

Personality and Social Psychology

Investigating the susceptibility to change of coping and resiliency during COVID-19

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On 11 March 2020 the World Health Organization (WHO) declared the outbreak of the novel coronavirus SARS-CoV-2 (COVID-19) a global pandemic. As a result, most of public life, including cultural, sporting, religious and political events, came to a standstill. The current study investigates potential changes in individual's coping and resiliency during this phase of the pandemic. The present study investigated potential changes in individuals' coping and resilience during the COVID-19 pandemic. Participants ($N = 68$), aged between 18 and 34 years old, completed an online survey including the Brief-COPE (Coping Orientation to Problems Experienced) and the SPF-24 (Scale of Protective Factors) at two distinct time points: May 2019 (T_0) and May 2020 (T_1). To investigate changes between T_0 and T_1 , one-way within-subjects analysis of variances (ANOVAs)'s were conducted. For 11 of 14 the subscales for the Brief-COPE, no significant within-subject sum scores changes were revealed. However, for three subscales, that is, Active Coping ($p = 0.005$), Venting ($p = 0.024$) and Acceptance ($p = 0.028$), significant sum scores changes were revealed. For all four subscales for the SPF-24, no significant within-subjects sum score changes were revealed. For the Brief-COPE, the susceptibility to change for only three of the 14 coping strategies to be significantly influenced by COVID-19, reveals a strong trait-like character of one's coping strategies. For the SPF-24, all four protective factors were not susceptible to significant changes due to individuals' experiences of COVID-19.

Key words: Coping, resilience, COPE, SPF, COVID-19.

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INTRODUCTION

On 11 March 2020 the World Health Organization (WHO) declared the outbreak of the novel coronavirus SARS-CoV-2 (COVID-19) a global pandemic. The outbreak is regarded as a global public health emergency with multifaceted and severe consequences for people's lives and their mental health. Most of public life, including cultural, sporting, religious, and political events, has come to a standstill (Nicola *et al.*, 2020). Daycare, schools, universities, and colleges have been closed either on a nationwide or local level (Viner *et al.*, 2020). Social and economic disruptions are present on a local, national and global scale, resulting in the largest global recession since the Great Depression (WHO, 2020).

A general population survey, done by Ipsos MORI (27 May 2020), revealed widespread concerns regarding COVID-19 in terms of potential increases in anxiety, depression, stress, and other negative emotions (Ipsos MORI, 2020). Additionally, physical distancing and social isolation, two key characteristics of this pandemic, have added to this situation, hindering our natural ability to cope and maintain a resilient posture in times of crises. Especially, elongated home confinement was reported to be a risk factor for PTSD symptoms (Wang, Chudzicka-Czupala, Grabowski *et al.*, 2020). Equally, four major negative mental health symptoms (depression, anxiety, insomnia, acute stress) have been identified as being related to COVID-19 (Shi, Lu, Que *et al.*, 2020). Xiong, Lipsitz, Nasri *et al.* (2020, p. 55) report that the "COVID-19 pandemic is associated with highly significant levels of psychological distress that, in many cases, would meet the threshold for clinical relevance."

Having said this, if we are hindered in our ability to "come together," either physically or socially, to share distress or help others in our community, this could shape our psychological

response to this pandemic (Holmes, O'Connor, Perry *et al.*, 2020). Understanding how individuals cope and maintain a resilient posture during COVID-19 will add to our realization about an individual's specific psychological responses that such a pandemic could elicit.

Moreover, the stability of one's "psychological response" in terms of coping and maintaining a resilient posture and whether these are susceptible to changes should be investigated for changes over time. Specifically, the abovementioned stability can be characterized as absolute stability; the extent to which a score changes over time (i.e. T_0 - T_1) (Luminet, Bagby & Taylor, 2001). Conceptually distinct is the notion of relative stability; the extent to which relative differences among individuals remain stable. Absolute stability can, for example, be demonstrated by the use of mean score testing. Relative stability can be demonstrated through the use of measures of covariation. However, finding an absolute change does not preclude that that measure is not relatively stable (Santor, Bagby & Joffe, 1997) over time.

Coping refers to the set of cognitive and behavioral strategies one uses to manage the demands of stressful situations (Folkman, 2013). In other words, coping is about how we deal with or overcome problems and difficulties. Over time, many distinctions have been made to distinguish, categorize or group different coping responses (Skinner, Edge, Altman & Sherwood, 2003), such as problem- versus emotion-focused coping or engagement versus disengagement coping (see detailed reviews by Compas, Connor-Smith, Saltzman, Thomsen & Wadsworth, 2001; and Skinner *et al.*, 2003). Well-known coping strategies include seeking social or emotional support, problem-solving, planning, avoidance, denial, distraction, rumination, and acceptance.

Resilience is typically defined as the capacity of a dynamic system to withstand or recover from significant challenges that threaten its stability, viability, or development (Masten, 2001). In other words, resilience refers to our ability to bounce back from negative emotional experiences and adapt to the changing demands of stressful experiences (Block & Kremen, 1996). It is often conceptualized as one end of a continuum with vulnerability, implying a resistance – though not total invulnerability – to psychopathology (Ingram & Price, 2010). A wide range of protective factors, like developmental and psychosocial factors, genetic, epigenetic, and neurochemical factors, have been identified that can facilitate the capacity for adaptation and “bouncing back” in the face of adversity (Ahern, Kiehl, Sole & Byers, 2006; Beckwith, Dickinson & Kendall, 2008; Connor & Davidson, 2003; Fergus & Zimmerman, 2005; Masten, Cutuli, Herbers & Reed, 2009; Windle, Bennett & Noyes, 2011; Wu, Feder, Cohen *et al.*, 2013).

Most research on coping and resilience is related to how we tackle everyday events and/or everyday life. However, some researchers have also investigated the importance of coping and resilience in relation to serious life events or extreme circumstances. Lee-Baggley, DeLongis, Voorhoeve and Greenglass (2004) examined the extent to which coping styles could predict health behaviors and the psychological impact of severe acute respiratory syndrome (SARS). In this study, wishful thinking and empathic responding were reported to significantly predict health behaviors in participants. Following the earthquake in L'Aquila, Italy, on 6 April 2009, Stratta, Capanna, Dell'Osso *et al.* (2015) investigated to what extent coping and resilience would predict trauma symptomatology. Results indicated that resilience directly affected PTSD symptomatology – and that this relationship was partially mediated by differences in coping styles. Along those lines, Hooberman, Rosenfeld, Rasmussen and Keller (2010) investigated the importance of coping and resiliency for PTSD symptom severity in torture survivors. Again, these results suggest that the relationship between resilience and PTSD differs depending on the individual's coping style. More recently, Scheenen, van der Horn, de Koning, van der Naalt and Spikman (2017) investigated the stability of different coping styles over one year following mild traumatic brain injury (mTBI). Most coping styles showed a decrease over time, except for positive reframing which fluctuated over time, and passive coping which was found to stabilize over time. In line with that, previous research by Miller and Mittenberg (1998) and Snell, Siegert, Hay-Smith and Surgenor (2011) suggests that interventions aimed at tackling inadequate coping styles or limited resilience can have a great influence on the development and persistence of complaints in the context of mTBI.

If coping and resilience are susceptible to change due to the context of serious life events or extreme circumstances, what potential implications does that have for the structure and stability of these concepts? Coping is thought to be dependent upon individual characteristics and situational aspects, as such coping has both state-like properties and trait-like properties. For example, Gil, Wilson and Edens (1997) investigated the stability of coping strategies in young children, adolescents, and adults with sickle cell anemia over 18 months, and Powers, Gallagher-Thompson and Kraemer (2002) researched the stability of coping skills in Alzheimer's caregivers. Both studies suggest that the use of coping responses is relatively stable over time and across

different situations. Buško and Kulenović (2004) investigated the structure and stability of coping under typical low-control environmental contexts. Using confirmatory factor analysis, the structure of coping was found to remain intact and coping strategies to remain highly stable over time – even though coping responses always reflect some inter- and intra-individual difference. Nielsen and Knardahl (2014) examined the stability of individual coping strategies and patterns of coping over time in a two-year prospective sample. Their results suggest that, while mostly stable, specific coping strategies are malleable, and that it is possible to modify and develop dysfunctional strategies. However, Stewart and Schwarzer (1996) explored self-reported coping preferences in medical students across 8 months and found the stability over time to be very low, to the extent that subsequent coping strategies could hardly be predicted by antecedent coping strategies. In addition, a meta-analysis by Connor-Smith and Flachsbart (2007), looking into the relationship between coping and Big Five personality traits, suggests coping strategies are less stable than Big Five personality traits.

For resilience, there has been considerable divergence in the literature regarding whether it is a trait, process, or outcome variable, that is, stable or not, regardless of the circumstances. For instance, Luthar, Cicchetti and Becker (2000, p. 858) define resilience as a “dynamic process wherein individuals display positive adaptation despite experiences of significant adversity or trauma.” Conversely, Connor and Davidson (2003, p. 76) have defined resilience in terms of the “personal qualities one embodies that enables us to thrive in the face of adversity: a multidimensional characteristic that varies with context, time, age, gender, and cultural origin, as well as within an individual subjected to different life circumstances,” suggesting a more trait-like conceptualization. That said, some aspects of resilience, like ego-resilience, initially identified by Block and Block (1980), are assumed to have a biological or genetic basis and to be relatively stable over time (Caspi & Silva, 1995). While resilience is mostly researched in terms of how one can change, amplify, or strengthen resilience (or protective factors to resilience), some researchers have investigated the stability of resilience measures over time. Research looking into the validity, stability, and test-retest reliability of common resilience measures, suggests resilience is stable over time (Prince-Embury, 2013; Sinclair & Wallston, 2004; Wilson, Plouffe, Saklofske, Di Fabio, Prince-Embury & Babcock, 2019). Vecchione, Alessandri, Barbaranelli and Gerbino (2010) examined the stability of ego-resilience from late adolescence to emerging adulthood. Analyzing longitudinal self-report data from 250+ late adolescents, evidence points to the marked stability of ego resiliency from ages 16–20, both for males and females. Weed, Keogh and Borkowski (2006) examined the stability of resilience in a longitudinal sample of 100+ children born to adolescent mothers. Their results show that that resilience, defined as general competence within the context of adversity, was relatively stable from age 5 to age 8 in at-risk children, highlighting the importance of early development for establishing pathways toward resilience during childhood.

Knowledge about the stability of coping and resilience in light of difficult circumstances has important implications for the understanding and modifications of individuals' responses to challenges. If coping and resilience present as state-like in nature,

this suggests that it may be difficult to change unhealthy coping behavior for more favorable coping strategies or to build resilience in those low on resilience. However, if coping and resilience are constantly modulated or present as more trait-like in nature, and/or reveal a bidirectional relationship of influence between coping and resilience, inadequate coping or limited resilience become excellent entrance points to target for interventions (Folkman & Moskowitz, 2004; Miller & Mittenberg, 1998; Snell, Hay-Smith, Surgenor & Siegert, 2013).

Research aim

In order to further our understanding of coping and resiliency, the current research aims to assess whether coping strategies and one's perception of protective factors remain stable in the context of a global pandemic or whether they present as malleable or susceptible to the influence of major life events. The clinical relevance for gaining a deeper understanding as to whether coping and resilience are stable can lead to interventions that either strengthen current coping strategies or in the case when coping is susceptible to changes, interventions in broadening individual's coping strategies. Equally, if one's perception of their protective factors remains stable, interventions could be developed to strengthen these as well. Or conversely, interventions to broaden one's protective factors. Due to the uniqueness of the current COVID pandemic, specific expectation as to the susceptibility of coping and resilience to changes remains difficult to state. As stated above, based upon previous research it is expected that both concepts will not be susceptible to changes. However, if specific elements of either coping or resiliency do indeed change, these changes will most likely be attributed to the potential psychological distress caused directly by COVID-19 illness or indirectly through the consequences of restrictions implemented during the lockdown (Ipsos MORI, 2020, Shi *et al.*, 2020; Wang *et al.*, 2020; Xiong *et al.*, 2020).

The research questions driving this investigation are:

- 1.. Are there changes in the manner in which individuals cope during a crisis period in comparison to a non-crisis period?
- 2.. Are there changes in individuals' resiliency in terms of their perception of protective factors during a crisis period in comparison to a non-crisis period?

To investigate these questions, this study will build upon previous research (Van der Hallen, Jongerling & Godor, 2020) investigating the linkages between coping and resiliency. Follow-up measures assessed coping and resilience during the crisis period of COVID-19, allowing the researchers to assess potential changes between May 2019 (T_0) and May 2020 (T_1) in coping as well as, perceptions of protective factors.

METHODS

Participants

In May 2019, 502 participants ($N_{\sigma} = 165$, $N_{\varphi} = 333$, $N_o = 4$), aged 18–84 years old, took part in a research study investigating coping, resilience, and their relationship using cross-sectional network analysis (Van der

Hallen *et al.*, 2020). All participants completed the abbreviated version of the Coping Orientation to Problems Experienced inventory (Brief-COPE; Carver, 1997; Carver, Scheier & Weintraub, 1989) and the abbreviated version of the Scale of Protective Factors (SPF-24; Ponce-Garcia, Madewell & Kennison, 2015).

In May 2020, at the peak of the COVID-19 lockdown in the Netherlands, 200 individuals who participated in the earlier study were contacted again and requested to complete the same set of questionnaires. These 200 participants had previously consented to participate in a follow-up study. These participants were contacted using the email address contained in the consent form. A total of 68 participants ($N_{\sigma} = 15$, $N_{\varphi} = 53$, $N_o = 1$), aged 18–34 years old, completed the second wave of data collection. The second wave of participants vary slightly in terms of reported gender ($T_0 = N_{\sigma} = 32\%$, $T_1 = N_{\sigma} = 22\%$) and age ($T_0 = m = 32.23$, $T_1 = m = 24.18$). Participants were screened for mental and/or physical chronic illness before participation. Participants suffering from a chronic illness were excluded from participation.

Procedure

All study protocols were in accordance with the ethical standards of the ethical committee of the Erasmus University of Rotterdam, the Netherlands. Individual informed consent was obtained prior to participation. Data was collected using a self-administered, online survey available in English. Participant recruitment was set up through the university's recruitment facility as well as through the distribution of the survey via email. All participants completed the Brief-COPE (Carver, 1997; Carver *et al.*, 1989) and the SPF-24 (Ponce-Garcia *et al.*, 2015) in addition to a series of socio-demographic questions at two distinct time points: May 2019 (T_0) and May 2020 (T_1).

Instruments

The current study was part of a two-wave investigation into coping and resiliency. For the second wave of data collection, participants were led to the notion that these questions were aimed at looking into how they are currently dealing with the COVID-19 situation. There were approximately 12 months between wave #1 and wave #2.

Brief-COPE

The Brief-COPE, the abbreviated version of the COPE (Carver, 1997; Carver *et al.*, 1989) inventory, was used to assess participants' coping strategies. This instrument is a self-report questionnaire developed to assess a broad range of coping responses containing 14-factor two-item subscales: Use of Emotional Support, Use of Instrumental Support, Venting, Religion, Active Coping, Planning, Self-Distraction, Behavioral Disengagement, Denial, Substance Use, Self-Blame, Positive Reframing, Humor, and Acceptance. Answer possibilities were comprised of a four-point Likert scale with anchors: 0 "I haven't been doing this at all," to 3, "I've been doing this a lot." The Brief-COPE has been reported as having good internal consistency ($\alpha = 0.64$ – 0.82 ; Baumstarck, Alessandrini, Hamidou, Auquier, Leroy, & Boyer, 2017; Wang, Chen, Dai & Richardson, 2018) as well as good internal validity and good test-retest reliability (Cooper, Katona & Livingston, 2008; Garcia, Barraza-Pena, Włodarczyk, Alvear-Carrasco & Reyes-Reyes, 2018).

SPF-24

The SPF-24 is an abbreviated version of the SPF (Ponce-Garcia *et al.*, 2015), a self-report questionnaire developed to assess protective factors shown to be important determinates of resilience. The SPF-24 includes four six-item subscales: Social Support, Social Skills, Planning Behavior, and Goal Efficacy. Each individual item is rated on a five-point Likert scale, ranging from 1, "Disagree," to 5, "Agree." The SPF-24 has been reported as having good internal consistency and is characterized by good

to excellent internal and good internal validity ($\alpha = 0.86-0.92$; Ponce-Garcia *et al.*, 2015).

Data-analysis

The following analyses proceeded in two stages. First, in order to confirm the factor structure in both concepts, confirmatory factor analyses (CFA) were performed using structural equation modeling (AMOS version 24.0) for both the Brief-COPE and SPF-24 at T_0 and T_1 . The comparative fit index (CFI) was used as an indicator of model fit, with values greater than approximately 0.90 indicating a reasonably good fit of the SEM model. Root mean square error of approximation (RMSEA) was used to assess error of approximation, with RMSEA <0.05 indicating close approximate fit, and values between 0.05 and 0.08 suggesting reasonable error of approximation (Wang *et al.*, 2018). Both CFA's included all participants of the original study ($N = 502$). Next, to ascertain the differences in coping and resilience between T_0 and T_1 , a series of within-subjects analysis of variance (ANOVA) (IBM SPSS version 24.0) were performed for the 14 subscales of the Brief-COPE and the four subscales of the SPF. All within-subjects ANOVA's included all 68 participants that completed both T_0 and T_1 . Significance tests were conducted with a significance level of 5%.

RESULTS

CFA Brief-COPE

First, in order to confirm the factor structure of the 14 subscales of the Brief-COPE at T_0 and T_1 , a CFA was performed using structural equation modeling (see Fig. 1) for both time points. Good model fit was achieved for all 14 subscales; T_0 (CFI = 0.91, CMIN/DF = 1.31, RMSEA = 0.06), and T_1 (CFI = 0.95, CMIN/DF = 1.93, RMSEA = 0.04) (Wang *et al.*, 2018). No error correlations were utilized to achieve this fit. This means the hypothesized model, as generally reported with a 14-factor structure, is present and confirmed the current population for both time points.

Tests of sum score differences Brief-COPE $T_0 - T_1$

In order to ascertain differences in coping strategies between T_0 and T_1 , 14 one-way within-subjects (or repeated measures) ANOVA's were conducted (see Table 1 and Fig. 2). For 11 out of 14 of the subscales for the Brief-COPE, no significant within-subject sum scores changes were revealed ($p > 0.05$). However, for three subscales, i.e., Active Coping ($p = 0.005$), Venting ($p = 0.024$), and Acceptance ($p = 0.028$), significant sum scores changes were revealed. This means that the majority of subscales (11) for the Brief-COPE remained stable, that is, no significant within-subject changes between pre-COVID-19, May 2019 to during COVID-19 lockdown, May 2020. For the three significant within-subjects sum score differences between $T_0 - T_1$, Active coping ($M = 4.13$ $SD = 1.17$ vs. $M = 3.49$, $SD = 1.32$) and Venting ($M = 3.29$, $SD = 1.62$ vs. $M = 2.77$, $SD = 1.27$) significantly decreased, while Acceptance ($M = 3.62$, $SD = 1.45$ vs. $M = 4.09$, $SD = 1.20$) significantly increased.

CFA SPF-24

First, in order to confirm the factor structure of the SPF at T_0 and T_1 , a CFA was performed using structural equation modeling (see

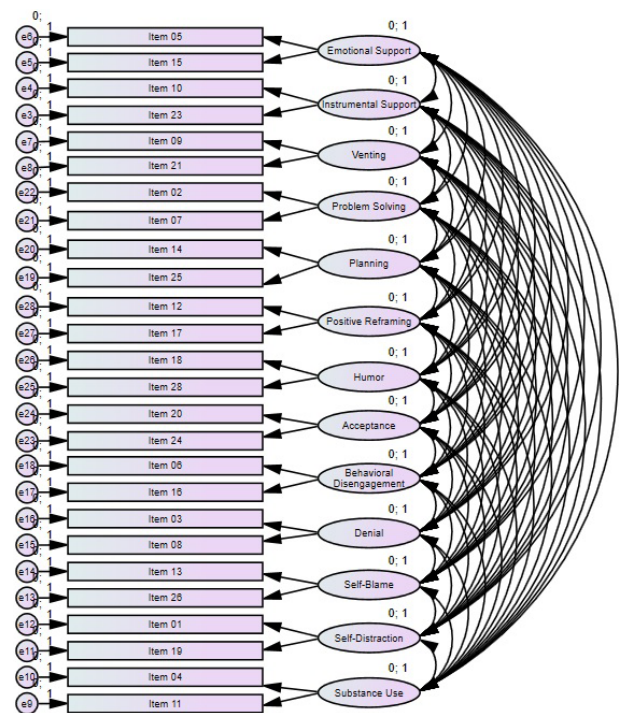


Fig. 1. The 14-factor model of the Brief-COPE.

Table 1. Tests for sum score differences for the Brief-COPE between T_0 and T_1

Factor	Within-subjects ANOVA	
	$F(1, 68)$	p
Emotional support (ES)	0.096	0.758
Instrumental support (IS)	0.129	0.721
Venting (V)	5.295	0.024*
Religion (R)	0.721	0.399
Active coping (AC)	8.597	0.005*
Planning (PL)	2.824	0.097
Self-distraction (SD)	1.698	0.197
Behavioral disengagement (BD)	2.108	0.151
Denial (D)	0.088	0.768
Substance use (SU)	0.287	0.594
Self-blame (SB)	0.000	1.00
Positive reframing (PR)	0.984	0.325
Humor (H)	0.615	0.436
Acceptance (A)	5.067	0.028*

* $p < 0.05$.

Fig. 3) for both time points. Good model fit was achieved for all four subscales; T_0 (CFI = 0.90, CMIN/DF = 1.20, RMSEA = 0.06), and T_1 (CFI = 0.92, CMIN/DF = 2.87, RMSEA = 0.06) (Wang *et al.*, 2018). No error correlations were utilized to achieve this fit. This means the hypothesized model, as generally reported with a four-factor structure is present and confirmed the current population for both time points.

Tests of sum score differences SPF-24 $T_0 - T_1$

In order to ascertain differences in one's perception of protective factors between T_0 and T_1 , four one-way within-subjects (or

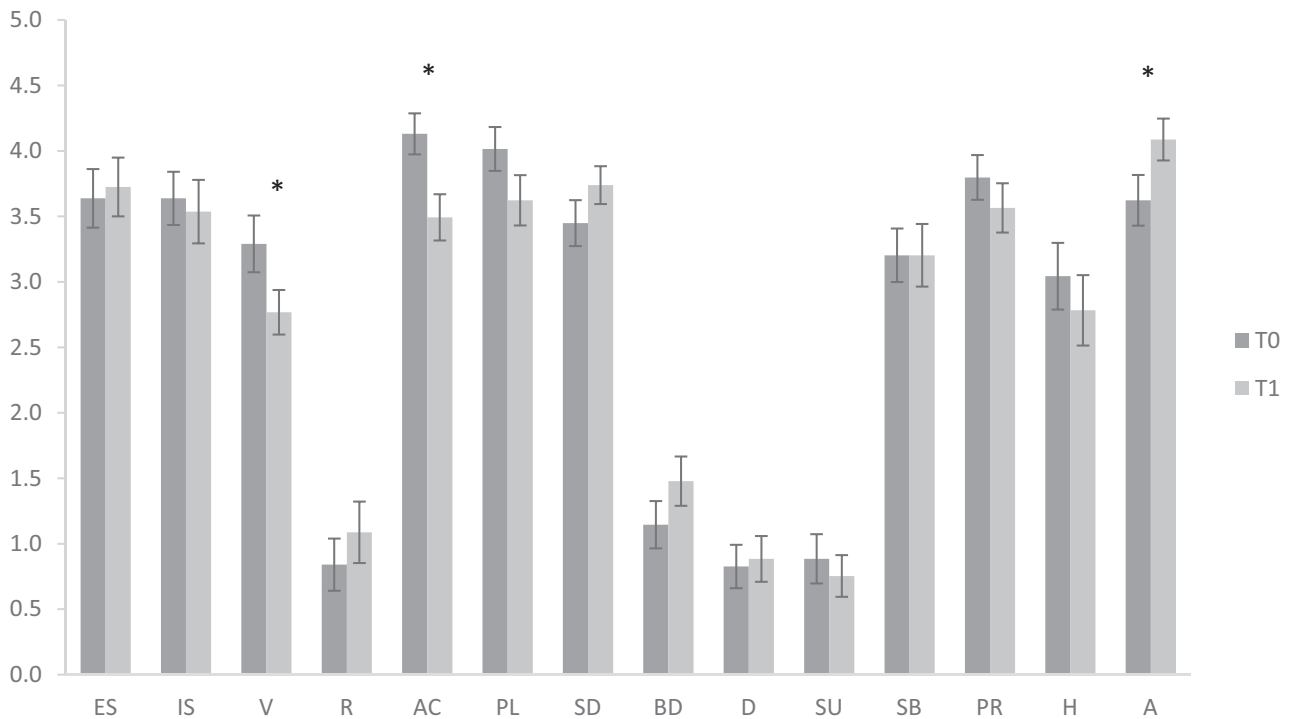


Fig. 2. Sum scores for the 14-factors of the Brief-COPE for T₀ – T₁. Notes: Sum scores for each of the 14 factors of the Brief-COPE at T₀ and T₁: Emotional support (ES), Instrumental support (IS), Venting (V), Religion (R), Active coping (AC), Planning (PL), Self-distraction (SD), Behavioral disengagement (BD), Denial (D), Substance use (SU), Self-blame (SB), Positive reframing (PR), Humor (H), and Acceptance (A). Error bars represent standard error of the mean (SEM). *p < 0.05.

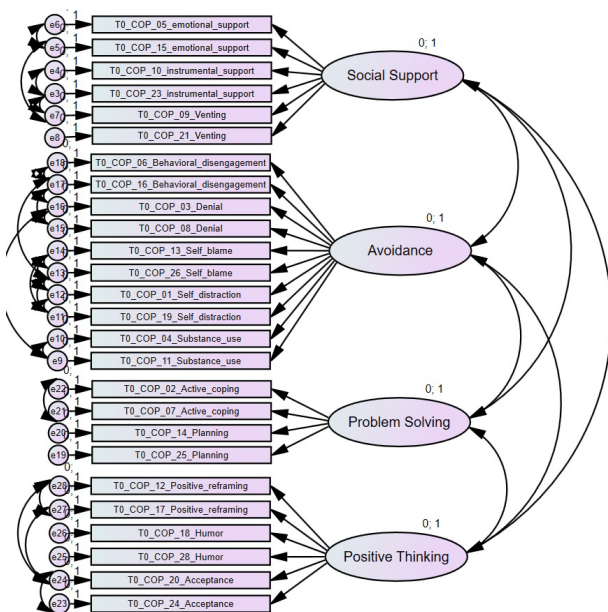


Fig. 3. The 4-factor model of the SPF-24.

repeated measures) ANOVA’s were conducted (see Table 2 and Fig. 4). For all four subscales for the SPF-24, no significant within subjects sum score changes were revealed ($p > 0.05$). This means that all four factors remained stable, that is, no significant within-subject changes, between pre-COVID-19, May 2019 to during COVID-19 lockdown, May 2020.

DISCUSSION

On 11 March 2020 the WHO declared the outbreak of the novel coronavirus SARS-CoV-2 (COVID-19) a global pandemic. Due to the intensive lockdowns employed by national governing bodies, most of public life, including cultural, sporting, religious, and political events, came to a standstill. The combination of potential health risks from COVID-19 with social aspects such as social isolation or physical distancing due to preventative measures created a situation that deeply challenged individuals in how to cope as well as utilize personal and environmental protective factors. The aim of this research project was to assess if experiencing a global pandemic would lead to changes in one’s manner of coping, as measured by the Brief-COPE and/or individual resiliency in terms of the perception of protective factors, as measured by the SPF-24. Specifically relating to the current research questions, would COVID-19 be perceived by individuals so that this experience would be able to influence one’s employed coping strategies and perception of protective

Table 2. Tests for sum score differences for the SPF-24 between T₀ and T₁

Factor	Within-subjects ANOVA	
Social support (SS)	$F(1, 68) = 1.464$	$p = .230$
Social skills (SK)	$F(1, 68) = 0.201$	$p = .655$
Planning Behavior (PB)	$F(1, 68) = 0.062$	$p = .804$
Goal efficacy (GE)	$F(1, 68) = 0.429$	$p = .515$

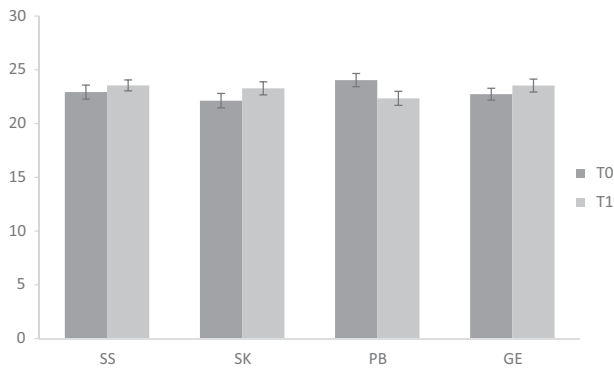


Fig. 4. Sum scores for the 4-factors of the SPF-24 for T₀ – T₁. Note: Sum scores for each of the four factors of the SPF-24 at T₀ and T₁: Social Support (SS), Social Skills (SK), Planning Behavior (PB), and Goal Efficacy (GE). Error bars represent standard error of the mean (SEM).

factors. In other words, are coping strategies susceptible to changes during a crisis event so that it could lead individuals to change or adjust their coping strategies such as employing more denial or humor to cope with their experiences of the pandemic. Equally, would experiencing social isolation or physical distancing during COVID-19 lead individuals to re-evaluate their perception of their protective factors and thus demonstrate a susceptibility to change? For example, would individuals report lower levels of confidence concerning their ability in reaching their goals or their competencies in social situations? Participants completed a survey May 2019 (T₀) and May 2020 (T₁), which marks the period in which the Netherlands was in the middle of the COVID-19 lockdown. 11 of the subscales from the 14 for the Brief-COPE and all four subscales for the SPF-24 were determined to be stable between T₀ and T₁. However, for three subscales, that is, Active Coping ($p = 0.005$), Venting ($p = 0.024$) and Acceptance ($p = 0.028$), significant changes were revealed. In the following paragraphs, these results will be discussed.

Absolute stability of individual coping strategies

Following a CFA using SEM to confirm the factor structure of the Brief-COPE, individuals' coping strategies between T₀ and T₁ were investigated. One-way within-subjects analyses of the Brief-COPE revealed significant sum score changes for only three out of 14 subscales. With 11 subscales remaining stable between T₀ and T₁, these results indicate one's coping strategies remain largely unsusceptible to changes during a pandemic like COVID-19. These findings are in line with previous research that has indicated that the use of coping responses is relatively stable over time and across different situations (Buško & Kulenović, 2004). However, these studies generally focus on longer-term situations such as dealing with a disease or being a caregiver for an Alzheimer's patient and do not encapsulate certain high-impact, perceived stressors that characterize a global pandemic. Having said this, Stewart and Schwarzer (1996) explored self-reported coping preference in medical students during high-stress situations over an 8-month period. While these students' circumstances are not fully comparable to a pandemic, Stewart and Schwarzer's findings do suggest coping strategies during high-stress situations cannot be predicted by antecedent coping strategies.

The framework of preventative measures as well as the personal experiences surrounding COVID-19 did seem to affect an individual's manner in dealing with the situation regarding Active Coping, Venting, and Acceptance. The decrease in an individual's sum score for Active Coping during COVID-19 could be explained by one's inability to dynamically engage in activities to cope with the situation such as planning activities with family members, going out and about for social contact, or organize alternative ways of working. In other words, when a pandemic is ongoing, one's options to deal with difficult circumstances in an active manner, become limited. The decrease in an individual's sum score for Venting could be explained in a similar way. While COVID-19 was supposed to enforce *physical distancing* rather than *social distancing* the former quickly resulted in the latter, with most of social life coming to a standstill, leaving people limited opportunity to vent or share their feelings and emotions with friends or relatives. And while the existence and availability of social media and chat applications abound, these seemed to not fully function in a way as to facilitate or perpetuate similar levels of venting pre-COVID-19. In other words, situations to "vent" diminished due to the increase in social distancing during COVID-19 and were not fully substituted by venting on social media or in chat applications. An increase in Acceptance seems to be in line with the decrease in Active Coping. Taking the governmentally mandated measures into account, some of which were subject to fines for non-adherence, what can one do beyond accepting the situation as is. Moreover, active acceptance is considered an adaptive reaction to unchangeable situations (Nakamura & Orth, 2005).

Knowledge about the stability of individuals' coping strategies has important implications for our understanding and attempts to modify individuals' responses to challenges. Since coping appears to be a relatively stable set of cognitive and behavioral strategies that one uses to manage the demands of stressful situations, that suggests it would be difficult to change unhealthy coping behavior for more favorable coping strategies, thus, creating a difficult entrance point to target for intervention. The idea is that coping is dependent upon individual characteristics and situational aspects, yet, if a pandemic brings about such few changes, to what extent does that situational character play an important role?

Absolute stability of individual perceptions of protective factors

Following a CFA using SEM to confirm the 4-factor structure of the SPF-24, individuals' perceptions of protective factors between T₀ and T₁ were investigated. One-way within-subjects analyses revealed no significant sum score changes for all four factors over time. This means that how participants perceived and experienced their protective factors during a crisis period, remain largely unsusceptible to changes. In other words, during COVID-19, participant's experiences of the crisis were not such as to lead to perceptual changes concerning their ability or competencies for issues such as social support elements in their life; "supportive of one another," "optimistic," and "feeling united"; feeling capable of planning their life in terms of "organize my time well" and being able to "set priorities"; belief in one's ability to achieve goals in terms of "making good decisions/choices," "thinking on

their feet,” and “solving problems”; and possessing social skills to “be with other people,” “working with others as part of a team,” and “start new conversations.” This stability is supported by previous research demonstrating that resiliency appears to be more a stable trait than a state (Vecchione *et al.*, 2010). However, the implications of this conclusion lie in the potential difficulties one may encounter when attempting to change, amplify or strengthen resilience in general. Weed *et al.* (2006) report that children from 5 to 8 years old demonstrate stability in resilience. Thus, further emphasizing the importance of early development for establishing pathways toward resilience during childhood. However, this highlights potential implications if these pathways are not established early in childhood.

In the context of the global pandemic COVID-19, the finding that participants’ perception of protective factors remains unsusceptible to change is noteworthy in terms of dealing with the current situation as well as potential future recovery. Specifically for social support, previous research has indicated that perceived support, as distinguished from actual support, is the dimension of social support that is most strongly related to psychological well-being in children (Prince-Embury, 2008). The notion that this element is perceptually stable and not malleable during a crisis as well as linked to well-being, forms a strong protective factor in terms of the capacity of an individual to withstand or recover from significant challenges that threaten its stability, viability, or development.

Conclusion

Knowledge about the stability of coping and resilience has important implications for the understanding and modifications of individuals’ responses to challenges. Since the majority of the scales for coping and all scales for resilience present as state-like in nature, this suggests that due to its stability, it may be difficult to change one’s coping behavior or to build resilience in those low on resilience. Conversely, individuals who already effectively cope would be less influenced by major life events in terms of changing their already effective coping strategy, thus being able to effectively cope in major life events. Equally, individuals that perceive higher levels of protective factors can demonstrate higher levels of resiliency during major life events. In conclusion, the widespread concerns regarding COVID-19 (Ipsos MORI, 2020; Shi *et al.*, 2020; Wang *et al.*, 2020) in terms of increased anxiety, depression, stress, and other negative emotions should be taken in the context of individuals’ coping strategies and perceived protective factors prior to major life events.

Future research

The current study was performed in early 2020 and many factors worldwide have changed. Having said this, several developments could provide a richer insight into coping and resiliency during COVID-19. For example, the existence of online coping opportunities such as guided mindfulness training, online chat communities as well as professional counseling (i.e., internet cognitive behavioral therapy (I-CBT)). However, it could be argued that while some of these developments could aid in one’s coping or resiliency, specifically for social media platforms, there

exists a chance of addiction, thus forming a risk factor for one’s mental health (Shi *et al.*, 2020; Zhao & Zhou, 2021).

The data that support the findings of this study are available from the corresponding author upon reasonable request.

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