health, economy, work-life, social life, and well-being (e.g., Fernandes 2020; Nicola et al., 2020; Wang et al., 2020). Whereas this impact is evident and should not be overlooked, in the present research, we propose that COVID-19 may also be presented as an opportunity for human growth, by triggering individuals' development of their character strengths at this turbulent time. It was suggested that crises may also have positive effects on human development (e.g., Tedeschi & Calhoun 1996, 2004), as they may advance people to develop their personal strengths, create and develop meaningful interpersonal relationships, change their priorities, enrich people's existential and spiritual lives, and increase their general appreciation of life (Tedeschi & Calhoun, 2004). These ideas correspond with the specific proposition that major adverse events can trigger character growth (Peterson & Seligman, 2003, 2004). However, studies of these proposed positive effects of crises suffered from major methodological limitations, mainly because the crises were unforeseen and thus the studies typically failed to examine actual changes and were based mostly on cross sectional studies during or following the crisis, or on post-hoc evaluations of the changes (Jayawickreme et al., 2021; Jayawickreme & Zachry, 2018). In fact, there are only a few longitudinal, prospective studies examining changes in character strengths (e.g., Gander & Wagner 2021).

COVID-19, as a global crisis, provided as an opportunity to examine these ideas in a large scale, with longitudinal data of a large sample. COVID-19 has impacted several life domains while challenging humans' daily routines and impacting individual and collective behavior. Thus, it has challenged our mundane, daily habits of behavior, thought, and emotional coping, requiring large populations worldwide to adapt and develop while finding new ways to pursue their lives and personal and societal goals. Therefore, it enables studying the effects of a crisis, as specifically – its effects on changes in character strengths, in large populations whose character strengths were assessed before the pandemic.

1.2 Character Strengths and Their Development

In the current study, we focused on individuals' character strengths' possible development during the COVID-19 crisis. As noted, character strengths are defined as positive, morally valued personal characteristics or traits (Peterson & Seligman, 2004). One of the most commonly used frameworks for exploring character strengths today is Peterson and Seligman's (2004) Values in Action (VIA) classification. It classifies 24 character strengths, aimed to represent a range of morally valued positive traits that embody the "good character," comprising different aspects considered crucial for creating a good life (Park & Peterson, 2006a, 2009). Each character strength relates to one of six core virtues – reflecting the core traits and moral values for good life (Peterson & Seligman, 2004). The core virtues include: (1) wisdom and knowledge – fostering the acquisition and use of knowledge; (2) courage – reflecting strong will to achieve one's goals, even in the face of internal or external difficulties; (3) humanity – reflecting the ability to care for and connect with others; (4) justice – which provides the foundation of social life; (5) temperance – which protects against

Table 1 VIA Classification of Character Strengths and Virtues Based on Peterson & Seligman (2004, pp. 29–30)

Virtue	
Wisdom and Knowledge - Cognitive strengths that require the acquisition and usage of knowledge.	Creativity Curiosity Judgment Love of Learning Perspective
Courage - Emotional strengths that require individuals' use of their will to achieve goals despite external or internal conflicts.	Bravery Perseverance Honesty Zest
Humanity - Interpersonal strengths that entail people's ability to care of and befriend others.	Love Kindness Social Intelligence
Justice - Civic strengths that are the foundation of an active society life.	Teamwork Fairness Leadership
Temperance - Strengths that are protective against unacceptable actions and behavior.	Forgiveness Humility Prudence Self-regulation
Transcendence - Strengths that contribute to individuals' sense of meaning and their ability to attach to the wider world and universe.	Appreciation of beauty and excellence Gratitude Hope Humor Spirituality

behaviors that are harmful (for oneself or others); and (6) transcendence – reflecting the sense of meaning and connection with the broader world and beyond. The 24 character strengths are thought to reflect the mechanisms or psychological paths that lead to the development of these virtues (see Table 1).

Research has consistently shown that character strengths are associated with a host of desirable outcomes related to increased well-being and functioning in life and at work (Dubreuil et al., 2014; Harzer & Ruch, 2012, 2013; Forest et al., 2012; Lavy & Littman-Ovadia, 2017; Smith, 2011), among which are elevated levels of self-esteem (e.g., Minhas 2010), relationship satisfaction (Lavy et al., 2014, 2016, improved learning outcomes (e.g., Park, 2009), and personal growth (e.g., Lavy & Littman-Ovadia 2017; Lavy et al., 2016; Park, 2004; Minhas 2010; Niemiec, 2013; Park & Peterson, 2008). Furthermore, although character strengths are generally stable across time and situations (e.g., Gander et al., 2020), researchers have argued that they can be developed with practice, and that they are strongly affected by the environment and by individuals' personal experiences (e.g., Niemiec 2017; Park & Peterson, 2006b, 2009). For example, it was suggested that gratitude could be developed by acknowledging one's blessings and living in an environment that encourages such acknowledgement. Such experiences can include, for example, writing a daily journal of one's blessings, practicing a spiritual ritual that includes giving thanks for one's blessings,

or living in an environment that values and encourages being grateful (e.g., Thurackal et al., 2016; Wood et al., 2010).

However, these ideas have rarely been studied empirically, and most studies that examined them were cross-sectional or retrospective. For example, although some character strengths were associated with age in two studies (Baumann et al., 2020; Martínez-Martí & Ruch, 2014), these studies did not demonstrate the change in character strengths over time, and thus the association may be related to initial differences between cohorts in different ages.

In the present research, we view the COVID-19 crisis as an opportunity that could trigger individuals' use of their strengths to cope with the diverse challenges that the crisis has introduced. Crises and difficulties, like COVID-19, challenge our cognitive, emotional, and behavioral habits and thus invite us to use our strengths in new ways. Indeed, these unique circumstances could, at times, present the need to use and develop strengths that were not in our focus earlier. Research has shown that such difficulties and challenges can foster the use of character strengths and hence, their development.

Although it was repeatedly proposed that major life events can promote the development of strengths and character (e.g., Peterson & Seligman 2003; Peterson et al., 2008; Tedeschi & Calhoun, 2004), empirical examination of this idea is limited, and mostly cross-sectional and retrospective. For example, studies of participants who had physical illness, psychological disorders, or experienced a number of traumatic events, indicated that recovery from illness/ mental disorder was related to evaluation of an increase in character strengths of appreciation of beauty and excellence, bravery, curiosity, fairness, forgiveness, gratitude, humor, kindness, love of learning, spirituality, and creativity (Peterson et al., 2006), and that the number of traumatic events experienced was associated with an increase in eleven-character strengths: kindness, leadership, bravery, honesty, perseverance, appreciation of beauty and excellence, creativity, curiosity, love of learning, spirituality and zest (Peterson et al., 2008). However, these studies relied on retrospective evaluation of participants – assessed after the events.

Peterson & Seligman (2003) took a different approach and examined changes in character strengths prevalence before and after September 11, 2001, in a sequence of different samples. The findings indicated higher scores in seven strengths in the samples assessed after the terror attacks. A study with a similar design examined changes in character strengths prevalence before and after a positive event – the 2008 European Football Championship in Switzerland (Proyer et al., 2014). The authors reported higher scores in four strengths in the sample assessed after the event. However, a subsequent study of changes in character strengths after three different school shootings (i.e., among people living in the area) indicated inconsistent results, questioning the effects of tragedies on character development (Schueller et al., 2015). A study with a similar design, of participants from France, US, and Australia after terror attacks in France, also yielded inconsistent findings, suggesting that sequential changes in character strengths in samples assessed following crisis may be questionable (Lamade et al., 2020). Overall, the studies suggest that more longitudinal research is needed on the effects of crises on character strengths change. We propose that COVID-19 may present an opportunity to advance research in this area and enable longitudinal examination of changes in character strengths during crises.

1.3 Character Strengths Development During COVID-19

The challenges and stressors of the COVID-19 pandemic seem to have significantly increased fear, worry, and anxiety (Baiano et al., 2020). Thus, it is evident that these challenges have impacted individuals' well-being (see review in Rashid & McGrath 2020). Previous research has suggested that character strengths may help enhance our psychological immunity to stressors by building protective and pragmatic habits and positive coping mechanisms (Baker et al., 2017; Rashid & McGrath, 2020). For example, character strengths have been associated with post-traumatic growth, reflecting personal growth processes following trauma (Duan & Guo, 2015; Peterson et al., 2008), as well as with increased resilience (Boe, 2016; Martínez-Martí & Ruch, 2017; Shoshani & Slone, 2016), recovery from drug addiction (Krentzman, 2013), and even learning how to deal with difficult emotions (Quoidbach et al., 2015; Uliaszek et al., 2016). Rashid & McGrath (2020) reviewed such studies, suggesting that strengths may help individuals deal with negative emotions during imposed isolation (due to COVID-19). They further proposed engaging in strength-based actions that can be practiced during physical distancing to foster their use to enhance individuals' psychological immunity and resilience.

The actual impact of such strengths-based actions has yet to be examined. However, a recent study conducted during Italy's major health crisis and lockdown (Casali et al., 2021a) showed that endorsing character strengths, especially transcendence strengths (i.e., gratitude, hope, spirituality, appreciation of beauty and excellence, and humor), was negatively associated with psychological distress and seemed to enable individuals to sustain their mental health and self-efficacy, and to positively manage their daily activities, emotions, and relations with others. Furthermore, character strengths assessed in April 2020 were associated with post-traumatic growth (PTG) and mental health 6–7 months later (Casali et al., 2021b). In a similar vein, another study (Umucu et al., 2020) found that greater endorsement of multiple character strengths significantly and independently moderated the association between COVID-19-related stress and well-being among participants with chronic health challenges and disabilities. A study of Gander & Wagner (2021) proposes pro-social mechanisms that may underlie these effects, as it linked character strengths (assessed before the pandemic) with engagement in volunteering and compliance with regulations during the pandemic.

To the best of our knowledge, only one study examined longitudinal changes in character strengths during COVID-19. In this study, Gander & Wagner (2021) examined perceived changes in oneself and in a close other, and a longitudinal analysis of changes in response to a self-report questionnaire assessing character strengths, among 366 German-speaking participants, during the first wave of the pandemic. Their findings showed that participants perceived changes in most of their character strengths as well as those of close others. However, longitudinal changes were only observed for prudence and humility. They conclude that actual character growth was smaller than the perceived changes and claim that even though people may perceive character strengths changes following a major life event, few actual changes can be observed when self-assessments are compared before and after the event. These findings correspond with Frazier et al.'s (2009) findings, in which perceived growth following a traumatic event was unrelated to actual growth in PTG-related domains. Such results emphasize the need for more longitudinal examinations of changes in character strengths, because it suggests that such changes cannot be inferred from retrospective or

post-event assessments since they only slightly overlap with longitudinal changes (findings that correspond with the conclusions of Frazier et al., 2009).

The present study comprises this kind of longitudinal research, examining changes in character strengths during COVID-19. It is based on the literature suggesting that challenges and crises (such as COVID-19) may trigger the development of character strengths. It further builds on the research showing that higher levels of character strengths may help combat the negative effects of the pandemic. Based on this understanding, it seems plausible that to enhance individuals' capacity to deal with COVID-19, they may have bolstered their character strengths.

Q1. Which strengths will develop the most during the crisis?

Based on the theoretical framework that suggests that challenges and crises can trigger strengths development, we posited a general increase in character strengths during the COVID-19 crisis. However, based on the accumulated knowledge about character strengths development in turbulent times and on the features of this specific crisis, we expected those strengths that would have instrumental value in coping with the crisis to develop more prominently. Researchers have suggested that experiencing adversity can re-shape one's character and life priorities (Tedeschi & Calhoun, 2004), and we suggested similarly that coping with COVID-19 (and other crises) may require the use of certain strengths that the individual may not have developed before the crisis. Thus, we expected higher development of the character strengths related to the core virtues of transcendence, humanity, and wisdom and knowledge.

The strengths related to the virtue of transcendence (i.e., gratitude, hope, spirituality, appreciation of beauty and excellence, and humor) enable individuals to realize that in life, there is a purpose larger than themselves (Peterson & Seligman, 2004). Some of the transcendence strengths have indeed been shown to be among those having the strongest associations with well-being (e.g., a meta-analysis by Bruna et al., 2019; Littman-Ovadia & Lavy, 2012; Niemiec, 2013). Moreover, some of the transcendence strengths have been shown to increase in previous studies on coping with extreme difficulties (e.g., gratitude, hope, spirituality and kindness—Peterson & Seligman, 2003; Peterson et al., 2008; kindness, humor, and appreciation of beauty and excellence—Peterson et al., 2006). This virtue incorporates strengths (e.g., hope, spirituality, gratitude) that we believed could help people sustain their positivity and sense of meaning, realizing that they are part of “something bigger,” despite the difficult (albeit temporary) circumstances, such as prolonged isolation and social distancing. These strengths may be especially valuable when experiencing uncertainty, often experienced during the COVID-19 crisis when conditions related to several life domains (e.g., health, work, personal mobility) were dramatically changed, at times unexpectedly. Thus, the cited strengths may contribute to a person's sense of reassurance by experiencing and practicing strengths that highlight faith, trust, and connectedness (Lavy & Benish-Weisman, 2021). This may enable individuals to believe in a better future and see the pandemic era as another page in history. Indeed, transcendence strengths assessed during the pandemic (in April 2020) predicted subsequent mental health six months later (Casali et al., 2021b). Thus, we expected the transcendence strengths to show a notable increase during COVID-19.

We also expected strengths related to the virtue of humanity (i.e., love, kindness, and social intelligence; Peterson & Seligman 2004) to increase during the COVID-19 crisis because interpersonal relationships and connections are often given more attention and

serve as a resource in turbulent times (e.g., Feeney & Collins 2015). Indeed, two of the three humanity strengths—love and kindness—have been shown to increase in other situations of crisis and trauma (Peterson & Seligman, 2003; Peterson et al., 2008). Furthermore, such circumstances may highlight our shared humanity and its centrality (Frankl, 1985). Specifically, COVID-19, as a global pandemic, has raised individuals' awareness of our potential impact on each other and highlighted the consequences of our interdependence, as outcomes related to each person's health relied on the precautions of others in their environment. Humanity strengths indeed predicted PTG during COVID-19, suggesting their role in coping effectively with the crisis (Casali et al., 2021b).

The third set of strengths expected to notably increase during and following COVID-19 is tied to the wisdom and knowledge virtue (i.e., creativity, curiosity, judgment, love of learning, and perspective). These strengths are predominantly cognitive (Peterson & Seligman, 2004) and have not typically been among the strengths shown to increase following turbulence or trauma (e.g., Peterson & Seligman 2003; Peterson et al., 2008). However, these strengths facilitate viewing life through a wider lens, offering a broader perspective and understanding of life, perceptions that we feel are invaluable in the COVID-19 crisis. These strengths comprise tools that could enable dealing more successfully with the imposed constraints and modifications of various life practices and arenas, mandating a reassessment of habitual processes in several life domains. Therefore, we suggest that people use the strengths of wisdom and knowledge during the COVID-19 crisis to achieve a broader perspective, acquire knowledge, and reach creative solutions that may help them understand the situation and cope with it. In sum, we anticipate that the strengths related to the virtues of transcendence, humanity, and wisdom and knowledge are especially inclined to increase during COVID-19, given their potential functionality in facing the challenging COVID-19 period.

H1: There will be an increase in character strengths during COVID-19, especially strengths related to the virtues of transcendence, humanity, and wisdom and knowledge.

1.4 Factors that Enhance Character Strengths' Development in Crisis

Whereas the potential to foster character strengths development in the context of crisis and difficulty has been proposed, we know that this potential is not always fulfilled. Thus, it is critical to extend our understanding of the conditions that trigger, enable, and foster such development during crises. We can gain insight into these conditions from related research on stress and post-traumatic growth (PTG). PTG is defined as a positive psychological change experienced due to the struggle with highly difficult and challenging life circumstances (Tedeschi & Calhoun, 2004). Although COVID-19 may not necessarily be considered trauma, some research has indicated that COVID-19 may elicit post-traumatic symptoms (e.g., Jiang & McCoy 2020; Lee & You, 2020; Serafini et al., 2020; Usher et al., 2020). Thus, we expected to see parallel coping mechanisms upon dealing with trauma, crisis, and other major turbulence due to the similarity in the psychological challenges that such events present and the coping they require.

Level of experienced difficulty. PTG research has shown that if the impact of hardship is trivial, it will not serve as a catalyst for change and development, and if the impact is extreme, then the damage will be evident and may not enable development (e.g., Peterson et al., 2008; Schueller et al., 2015). Related findings link exposure to moderate levels of adver-

sity with more adaptive functioning and better mental health and well-being (Rutter, 2012; Seery et al., 2010). For instance, a study that examined the extent to which Latinas report PTG following the stressful experiences of immigration indicated that high PTG could be expected when the level of immigration-related stress is moderate (Berger & Weiss, 2006). This suggests that a moderate level of stress and adversity is more likely to result in the highest growth. However, in a recent study on changes in character strengths during COVID-19, the individual impact of the crisis had only a small effect on perceived changes in one strength (honesty) and was not associated with measured differences in strengths (before and during the pandemic) (Gander & Wagner, 2021).

In the current study, we examined the effect of the extent of the impact caused by COVID-19 (i.e., mild, moderate, and severe) on the modification of their character strengths. Based on the research reviewed above, we initially expected moderate levels of COVID-19's impact to be associated with the most evident character strengths development. We anticipated that a moderate level of difficulty may be harsh enough to trigger individuals' character strengths' development but not so harsh as to overwhelm and deflate their resources. However, we also considered the possibility that no effects will be found (based on Gander & Wagner 2021).

H2: There will be differences in the increase in character strengths during the COVID-19 pandemic depending on the impact of COVID-19 on the person. The highest increase in character strengths will be among participants who experienced moderate (rather than high or low) levels of COVID-19 challenges.

Social support. Research has suggested that receiving social support may be one of the factors that enables and facilitates growth during and following turbulence (Calhoun et al., 2010; Joseph & Linley, 2005; Park, 2010; Tedeschi & Calhoun, 2004). Social support can be defined in different ways. However, in the present study, we view social support as a factor which involves a variety of relationship transactions among individuals where one receives benefits from another (Zimet et al., 1988). We suggest that such supportive transactions of individuals with their families, friends or any significant other can play an important role in enabling them to overcome the immediate difficulties and seize the new opportunities for strengths use presented during COVID-19 (Feeney & Collins, 2015). Because COVID-19 crisis is broad in terms of its realms and the life arenas it affects, in this study we chose to assess social support from a variety of potential social relationships, including family, work, friends, and others (Zimet et al., 1988).

Social support, in its own right, has been associated with many positive outcomes, such as increased well-being and life satisfaction (Turner & Brown, 2010), improved health (for a review, see Loving & Slatcher 2013), and positive work-related outcomes (for a review, see Luchman & Gonzalez-Morales, 2013). It was also identified as one of the most significant factors that can buffer against adversity in various situations (Feeney & Collins, 2015; Vohs & Finkel, 2011), including the COVID-19 crisis (e.g., Cao et al., 2020; Labrague & De los Santos 2020; Xiao et al., 2020). For example, a study conducted among the medical staff in China treating patients with COVID-19 found social support to be negatively associated with the degree of anxiety and stress (Xiao et al., 2020). Similarly, social support was associated with lower anxiety during COVID-19 among nurses (Labrague & De los Santos, 2020) and college students (Cao et al., 2020). Thus, social support seems to ameliorate coping and reduce psychological stress and anxiety during the crisis.

Moreover, researchers have asserted that social support can catalyze growth in turbulent times. Indeed, supportive others can nurture one's desire to create or seize growth opportunities, help uncover such opportunities, and promote responses to these opportunities with action by encouraging planning and being supportive in handling setbacks (Feeney & Collins, 2015). These ideas align with PTG findings that experiencing adversity is not sufficient in itself to enable growth, but it can promote growth under certain conditions (Joseph & Linley, 2005; Park, 2010; Tedeschi & Calhoun, 2004), with social support being one of the core conditions that can facilitate PTG (Tedeschi & Calhoun, 2004; Calhoun et al., 2010). For instance, social support was positively associated with PTG among adults living with HIV (Zeligman et al., 2016) and cancer survivors (Schroevvers et al., 2010).

Studies have also linked social support with increased use of strengths in different contexts: supervisor support was associated with increased daily strengths use at work (Lavy et al., 2017), and couple relationship satisfaction was associated with more use of strengths (Lavy et al., 2016). Furthermore, research specifically supported the idea that positive social contacts may advance the use of strengths as a strategy of overcoming difficulty: In a longitudinal intervention study, participants who wrote a note to their loved ones every day, seemed to use their strengths more as a strategy to overcome daily negative mood (Lavy et al., 2014). Based on these findings, we propose that social support may also foster character strengths development during COVID-19 crisis.

H3: Development of character strengths during covid-19 will be enhanced by individuals' perceived social support.

2 Method

The research question and hypotheses were examined in data collected from 1700 English-speaking individuals at two time points—before and during the COVID-19 crisis. The two assessments were conducted from 1 to 2019 until 29 January 2020, and 5–12 months later, from 27 to 2020 until 8 June 2020. The data were collected by the VIA Institute on Character, a non-profit organization whose website allows free access to a character strengths survey. People interested in discovering their character strengths can complete the online survey and receive feedback at no cost. The VIA Institute accommodated the current study by supplementing the standard survey with some additional questions (described below) to help address the second and third hypotheses (i.e., effects of COVID-19 impact levels and social support on character strengths development). The VIA Institute on Character contacted all participants who completed the survey during the months prior to the onset of the COVID-19 crisis in the US ($N=208,000$) and invited them to complete it for a second time; the data of those accepting the invitation were included in the current dataset.

2.1 Participants

The sample comprised 1700 participants who completed the survey again after being invited to do so, including 323 men (19%), 1330 women (78.2%), 13 other (0.80%), and 34 participants (2%) who did not report their gender. Participants' ages ranged from 18 to over 75:

10.2% were 18–24, 19.5% were 25–34, 22.1% were 35–44, 21.9% were 45–54, 17.5% were 55–64, 6.7% were 65–74, and 8% were over 75. Most of the participants reported having an academic degree: BA (33.3%), MA (32.9%), or PhD. (7.1%), whereas other reported being high school graduates (4.9%) or completing other professional training (15.3%). Participants' occupations were diverse; they included a wide variety of health-related professionals such as doctors, nurses, paramedics, wellness and health coaches (9.8%), various service and production jobs, including hospitality, retail, production, and others (11.8%), information and communications technology professions (6.4%), educational occupations/ including teachers, lecturers/ and other teaching professionals (18%), science and engineering (4.4%), psychology, social work/ and counseling (5.6%), human resources, sales, marketing, and public relations (7.6%), finance professions (1.8%), armed forces (1.5%), legal professions (1.3%), religious professions (0.2%), and retired participants (0.5%). Some participants (31.1%) did not provide occupation information. All the participants were Americans; 539 of them (31.7%) provided information about their ethnicity: White/ Caucasian (26.90%), Black/ African (1.20%), Hispanic/ Latino/ Latina (1.2%), multiracial (1%), Chinese/ Korean/ Japanese/ Filipino/ East, Asian/ Southeast Asian (0.7%), Indian/ Pakistani/ Bangladeshi (0.2%), American Indian/ Arctic Native (0.1%), and Arab/ Middle Eastern (0.1%).

2.2 Procedure

The data were collected in collaboration with the VIA Institute on Character, a non-profit organization whose sites enable full cost-free access to those interested in discovering their strengths by completing the VIA Inventory of Strengths and receiving feedback. Participants who completed the VIA survey during 3–9 months prior to the COVID-19 global crisis (from 1 to 2019 until 29 January 2020) were invited to complete the same survey for a second time during the COVID-19 crisis. This second round took place from 27 to 2020 until 8 June 2020, immediately after the end of the first wave. At this time, participants also completed measures assessing the COVID-19 crisis's impact on their personal life and the level of social support they have received. All participants signed the informed consent statement on the VIA Institute on Character website (www.viacharacter.org). All participants completed the questionnaires voluntarily without receiving any compensation or incentive aside from receiving feedback on the survey. This study was approved by the ethics committee of the authors' faculty.

2.3 Measures

The VIA Inventory of Strengths (VIA-IS; Peterson & Seligman 2004) was used to assess the 24 character strengths. The original measure is a 240-item self-report questionnaire in which people endorse statements about their strengths. Items are presented on a 5-point Likert-type scale, ranging from 1 (*not at all like me*) to 5 (*very much like me*). In the present study, participants completed the short version of the VIA-IS, known as the VIA-IS-P (McGrath, 2019), comprising 96 items, four items for each of the 24 strengths. Sample items included "I have many interests" (assessing curiosity) and "I am an extremely grateful person" (assessing gratitude). The VIA-IS-P comprises only positively formulated items. Each participant received 24 scores by averaging four ratings for each strength. For the cur-

rent sample, the 24 VIA-IS-P scales' Cronbach alphas ranged from 0.68 to 0.88 and from 0.68 to 0.89 for the first and second assessments, respectively.

The Multidimensional Scale of Perceived Social Support (MSPSS) is a 12-item self-report measure of perceived social support (Zimet et al., 1988). In the current study, to minimize fatigue effects related to the long character strengths measure, we used a shortened 5-item version created for this study, selecting items based on their relevance to the life circumstances and challenges during COVID-19, and to their inclusiveness (in terms of their relevance to various situations). Thus, the items that were chosen were the most general ones, that refer to general rather than to specific situations (e.g., "My family really tries to help me"; "My friend/s is/are always around when I am in need"). We included items related to support of family and friends from the original questionnaire, in addition to an item assessing the support of supervisors at work (e.g., "My supervisor at work goes out of his/her way to help me"; Eisenberger et al., 2002) due to its relevance during the pandemic. The items were rated on a 7-point Likert-type scale, ranging from 1 (*very strongly disagree*) to 7 (*very strongly agree*). Confirmatory factor analysis (CFA) using AMOS 25, was conducted to validate the scale's factorial structure. The analysis indicated a good fit of the items with a single factor (NFI=0.99; TLI 0.96; CFI=0.99; RMSEA=0.08). The scale showed satisfactory internal consistency (Cronbach's $\alpha=0.70$).

The level of COVID-19 difficulty. This variable was assessed with a single question about the level of challenge posed by COVID-19 on the participants, derived from the COVID-19 questionnaire of the Israel Statistical Bureau. Participants rated the extent to which COVID-19 impacted their lives (i.e., "To what extent has COVID-19 impacted your life?") on a scale comprising three points: 1 (*mildly or not at all*), 2 (*moderately*), and 3 (*very much*).

A brief demographic questionnaire, completed at the initial assessment, tapped gender, age, education level, country of birth, occupation, and ethnicity.

3 Results

3.1 Statistical Considerations

Our analytic strategy was chosen in an attempt to provide meaningful analyses and interpretations of the findings of our study, while acknowledging the large number of character strengths (24) and the relatively large sample size ($n=1700$). Thus, although character strengths are inherently different from each other – we chose to conduct MANOVA tests to examine their changes during the pandemic, in order to decrease type-I error. We also considered effects sizes, based on partial eta square values, in addition to p values. Although all the results with associated $p < .05$ were considered significant, only effects with an associated value of $\eta^2=0.01$ or more were discussed because smaller effects are considered negligible or small. With this approach, we hoped to reveal changes that occur – but also decrease the chance of overestimating effects due to multiple analyses or large sample size.

3.2 Examining Changes in Character Strengths During COVID-19 (H1), and the Effect of COVID-19 Impact on These Changes (H2)

To examine changes in character strengths (H1), we conducted a repeated-measures MANOVA analysis to compare character strengths scores prior to COVID-19 (Time 1) with

character strengths scores assessed during COVID-19 (Time 2; see Table 2). In this analysis, we controlled for the differences in time that passed between the first and second assessments (5–12 months), this time delay was entered as a grand-mean centered covariant (as suggested by Schneider et al., 2015), to avoid statistical biases related to its scaling when evaluating the main effect of time on character strengths change. In addition, (in order to avoid running the same analyses again) we also examined the effects of between-subjects variance in the level of difficulty experienced due to COVID-19 (i.e., low, moderate, and high; defined as a between-subjects ordinal factor) on these changes in character strengths (H2). All the analyses were conducted with SPSS 25 Statistics package.

The results supported H1, indicating significant multivariate effects of time (i.e., before/during COVID-19) on character strengths scores (Wilk's Lambda=0.91, $F(24, 1673)=7.26$, $p<.001$, $\eta^2=0.094$). Follow-up univariate testing indicated significant increases in 17 strengths: appreciation of beauty and excellence, bravery, prudence, creativity, curiosity, fairness, gratitude, honesty, hope, judgment, kindness, leadership, perspective, self-regulation, social intelligence, spirituality, and zest. However, effect sizes for eight of these strengths were negligible ($\eta^2<0.01$). The effect size for the change in the strengths appreciation of beauty and excellence, bravery, prudence, creativity, curiosity, gratitude, hope, judgment, and perspective were small ($0.012<\eta^2<0.034$). There were no significant decreases in any of the strength.

The findings provided limited support to H2, while indicating that the multivariate interaction effect between time (i.e., T1, T2) and the level of difficulty due to COVID-19, was not significant, with a small effect size (Wilk's Lambda=0.97, $F(48, 3346)=1.09$, $p=.31$, $\eta^2=0.015$). Follow-up univariate testing indicated that the interaction effects were significant only for three strengths: curiosity, forgiveness and kindness (Table 3). To further examine the source of these interactions (although their effect sizes were negligible) we examined the correlations between the level of difficulty due to COVID-19 and changes in character strengths during the pandemic, while controlling the time between the two assessments. Changes in character strengths during the pandemic were obtained by computing, for each strength, the difference between the strength score in T1 and the strength score in T2. The results indicated positive correlations between the level of difficulty due to COVID-19 and character strength changes in curiosity ($r=.06$, $p<.05$). Yet, the findings revealed no significant correlation between the level of difficulty due to COVID-19 and the character strengths of forgiveness and kindness.

However, our hypothesis was not a linear impact of COVID-19 challenges, but rather we hypothesized that the highest increase in character strengths will be among participants who experienced moderate (rather than high or low) levels of COVID-19 challenges (H2). Thus, additional post-hoc analysis was required for the source of interaction with the change in curiosity forgiveness, and kindness. Because the measure of COVID-19 challenges had only three points and the sample size was large, we examined the differences between participants who reported being impacted by COVID-19 mildly (group 1, $N=405$), moderately (group 2, $N=892$) or very much (group 3, $N=403$). This post-hoc analysis (presented in Table 3 and in the Supplementary Material Fig. 1) indicated that curiosity increased more among participants who experienced the impact of COVID-19 as low, forgiveness increased more among participants who experienced its impact as moderate, and kindness increased more among participants who experienced its impact as low or moderate. Thus, the findings provide limited support to the hypothesis (H2; only for forgiveness).

Table 2 Mean Scores on the VIA Inventory of Strengths

Trait	Test-Retest	Mean T1		Mean T2		SD T1	SD T2	F	Estimate of effect size (Partial η^2)	Correlation with COVID-19 impact	
		Mean T1	Mean T2	SD T1	SD T2					T1	T2
Appreciation of beauty and excellence	0.77	3.99	4.06	0.78	0.78	30.35***	0.018	0.05	0.05*		
Bravery	0.77	3.38	3.47	0.86	0.82	43.84***	0.025	0.07**	0.07**		
Love	0.78	3.77	3.77	0.94	0.98	0.18	0.000	0.06*	0.06*		
Prudence	0.76	3.57	3.62	0.86	0.82	11.69**	0.007	-0.05*	-0.04		
Teamwork	0.71	3.53	3.54	0.78	0.74	0.55	0.000	0.07**	0.07**		
Creativity	0.79	3.60	3.66	0.86	0.82	20.62***	0.012	-0.00	0.00		
Curiosity	0.72	3.92	3.96	0.74	0.70	7.77**	0.005	0.01	-0.03		
Fairness	0.68	3.99	4.03	0.70	0.70	6.16*	0.004	0.02	0.02		
Forgiveness	0.74	3.69	3.69	0.78	0.78	0.02	0.000	-0.01	-0.00		
Gratitude	0.75	3.77	3.86	0.82	0.82	39.70***	0.023	-0.03	-0.02		
Honesty	0.73	4.17	4.20	0.61	0.61	6.75**	0.004	-0.03	-0.04		
Hope	0.72	3.76	3.85	0.78	0.74	42.53***	0.024	-0.03	-0.06**		
Humor	0.81	3.75	3.77	0.90	0.90	2.65	0.002	-0.02	-0.03		
Perseverance	0.77	3.15	3.16	0.90	0.86	0.53	0.000	-0.08**	-0.08**		
Judgment	0.68	3.87	3.96	0.65	0.61	58.85***	0.034	-0.05*	-0.03		
Kindness	0.71	3.94	3.97	0.70	0.70	5.06*	0.003	0.08**	0.06**		
Leadership	0.81	3.58	3.62	0.90	0.90	5.93*	0.003	0.03	0.04		
Love of learning	0.77	4.09	4.11	0.70	0.74	1.76	0.001	0.03	0.00		
Humility	0.73	3.57	3.59	0.74	0.74	3.35	0.002	0.00	-0.01		
Perspective	0.71	3.98	4.02	0.70	0.70	8.08**	0.005	0.00	0.01		
Self-regulation	0.74	3.12	3.08	0.90	0.90	7.17**	0.004	-0.11**	-0.09**		
Social intelligence	0.76	3.82	3.85	0.70	0.74	6.93**	0.004	0.07**	0.07**		
Spirituality	0.85	3.48	3.52	1.07	1.07	5.04*	0.003	0.01	0.01		

Table 2 (continued)

Trait	Test-Retest	Mean T1	Mean T2	SD T1	SD T2	F	Estimate of effect size (Partial η^2)	Correlation with COVID-19 impact	
								T1	T2
Zest	0.80	3.24	3.27	0.04	0.04	6.05*	0.004	-0.02	-0.05
Social support									-0.01

Notes: * $p < .05$; ** $p < .01$; T1 indicates the measurement before COVID-19 (January 2019-January 2020); T2 indicates the measurement during COVID-19 (May-June, 2020); for all character strengths: $DF1 = 1, DF2 = 1698, N = 1700$; the time between the measurements was included in the model as covariant; values that are significant) are indicated in **bold**. All test-retest correlations were significant *** $p < .001$. *F* values refer to the univariate repeated measurement ANOVAs.

Regarding the control variable - the only interaction effects with the time between assessments (5–12 months) were for hope and leadership. These findings indicate that the time between assessments had an effect on the increase in hope and leadership during the pandemic. The effects were negligible for all strengths, including hope and leadership (i.e., $\eta^2 < 0.01$), perhaps because the time differences were relatively small (between 5 and 12 months).

3.3 Examining the Associations of Perceived Social Support with Changes in Character Strengths

To examine the associations of individuals' perceived social support with the changes in character strengths (H3), we conducted another repeated-measures MANOVA. Again, character strengths scores before and during COVID-19 were defined as the repeated variables (within subjects). Once again, the number of months that have passed between the first and second assessment was entered as a grand-mean centered control variable. In addition, in this analysis, the level of perceived social support was entered as the between-subjects factor.

In this analysis, the results indicated that the multivariate effect of time (i.e., before/during COVID-19) on character strengths scores was not significant when social support was controlled (Wilk's Lambda=0.98, $F(24, 1651)=1.48$, $p=.06$, $\eta^2=0.021$). Follow-up univariate testing indicated significant increases in only four strengths: appreciation of beauty and excellence, gratitude, hope and judgement. The effect size of the changes was negligible (i.e., $\eta^2 < 0.01$), except for the size of the change in gratitude, which may be considered small (i.e., $\eta^2=0.006$).

The MANOVA analysis supported H3, indicating significant multivariate interactions of time (i.e., before/during COVID-19) with perceived social support (Wilk's Lambda=0.66, $F(576, 28,175)=1.21$, $p < .001$, $\eta^2=0.02$). Follow-up univariate testing, presented in Table 4, revealed significant interaction effects between time and the perceived social support on changes in 11 strengths: love, prudence, curiosity, forgiveness, gratitude, honesty, hope, judgment, leadership, humility and zest. However, effect sizes for the effects in all strengths were small ($0.022 < \eta^2 < 0.034$).

To further examine the sources of these interactions and the nature of the changes at different levels of social support, we examined the correlations between perceived social support and changes in character strengths during the pandemic, while controlling the time between the two assessments. The results indicated positive correlations between social support and character strength changes for all 11 strengths: love ($r=.11$, $p < .001$), prudence ($r=.06$, $p < .05$), curiosity ($r=.07$, $p < .05$), forgiveness ($r=.07$, $p < .01$), gratitude ($r=.07$, $p < .01$), honesty ($r=.07$, $p < .05$), hope ($r=.11$, $p < .001$), judgment ($r=.10$, $p < .001$), leadership ($r=.09$, $p < .001$), humility ($r=.06$, $p < .05$), and zest ($r=.06$, $p < .01$)¹. Thus, the third hypothesis was supported only for these 11 strengths, suggesting that for these strengths, the increase was larger among individuals who reported more perceived social support.

¹ These values are of mere correlations between the perceived social support and the changes in character strengths. Additional analysis while controlling for the time delay between the assessments yielded similar values.

Table 3 The Moderating Effect of COVID-19 Impact on Changes in Curiosity, Forgiveness and Kindness Before and During the Pandemic

Strength	Low COVID-19 Impact (N=405)		Moderate COVID-19 Impact (N=892)		High COVID-19 Impact (N=403)		Time		Time X COVID Impact	
	Pre	During COVID	Pre	During COVID	Pre	During COVID	df	F	df	F
Curiosity	3.93 (0.71)	3.99 (0.69)	3.88 (0.68)	3.94 (0.66)	3.95 (0.66)	3.93 (0.65)	1	7.77*	2	3.66*
Forgiveness	3.73 (0.78)	3.69 (0.76)	3.65 (0.73)	3.70 (0.69)	3.71 (0.68)	3.68 (0.71)	1	0.02	2	5.01**
Kindness	3.87 (0.70)	3.90 (0.69)	3.92 (0.64)	3.98 (0.62)	4.03 (0.61)	4.02 (0.64)	1	5.06*	2	2.97*

Post-hoc tests (Tukey)

	Mean Difference	SE	Lower bound	Upper bound
Curiosity				
Low vs. Moderate	0.04	0.04	-0.03	0.12
Low vs. High	0.01	0.04	-0.07	0.09
Moderate vs. High	-0.03	0.04	-0.10	0.04
Forgiveness				
Low vs. Moderate	0.03	0.04	-0.05	0.11
Low vs. High	0.01	0.05	-0.08	0.11
Moderate vs. High	-0.02	0.04	-0.10	0.06
Kindness				
Low vs. Moderate	-0.06	0.04	-0.13	0.01
Low vs. High	-0.14*	0.04	-0.22	-0.06
Moderate vs. High	-0.07*	0.04	-0.15	-0.01

Notes: * $p < .05$; ** $p < .01$. $DF1 = 2$, $DF2 = 1697$, $N = 1700$. F values refer to Univariate repeated measurement ANOVAs.

4 Discussion

The present study aimed to explore changes in character strengths during the COVID-19 crisis. The findings indicate a significant medium sized effect ($\eta^2 = 0.094$) reflecting an increase in participants' self-reported overall character strengths, driven by significant (but negligible or small) increases in 17 of the 24 character strengths during the pandemic. No significant decreases in any of the participants' reports in any of the strengths were reported. Significant increases were found, as expected, in all but one of the strengths related to the virtue of wisdom and knowledge (creativity, curiosity, judgment, and perspective). Additionally, the results indicated a significant change in two (of the three) strengths related to humanity (social intelligence and kindness). Moreover, the findings revealed a significant change in all but one of the strengths related to the virtue of transcendence (appreciation of beauty and excellence, gratitude, hope and spirituality). Additional significantly increased strengths were honesty, bravery, zest (related to the virtue of courage), fairness, leadership (related to the virtue of justice), prudence, and self-regulation (related to the virtue of temperance). However, the findings revealed that changes in only nine strengths were not negligible, although their associated effect sizes were still small (i.e., $0.012 < \eta^2 < 0.034$; for

Table 4 Perceived Social Support Interaction with Character Strengths Increases During COVID-19

Strength	Time	Estimate of effect size (Partial η^2)	Time X social support	Estimate of effect size (Partial η^2)	Correlations with social support	
	<i>F</i>		<i>F</i>		T1	T2
Appreciation of beauty and excellence	5.56*	0.003	0.84	0.012	0.09**	0.09**
Bravery	0.46	0.000	0.86	0.012	0.05*	0.07**
Love	0.68	0.000	1.99**	0.028	0.22**	0.28**
Prudence	0.23	0.000	1.54*	0.022	0.06**	0.11**
Teamwork	0.00	0.000	1.43	0.020	0.22**	0.29**
Creativity	0.44	0.000	1.22	0.017	-0.03	-0.02
Curiosity	0.05	0.000	2.02**	0.028	0.07**	0.11**
Fairness	0.21	0.000	1.49	0.021	0.09**	0.13**
Forgiveness	0.04	0.000	2.07**	0.029	0.13**	0.19**
Gratitude	10.47**	0.006	1.73*	0.024	0.26**	0.31**
Honesty	0.75	0.000	1.56*	0.022	0.11**	0.16**
Hope	4.60*	0.003	1.69*	0.024	0.19**	0.29**
Humor	0.62	0.000	1.25	0.018	0.11**	0.15**
Perseverance	1.43	0.001	1.51	0.021	0.09**	0.11**
Judgment	6.44**	0.004	1.70*	0.024	0.01	0.09**
Kindness	1.19	0.001	0.76	0.011	0.18**	0.22**
Leadership	1.37	0.001	1.74*	0.024	0.10**	0.15**
Love of learning	0.03	0.000	1.38	0.019	0.02**	0.04
Humility	2.23	0.001	2.46***	0.034	0.07**	0.11**
Perspective	0.01	0.000	0.86	0.012	0.08**	0.12**
Self-regulation	0.14	0.000	1.39	0.020	0.08**	0.09**
Social intelligence	0.33	0.000	1.09	0.015	0.15**	0.19**
Spirituality	1.64	0.001	1.45	0.020	0.15**	0.18**
Zest	2.41	0.001	1.54*	0.022	0.20**	0.25**

Notes: * $p < .05$; ** $p < .01$; *** $p < .001$; for all character strengths: $DF1=1, DF2=1698, N=1700$; the time between the measurements was included in the model as covariant; values that are significant are indicated in **bold**. The estimate of effect sizes refers to the interaction effect sizes. F values refer to Univariate repeated measurement ANOVAs.

the strengths appreciation of beauty and excellence, bravery, prudence, creativity, curiosity, gratitude, hope, judgment, and perspective).

Taken together, the findings suggest a general (although small/moderate) increase in multiple strengths of different kinds, related to all virtues, suggesting that the COVID-19 crisis may have triggered some development of character strengths. These findings are interesting, as character strengths were shown to be relatively stable over time (e.g., Gander et al., 2020), and the only other study that examined character changes during the pandemic revealed more minor changes (Gander & Wagner, 2020). The findings indicating character strengths development are congruent with Peterson and Seligman’s (2003) results, that suggested an increase in character strengths after the 9/11 bombing. There, the increase was found in only seven of the 24 strengths, three of which also increased during COVID-19 (gratitude, hope, kindness- although the effect size for kindness was negligible), and four did not (leadership, love, spirituality, teamwork). Thus, it seems that COVID-19, being a larger-scale and more protracted crisis, may have also had a broader and somewhat different impact on character strengths development. However, the differences it may also be related

to the cross-sectional sequential sample design of the study conducted after September 11, which may reflect differences in the samples' characteristics rather than a change in the population's character strengths. In any case, hope and gratitude seem to be strengths that can be helpful in difficult times and thus may be inclined to increase during or following turbulence.

The present study's findings reveal more pronounced increases in character strengths than those found by Gander & Wagner (2021), in the only other study about character strengths change during the pandemic. Gander & Wagner (2021) surveyed a sample of 366 Europeans and reported a significant increase only in two character strengths (humility and prudence) during COVID-19. The more evident increases in the present study may be related to the larger sample size in the present study, suggesting that the findings should be regarded with caution, especially as effect sizes were not large. The difference between the findings of the two studies may also be related to the timing of the first assessment – which was much broader in Gander & Wagner's (2021) study (7.2018–12.2019) than in the present study (6.2019–1.2020)– possibly enlarging the between subjects variance. Another possibility is that the different results are related to the different characteristics of the samples in the studies, comprising different cultural characteristics, or to specific challenges of the pandemic and the mandated regulations to constrain its spread in different countries in the summer of 2020. This idea is supported by the fact that only one of the two strengths that significantly increased in Gander and Wagner's (2021) study also increased in the present study (i.e., prudence).

The present study also examined associations related to COVID-19's impact on character strengths changes. The only significant (yet negligible) effects of COVID-19's impact on strengths scores were for curiosity, forgiveness, and kindness. COVID-19's impact patterns differed for the three strengths: Forgiveness was enhanced among participants who experienced a moderate impact of COVID-19, curiosity increased primarily among participants who experienced low levels of COVID-19 impact, whereas kindness increased among participants who experienced low or moderate levels of COVID-19 impact (see the plots in Fig. 1, in the supplementary material). However, the effect sizes for these effects were negligible (i.e., $\eta^2 < 0.01$).

We surmise that the nonsignificant associations of the level of COVID-19's impact with character strengths changes may have derived from methodological limitations: the level of impact was assessed by a single question, generally phrased, which may have been understood equivocally. When we asked participants about the extent to which COVID-19 has impacted their lives, they may have related to the direct effects of the disease, to the more general effects of the crisis, or to the direct and indirect effects of the prolonged changes. Alternatively, unlike personal trauma and hardship, the broad impact of COVID-19 on multiple aspects of individuals' lives may have caused a general effect unrelated to differences in subjectively perceived difficulty levels.

This interpretation aligns with Gander & Wagner (2021), who used a more detailed measure to assess the effects of COVID-19 on individuals. Their index comprised 20 crisis-related changes that participants may have experienced. Even with Gander and Wagner's (2021) robust measure, the change in character strengths during the pandemic was affected by the level of COVID-19 impact on the individual only in a single strength—honesty. These findings also align with Peterson & Seligman (2003) concerning the change in prevalence of character strengths after September 11, in which the changes following the terrorist

attack were not related to populations with specific demographics (gender, marital status, color).

The present study further examined the effects of individuals' perceived social support on changes in their character strengths during the pandemic. The current findings showed a significant but small effect of perceived social support on changes in character strengths, suggesting that perceived social support fostered an increase in self-reported character strengths during COVID-19. Furthermore, when social support was entered to the equation as a between-subject factor, the main effect of time became non-significant, suggesting that perceived social support may account for a notable portion of the increase in character strengths during the pandemic. Previous findings have suggested that receiving social support not only fosters strengths use (Clifton & Harter, 2003; Harter & Schmidt, 2002; Lavy et al., 2014), but it may be one of the factors facilitating growth during and following trauma (Calhoun et al., 2010; Joseph & Linley, 2005; Park, 2010; Tedeschi & Calhoun, 2004). Thus, we expected even stronger effects of perceived social support on the development of character strengths during COVID-19.

The results revealed significant (but small) interactions between perceived social support and changes in 11 character strengths relating to all six virtues: the three temperance strengths (forgiveness, humility, and prudence), two strengths relating to wisdom and knowledge (curiosity and judgment), two transcendence strengths (hope and gratitude), two strengths of courage (honesty and zest), one justice strength (leadership), and one humanity strength (love). These strengths showed larger increases (yet with small interaction effect sizes; $0.022 < \eta^2 < 0.034$) among those reporting higher levels of social support (see Fig. 2, in the supplementary material). The contribution of perceived social support to the development of strengths that relate to interpersonal relationships and broader social interactions (i.e., love, leadership, forgiveness, humility, and honesty) makes sense. Such support may increase individuals' faith in these social attributes during COVID-19 and encourage them to apply them when handling the crisis.

Furthermore, in the COVID-19 crisis, temperance was often linked to caring for others, such as adhering to regulations and helping others stay healthy. Thus, it is reasonable to suggest that sensing a connection with others elicited the use of temperance strengths at this time. The contribution of perceived social support to the development of transcendence strengths (i.e., hope and gratitude) during the pandemic may be related to helping individuals acknowledge abilities that would help them successfully cope with the pandemic's challenges. This explanation may also apply to the increase in zest, as it has been suggested that one of the factors impacting individuals' sense of vitality (being zestful and enthusiastic) is the social support they sense (Peterson & Seligman, 2004, p. 286).

We did not anticipate social support to enhance cognitive competencies, making the revealed link between social support and the increased cognitive strengths (i.e., curiosity and judgment) anomalous. To explain this finding, we may consider that individuals with close connections and relatively high social support may also be more inquisitive and thus more engaged in discussions involving critical thinking concerning precautions that were (or not) taken, thus fostering their curiosity and judgment. However, the relatively small effects of social support on enhancing specific character strengths may merely reflect the general contribution of support from others to the emergence of personal strengths during a crisis, as suggested in the literature (Rajandram et al., 2011).

4.1 Conclusions and Implications

COVID-19 enabled a longitudinal examination of the effects of a large-scale crisis on the development of character strengths. The current findings revealed a significant, albeit moderated ($\eta^2=0.094$) overall increase in character strengths during COVID-19. There were significant increases in 17 of the 24 character strengths, with small effect sizes of the increases in nine of these strengths— appreciation of beauty and excellence, bravery, prudence, creativity, curiosity, gratitude, hope, judgment, and perspective — (the increases in the other eight character strengths had negligible effect sizes). There was no decline in any character strength during the pandemic.

Overall, the findings suggest that increases in character strengths during this crisis were smaller than could have been expected, based on the PTG and character strengths literatures. We surmise that whereas there may have been a general trend of strengths development during COVID-19, the changes were relatively moderate or difficult to detect during the first phase of the pandemic. These small effects may be related to the relatively short interval between the beginning of the COVID-19 crisis in the US (in March 2020) and the time of measurement (May-June 2020), not allowing much time to develop their strengths (e.g., Schueller et al., 2015). Alternatively, the findings may also reflect a weak change, irrespective of the time frame. In addition, it is not clear whether the recorded changes in character strengths will be maintained over time or merely reflect an ad-hoc response to the pandemic.

The fact that only small/moderate changes were revealed in this large sample during this major world crisis suggests the need for further examination of changes in character strengths (along with other aspects of growth) in turbulent times in longitudinal, large-scale studies. Such studies (like this one) may provide different findings from those obtained in retrospective or cross-sectional sequential studies, and shed light on characteristics and paths of growth processes.

The overall small increase in character strengths suggests that turbulent times may promote some development of character strengths. These enhanced character strengths may strengthen the foundations of well-being and resilience, as character strengths have been shown to predict increased post-traumatic growth and mental health during COVID-19 (Casali et al., 2021b). The small effect sizes suggest that this increase in character strengths may not be as prevalent as expected. Furthermore, different factors related to the person and the environment may impact the extent of these increases, hindering or boosting such growth. In this context, hope appears to be a critical strength, needed and developed more in such times. Social support seemed to amplify the mild increase in character strengths, somewhat supporting arguments about its role in fostering personal growth in turbulent times (e.g., Feeney & Collins 2015). However, the small effect sizes of perceived social support's impact on changes in character strengths suggest that other factors may also be at play.

Unlike sequential, retrospective, or cross-sectional studies that examined character strengths development following adversity (e.g., Peterson & Seligman 2003; Peterson et al., 2008), the present longitudinal study offers an exceptional opportunity for the longitudinal assessment of changes in character strengths during a global crisis. Thus, the current study's contribution to the literature is significant for personality development as well as for PTG (Joseph & Linley, 2005; Park, 2010; Tedeschi & Calhoun, 2004). The current study is among the few longitudinal studies to assess character strengths development (e.g., Gander & Wagner 2021) and is perhaps the only one with such a large sample in a time of crisis.

Moreover, it is among the few longitudinal studies to examine the fundamental proposition that character strengths can be developed (Peterson & Seligman, 2004).

4.2 Study Limitations

The study's findings should be considered within its methodological limitations: The study is based on self-report measures, reflecting individuals' biased, subjective perceptions of themselves and their environment. Such measures may also suffer from social desirability effects. Furthermore, the specific measure used in this study to assess character strengths has some methodological limitations, such as cross-loadings and intercorrelations between strengths and unclear connection to the theoretical framework of virtues (e.g., Feraco et al., 2021; Ng et al., 2017). In addition, this study's participants were primarily women who have unique characteristics (different from those of men) regarding character strengths and their correlations with well-being (e.g., Brdar et al., 2011; Littman-Ovadia & Lavy, 2012). The sample also comprised a self-selected pool of individuals motivated by their desire to discover their own strengths to improve their lives, and who were also willing to complete the survey again when invited. This comprises the small percentage of the participants who received an invitation to participate in the study – and chose to do so and complete the character strength measure again. Thus, they may not be representative of the general population, perhaps having unique characteristics, such as different character strengths.

Furthermore, participants who felt they were not coping successfully with the crisis or were discouraged may have been less inclined to participate. This self-selection may influence the study's implication and interpretations. Thus, the findings primarily reflect the dynamics of specific individuals with a relatively high interest in character strengths during the pandemic. Thus, this population is relatively more aware of their strengths and may not reflect the general population.

Supplementary Information The online version contains supplementary material available at <https://doi.org/10.1007/s10902-022-00575-6>.

Acknowledgements The authors would like to thank the VIA Institute on Character for their assistance in data collection and their generous sharing of the data.

Data Availability The data was provided by the VIA Institute on Character, as described in the manuscript. The data can be made available upon reasonable request from the VIA Institute on Character.

Declarations

The authors declare that they have no conflict of interests and that the research was carried out in accordance with the Declaration of Helsinki and was approved by the Ethics Committee of the Faculty of Education at the University of Haifa, Israel.

References

- Baiano, C., Zappullo, I., & Conson, M. (2020). Tendency to worry and fear of mental health during Italy's COVID-19 lockdown. *International Journal of Environmental Research and Public Health*, 17(16), 5928. <https://doi.org/10.3390/ijerph17165928>

- Baker, J. C., Williams, J. K., Witvliet, C. V., & Hill, P. C. (2017). Positive reappraisals after an offense: Event-related potentials and emotional effects of benefit-finding and compassion. *The Journal of Positive Psychology, 12*(4), 373–384. <https://doi.org/10.1080/17439760.2016.1209540>
- Baumann, D., Ruch, W., Margelisch, K., Gander, F., & Wagner, L. (2020). Character strengths and life satisfaction in later life: An analysis of different living conditions. *Applied Research in Quality of Life, 15*, 329–347. <https://doi.org/10.1007/s11482-018-9689-x>
- Berger, R., & Weiss, T. (2006). Posttraumatic growth in Latina immigrants. *Journal of Immigrant & Refugee Studies, 4*(3), 55–72. https://doi.org/10.1300/J500v04n03_03
- Boe, O. (2016). Building resilience: The role of character strengths in the selection and education of military leaders. *International Journal of Emergency Mental Health and Human Resilience, 17*(4), 714–716. <https://doi.org/10.4172/1522-4821.1000301>
- Brdar, I., Anić, P., & Rijavec, M. (2011). Character strengths and well-being: Are there gender differences?. *The human pursuit of well-being* (pp. 145–156). Dordrecht: Springer. https://doi.org/10.1007/978-94-007-1375-8_13
- Bruna, M. O., Brabete, A. C., & Izquierdo, J. M. A. (2019). Reliability generalization as a seal of quality of substantive meta-analyses: the case of the VIA Inventory of Strengths (VIA-IS) and their relationships to life satisfaction. *Psychological Reports, 122*(3), 1167–1188. <https://doi.org/10.1177/0033294118779198>
- Calhoun, L. G., Cann, A., & Tedeschi, R. G. (2010). The posttraumatic growth model: Sociocultural considerations. In T. Weiss, & R. Berger (Eds.), *Posttraumatic growth and culturally competent practice: lessons learned from around the globe* (pp. 1–14). Hoboken, New Jersey: Wiley & Sons Inc
- Cao, W., Fang, Z., Hou, G., Han, M., Xu, X., Dong, J., & Zheng, J. (2020). The psychological impact of the COVID-19 epidemic on college students in China. *Psychiatry Research, 287*, 112934. <https://doi.org/10.1016/j.psychres.2020.112934>
- Casali, N., Feraco, T., Ghisi, M., & Meneghetti, C. (2021a). “Andrà tutto bene”: Associations between character strengths, psychological distress and self-efficacy during Covid-19 lockdown. *Journal of Happiness Studies, 22*(5), 2255–2274. <https://doi.org/10.1007/s10902-020-00321-w>
- Casali, N., Feraco, T., & Meneghetti, C. (2021b). Character strengths sustain mental health and post-traumatic growth during the COVID-19 pandemic. A longitudinal analysis. *Psychology & Health, 1*–17. <https://doi.org/10.1080/08870446.2021.1952587>
- Duan, W., & Guo, P. (2015). Association between virtues and posttraumatic growth: Preliminary evidence from a Chinese community sample after earthquakes. *PeerJ Life and Environment, 3*, e883. <https://doi.org/10.7717/peerj.883>
- Dubreuil, P., Forest, J., & Courcy, F. (2014). From strengths use to work performance: The role of harmonious passion, subjective vitality, and concentration. *The Journal of Positive Psychology, 9*(4), 335–349. <https://doi.org/10.1080/17439760.2014.898318>
- Eisenberger, R., Stinglhamber, F., Vandenberghe, C., Sucharski, I. L., & Rhoades, L. (2002). Perceived supervisor support: Contributions to perceived organizational support and employee retention. *Journal of Applied Psychology, 87*(3), 565–573. <https://doi.org/10.1037//0021-9010.87.3.565>
- Feeney, B. C., & Collins, N. L. (2015). A new look at social support: A theoretical perspective on thriving through relationships. *Personality and Social Psychology Review, 19*(2), 113–147. <https://doi.org/10.1177/1088868314544222>
- Feraco, T., Casali, N., & Meneghetti, C. (2021). Do strengths converge into virtues? An item-, virtue-, and scale-level analysis of the Italian Values in Action Inventory of Strengths-120. *Journal of Personality Assessment, 1*–13. <https://doi.org/10.1080/00223891.2021.1934481>
- Fernandes, N. (2020). Economic effects of coronavirus outbreak (COVID-19) on the world economy (pre-print). <https://ssrn.com/abstract=3557504>
- Forest, J., Mageau, G. A., Crevier-Braud, L., Bergeron, E., Dubreuil, P., & Lavigne, G. L. (2012). Harmonious passion as an explanation of the relation between signature strengths' use and well-being at work: Test of an intervention program. *Human Relations, 65*(9), 1233–1252. <https://doi.org/10.1177/0018726711433134>
- Frankl, V. E. (1985). *Man's search for meaning*. Simon and Schuster
- Frazier, P., Tennen, H., Gavian, M., Park, C., Tomich, P., & Tashiro, T. (2009). Does self-reported post-traumatic growth reflect genuine positive change? *Psychological Science, 20*(7), 912–919. <https://doi.org/10.1111/j.1467-9280.2009.02381.x>. <https://journals.sagepub.com/doi/>
- Gander, F., Hofmann, J., Proyer, R. T., & Ruch, W. (2020). Character strengths – stability, change, and relationships with well-being changes. *Applied Research in Quality of Life, 15*(2), 349–367. <https://doi.org/10.1007/s11482-018-9690-4>
- Gander, F., & Wagner, L. (2021). Character growth following collective life events: A study on perceived and measured changes in character strengths during the first wave of the COVID-19 pandemic. *European Journal of Personality, 35*(10), 1–12. <https://doi.org/10.1002/per.2021>

- Harzer, C., & Ruch, W. (2013). The application of signature character strengths and positive experiences at work. *Journal of Happiness Studies*, 14(3), 965–983. <https://doi.org/10.1007/s10902-012-9364-0>
- Harzer, C., & Ruch, W. (2012). When the job is a calling: The role of applying one's signature strengths at work. *Journal of Positive Psychology*, 7(5), 362–371. <https://doi.org/10.1080/17439760.2012.702784>
- Jayawickreme, E., Infurna, F. J., Alajak, K., Blackie, L. E., Chopik, W. J., Chung, J. M., & Zonneveld, R. (2021). Post-traumatic growth as positive personality change: Challenges, opportunities, and recommendations. *Journal of personality*, 89(1), 145–165. <https://doi.org/10.1111/jopy.12591>
- Jayawickreme, E., & Zachry, C. E. (2018). Positive personality change following adversity. In V. Zeigler-Hill & T. K. Shackelford (Eds.), *The SAGE handbook of personality and individual differences: Origins of personality and individual differences* (pp. 450–464). Sage Reference. <https://doi.org/10.4135/9781526451200.n24>
- Jiang, D. H., & McCoy, R. G. (2020). Planning for the post-COVID syndrome: how payers can mitigate long-term complications of the pandemic. *Journal of General Internal Medicine*, 35(10), 3036–3039. <https://doi.org/10.1007/s11606-020-06042-3>
- Joseph, S., & Linley, P. A. (2005). Positive adjustment to threatening events: An organismic valuing theory of growth through trauma. *Review of General Psychology*, 9(3), 262–280. <https://doi.org/10.1037/1089-2680.9.3.262>
- Krentzman, A. R. (2013). Review of the application of positive psychology to substance use, addiction, and recovery research. *Psychology of Addictive Behaviors*, 27(1), 151. <https://doi.org/10.1037/a0029897>
- Labrague, L. J., & De los Santos, J. A. A. (2020). COVID-19 anxiety among front-line nurses: Predictive role of organisational support, personal resilience and social support. *Journal of Nursing Management*, 28(7), 1653–1661. <https://doi.org/10.1111/jonm.13121>
- Lamade, R. V., Jayawickreme, E., Blackie, L. E., & McGrath, R. E. (2020). Are sequential sample designs useful for examining post-traumatic changes in character strengths? *The Journal of Positive Psychology*, 15(3), 292–299. <https://doi.org/10.1080/17439760.2019.1610481>
- Lavy, S., & Benish-Weisman, M. (2021). Character strengths as “Values in Action”: Linking character strengths with Values Theory—an exploratory study of the case of gratitude and self-transcendence. *Frontiers in Psychology*, 12. <https://doi.org/10.3389/fpsyg.2021.576189>
- Lavy, S., Littman-Ovadia, H., & Bareli, Y. (2014). Strengths deployment as a mood-repair mechanism: Evidence from a diary study with a relationship exercise group. *The Journal of Positive Psychology*, 9(6), 547–558. <https://doi.org/10.1080/17439760.2014.936963>
- Lavy, S., Littman-Ovadia, H., & Bareli, Y. (2016). My better half: Strengths endorsement and deployment in married couples. *Journal of Family Issues*, 37(12), 1730–1745. <https://doi.org/10.1177/0192513X14550365>
- Lavy, S., & Littman-Ovadia, H. (2017). My better self: Using strengths at work and work productivity, organizational citizenship behavior, and satisfaction. *Journal of Career Development*, 44(2), 95–109. <https://doi.org/10.1177/0894845316634056>
- Lavy, S., Littman-Ovadia, H., & Boiman-Meshita, M. (2017). The wind beneath my wings: Effects of social support on daily use of character strengths at work. *Journal of Career Assessment*, 25(4), 703–714. <https://doi.org/10.1177/1069072716665861>
- Lee, M., & You, M. (2020). Psychological and behavioral responses in South Korea during the early stages of coronavirus disease 2019 (COVID-19). *International Journal of Environmental Research and Public Health*, 17(9), 2977. <https://doi.org/10.3390/ijerph17092977>
- Littman-Ovadia, H., & Lavy, S. (2012). Differential ratings and associations with well-being of character strengths in two communities. *Health Sociology Review*, 21(3), 299–312. <https://doi.org/10.5172/hesr.2012.21.3.299>
- Loving, T. J., & Slatcher, R. B. (2013). Romantic relationships and health. In J. A. Simpson, & L. Campbell (Eds.), *Oxford library of psychology. The Oxford handbook of close relationships* (pp. 617–637). Oxford University Press
- Luchman, J. N., & González-Morales, M. G. (2013). Demands, control, and support: A meta-analytic review of workcharacteristics interrelationships. *Journal of Occupational Health Psychology*, 18(1), 37. <https://doi.org/10.1037/a0030541>
- Martínez-Martí, M. L., & Ruch, W. (2014). Character strengths and well-being across the life span: Data from a representative sample of German-speaking adults living in Switzerland. *Frontiers in Psychology*, 5, 1253. <https://doi.org/10.3389/fpsyg.2014.01253>
- Martínez-Martí, M. L., & Ruch, W. (2017). Character strengths predict resilience over and above positive affect, self-efficacy, optimism, social support, self-esteem, and life satisfaction. *The Journal of Positive Psychology*, 12(2), 110–119. <https://doi.org/10.1080/17439760.2016.1163403>
- McKibbin, W., & Fernando, R. (2021). The global macroeconomic impacts of COVID-19: Seven scenarios. *Asian Economic Papers*, 20(2): 1–30. https://doi.org/10.1162/asep_a_00796

- McGrath, R. E. (2019). The VIA Assessment Suite for Adults: Development and initial evaluation, revised edition. *Cincinnati, OH: VIA Institute on Character*
- Minhas, G. (2010). Developing realised and unrealised strengths: Implications for engagement, self-esteem, life satisfaction and well-being. *Assessment and Development Matters*, 2(1), 12
- Ng, V., Cao, M., Marsh, H. W., Tay, L., & Seligman, M. E. (2017). The factor structure of the Values in Action Inventory of Strengths (VIA-IS): An item-level exploratory structural equation modeling (ESEM) bifactor analysis. *Psychological assessment*, 29(8), 1053. <https://doi.org/10.1037/pas0000396>
- Nicola, M., Alsafi, Z., Sohrabi, C., Kerwan, A., Al-Jabir, A., Iosifidis, C., & Agha, R. (2020). The socio-economic implications of the coronavirus pandemic (COVID-19): A review. *International Journal of Surgery (London England)*, 78, 185–193. <https://doi.org/10.1016/j.ijso.2020.04.018>
- Niemiec, R. M. (2017). *Character strengths interventions: A field guide for practitioners*. Hogrefe Publishing
- Niemiec, R. M. (2013). VIA character strengths: Research and practice (the first 10 years). In Knoop, H. H., & Delle Fave, A. (Eds.) *Well-Being and Cultures (pp.11–29)*. Springer Netherlands
- OECD (2021, April). *Unemployment Rate (indicator)*. <https://data.oecd.org/unemp/unemployment-rate.htm>
- Park, N. (2009). Building strengths of character: Keys to positive youth development. *Reclaiming Children and Youth*, 18(2), 42–47
- Park, N. (2004). Character strengths and positive youth development. *The Annals of the American Academy of Political and Social Science*, 591(1), 40–54. <https://doi.org/10.1177/0002716203260079>
- Park, C. L. (2010). Making sense of the meaning literature: An integrative review of meaning making and its effects on adjustment to stressful life events. *Psychological Bulletin*, 136(2), 257–301. <https://doi.org/10.1037/a0018301>
- Park, N., & Peterson, C. (2006a). Moral competence and character strengths among adolescents: The development and validation of the values in action inventory of strengths for youth. *Journal of Adolescence*, 29(6), 891–909. <https://doi.org/10.1016/j.adolescence.2006.04.011>
- Park, N., & Peterson, C. (2006b). Character strengths and happiness among young children: Content analysis of parental descriptions. *Journal of Happiness Studies*, 7(3), 323–341. <https://doi.org/10.1007/s10902-005-3648-6>
- Park, N., & Peterson, C. (2008). Positive psychology and character strengths: Application to strengths-based school counseling. *Professional School Counseling*, 12(2), 85–92. <https://doi.org/10.5330/PSC.n.2010-12.85>
- Park, N., & Peterson, C. (2009). Strengths of character in schools. In Furlong, M. J., Gilman, R., & Huebner, E. S. (Eds.). *Handbook of positive psychology in schools*, Routledge, pp. 65–76
- Peterson, C., Park, N., Pole, N., D'Andrea, W., & Seligman, M. E. (2008). Strengths of character and post-traumatic growth. *Journal of Traumatic Stress*, 21(2), 214–217. <https://doi.org/10.1002/jts.20332>
- Peterson, C., & Seligman, M. E. P. (2004). *Character strengths and virtues: A handbook and classification*. Washington, DC: American Psychological Association
- Peterson, C., & Seligman, M. E. (2003). Character strengths before and after September 11. *Psychological Science*, 14(4), 381–384. <https://doi.org/10.1111/1467-9280.24482>
- Peterson, C., Park, N., & Seligman, M. E. (2006). Greater strengths of character and recovery from illness. *The Journal of Positive Psychology*, 1(1), 17–26. <https://doi.org/10.1080/17439760500372739>
- Proyer, R. T., Gander, F., Wellenzohn, S., & Ruch, W. (2014). The European Football Championship as a positive festivity: Changes in strengths of character before, during, and after the Euro 2008 in Switzerland. In H. A. Marujo & L. M. Neto (Eds.), *Positive nations and communities* (pp. 119–134). Springer Netherlands. https://doi.org/10.1007/978-94-007-6869-7_7
- Quoidbach, J., Mikolajczak, M., & Gross, J. J. (2015). Positive interventions: An emotion regulation perspective. *Psychological Bulletin*, 141(3), 655. <https://doi.org/10.1037/a0038648>
- Rajandram, R. K., Jenewein, J., McGrath, C., & Zwahlen, R. A. (2011). Coping processes relevant to post-traumatic growth: An evidence-based review. *Supportive Care in Cancer*, 19(5), 583–589. <https://doi.org/10.1007/s00520-011-1105-0>
- Rashid, T., & McGrath, R. (2020). Strengths-based actions to enhance wellbeing in the time of COVID-19. *International Journal of Wellbeing*, 10(4), 113–132. <https://doi.org/10.5502/ijw.v10i4.1441>
- Rutter, M. (2012). Resilience as a dynamic concept. *Development and Psychopathology*, 24(2), 335–344. <https://doi.org/10.1017/S0954579412000028>
- Schneider, B. A., Avivi-Reich, M., & Mozuraitis, M. (2015). A cautionary note on the use of the Analysis of Covariance (ANCOVA) in classification designs with and without within-subject factors. *Frontiers in psychology*, 6, 474. <https://doi.org/10.3389/fpsyg.2015.00474>
- Schroevers, M. J., Helgeson, V. S., Sanderman, R., & Ranchor, A. V. (2010). Type of social support matters for prediction of posttraumatic growth among cancer survivors. *Psycho-Oncology*, 19(1), 46–53. <https://doi.org/10.1002/pon.1501>

- Schueller, S. M., Jayawickreme, E., Blackie, L. E., Forgeard, M. J., & Roepke, A. M. (2015). Finding character strengths through loss: An extension of Peterson and Seligman (2003). *The Journal of Positive Psychology, 10*(1), 53–63. <https://doi.org/10.1080/17439760.2014.920405>
- Seery, M. D., Leo, R. J., Holman, E. A., & Silver, R. C. (2010). Lifetime exposure to adversity predicts functional impairment and healthcare utilization among individuals with chronic back pain. *Pain, 150*(3), 507–515. <https://doi.org/10.1016/j.pain.2010.06.007>
- Serafini, G., Parmigiani, B., Amerio, A., Aguglia, A., Sher, L., & Amore, M. (2020). The psychological impact of COVID-19 on the mental health in the general population. *QJM: An International Journal of Medicine, 113*(8), 531–537. <https://doi.org/10.1093/qjmed/hcaa201>
- Shoshani, A., & Slone, M. (2016). The resilience function of character strengths in the face of war and protracted conflict. *Frontiers in Psychology, 6*, 2006. <https://doi.org/10.3389/fpsyg.2015.02006>
- Smith, M. R. (2011). *The relationship between character strengths and work satisfaction*. Unpublished doctoral dissertation, Massachusetts School of Professional Psychology, Newton, MA
- Tedeschi, R. G., & Calhoun, L. G. (1996). The Posttraumatic Growth Inventory: Measuring the positive legacy of trauma. *Journal of Traumatic Stress, 9*(3), 455–471. <https://doi.org/10.1007/BF02103658>
- Tedeschi, R. G., & Calhoun, L. G. (2004). " Posttraumatic growth: Conceptual foundations and empirical evidence". *Psychological Inquiry, 15*(1), 1–18. https://doi.org/10.1207/s15327965pli1501_01
- Thurackal, J. T., Corveleyn, J., & Dezutter, J. (2016). Spiritual Development and Gratitude Among Indian Emerging Adults. *Archive for the Psychology of Religion, 38*(1), 72–88. <https://doi.org/10.1163/15736121-12341315>
- Turner, R. J., & Brown, R. L. (2010). Social support and mental health. In T. Scheid, & T. Brown (Eds.), *A handbook for the study of mental health: Social contexts, theories, and systems* (pp. 200–212). New York, NY: Cambridge University Press
- Uliaszek, A. A., Rashid, T., Williams, G. E., & Gulamani, T. (2016). Group therapy for university students: A randomized control trial of dialectical behavior therapy and positive psychotherapy. *Behaviour Research and Therapy, 77*, 78–85. <https://doi.org/10.1016/j.brat.2015.12.003>
- Umucu, E., Tansey, T. N., Brooks, J., & Lee, B. (2020). The protective role of character strengths in COVID-19 stress and well-being in individuals with chronic conditions and disabilities: An exploratory study. *Rehabilitation Counseling Bulletin, 64*(2), 67–74. <https://doi.org/10.1177/0034355220967093>
- UNESCO. *Global Education Coalition: COVID-19 Education Response*. <https://en.unesco.org/covid19/educationresponse/globalcoalition>
- Usher, K., Durkin, J., & Bhullar, N. (2020). The COVID-19 pandemic and mental health impacts. *International Journal of Mental Health Nursing, 29*(3), 315–318. <https://doi.org/10.1111/inm.12726>
- Vohs, K. O., & Finkel, E. J. (Eds.). (2011). (Eds.). *Self and relationships: Connecting intrapersonal and interpersonal processes*. New York: Guilford Press
- Wang, C., Pan, R., Wan, X., Tan, Y., Xu, L., Ho, C. S., & Ho, R. C. (2020). Immediate psychological responses and associated factors during the initial stage of the 2019 coronavirus disease (COVID-19) epidemic among the general population in China. *International Journal of Environmental Research and Public Health, 17*(5), 1729. <https://doi.org/10.3390/ijerph17051729>
- Wood, A. M., Froh, J. J., & Geraghty, A. W. (2010). Gratitude and well-being: A review and theoretical integration. *Clinical Psychology Review, 30*(7), 890–905. <https://doi.org/10.1016/j.cpr.2010.03.005>
- World Health Organization (2021, June). *WHO Coronavirus (COVID-19) Dashboard*. <https://covid19.who.int/>
- Xiao, H., Zhang, Y., Kong, D., Li, S., & Yang, N. (2020). The effects of social support on sleep quality of medical staff treating patients with coronavirus disease 2019 (COVID-19) in January and February 2020 in China. *Medical science monitor: International Medical Journal of Experimental and Clinical Research, 26*, e923549–e923541. <https://doi.org/10.12659/MSM.923549>
- Zeligman, M., Barden, S. M., & Hagedorn, W. B. (2016). Posttraumatic growth and HIV: A study on associations of stigma and social support. *Journal of Counseling & Development, 94*(2), 141–149. <https://doi.org/10.1002/jcad.12071>
- Zimet, G. D., Dahlem, N. W., Zimet, S. G., & Farley, G. K. (1988). The multidimensional scale of perceived social support. *Journal of Personality Assessment, 52*(1), 30–41. https://doi.org/10.1207/s15327752jpa5201_2

Publisher's Note Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.

Springer Nature or its licensor holds exclusive rights to this article under a publishing agreement with the author(s) or other rightsholder(s); author self-archiving of the accepted manuscript version of this article is solely governed by the terms of such publishing agreement and applicable law.