

# Coping with chronic stress during COVID-19 and beyond – A faith perspective



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Spiritual coping has been defined as an individual's ability to utilise faith in God combined with certain Christian beliefs and religious practices to appraise, understand, and effectively cope with stress. We aimed to show the Christian how specific spiritual coping strategies and religious practices could be used to effectively assess and handle chronic stress from a faith perspective amid the ongoing coronavirus disease 2019 (COVID-19) pandemic and beyond. A literature study was conducted to identify positive and negative coping strategies during the COVID-19 era and highlighted the adverse effects of chronic stress and defensiveness. Recent findings on religion, the validated bio-engineered chronic stress phenotype, the Coping Strategy Indicator (CSI), Africultural Coping Systems Inventory (ACSI) and the effect of spiritual coping skills were assessed. In addition, certain Bible passages and theological perspectives regarding spiritual coping were explored to identify traces of the fight-or-flight response in the Garden of Gethsemane. The novel chronic stress phenotype reflecting stroke risk, could determine the prevalence of chronic stress. Positive coping strategies were identified, to show how positive spiritual coping skills could be utilised from a faith perspective, in coping with chronic stress amid COVID-19 and beyond. The Believe-Belong-Behave pastoral model, consisting of individual skills, corporate practices, and practical action steps, showed the Christian how certain spiritual coping skills and practices could be implemented during stress coping. The scriptural insights gained from this study, combined with the pastoral model reviewed, could offer a harmonious contribution toward the Christian's ability to utilise spiritual coping strategies amid COVID-19 chronic stress-induced symptoms and complexities.

**Contribution:** This article used an inter-disciplinary approach to compare recent findings within Theology, Neurophysiology, Bio-engineering, and Psychology regarding religion, stress-phenotyping, positive stress-coping and mental health. The scriptural foundation encouraged a faith-in-action response to chronic stress during the ongoing COVID-19 pandemic and beyond.

**Keywords:** COVID-19; chronic stress phenotype; coping; faith response; spiritual coping.

## Introduction

Amid the ongoing global coronavirus disease 2019 (COVID-19) pandemic, religious beliefs and spiritual practices could show the Christian how to assess and effectively cope with chronic stress. A literature study was conducted to identify positive and negative coping strategies, and to call attention to the detrimental effects of chronic stress. Recently, a supportive novel measure, the chronic stress phenotype (stress phenotype; Malan & Malan 2021:PCT/IB2020/057269) was highlighted to reflect adverse effects of chronic stress (Malan et al. 2020:5; 2021a:16; 2021b:13) that may be induced by COVID-19 threats and restrictions. Certain Bible passages and theological perspectives regarding spiritual coping were explored, to identify traces of the fight-or-flight response in the Garden of Gethsemane. Certain religious skills and practices could be utilised, to better cope with COVID-19 related stress from a faith perspective, such as identified positive spiritual coping strategies. Findings from a recent study (Le Roux 2020:287) on stress-coping and the defence response were used to review a proposed pastoral spiritual coping model. Components of this Believe-Belong-Behave model (Le Roux & Lotter 2021:6), were highlighted to show the Christian how certain individual skills, corporate practices, and practical action steps could be implemented to cope with stress induced by the pandemic. This article thus aimed to support the Christian, in applying spiritual coping in handling chronic stress from a faith perspective, amid the complexities of the COVID-19 era and beyond.

## Chronic stress, anxiety, and depression during and beyond COVID-19: Recent findings

It has been well overserved (Megalakaki & Kokou-Kpolou 2021:1; Taylor 2021b:1), that the rapid spread of COVID-19 infections, combined with unprecedented preventive measures globally, have brought about numerous stress-inducing elements, physical and mental health complications and mortality risks. Recent studies (Lei et al. 2020:9; Shevlin et al. 2020:8) showed that the drastic social behavioural changes and uncertainties connected to COVID-19 treatment and prevention, generated heightened levels of chronic stress, depression and anxiety among patients, healthcare workers, and the general public. As observed by Zaami, Marinelli and Vari (2020:1), 'people have been going through a moment of anxiety and fear for their health and their jobs, and they are forced to live an unfamiliar lifestyle, deprived of relationships'. Post-traumatic stress syndrome symptoms emerged in post-COVID cases (Tu et al. 2021:4). Taylor et al. (2020:712) proposed the COVID Stress Syndrome, consisting of the following five inter-correlated elements that people have been struggling with: (1) fear of infection (e.g. avoiding certain people or places because of the perceived risk of infectability), (2) fear of socio-economic effects (e.g. the financial strain related to job loss or stockpiling supplies for quarantine or self-isolation), (3) fear of foreigners (e.g. homophobia toward certain people groups who might be perceived as spreader-groups), (4) compulsive reassurance-seeking (e.g. obsessive-compulsive checking for latest news updates and health reports, or obsessive-compulsive cleaning of surfaces and objects for germ aversion), (5) traumatic stress symptoms (e.g. pandemic specific worries, anxiety, stress, or depression). Taylor (2020) finds that the COVID Stress Syndrome has been associated with:

[H]igh levels of general anxiety and depression during the pandemic, with greater distress during social distancing-related self-isolation, greater avoidance of public places where COVID-19 might be encountered (e.g., supermarkets), and with greater fear and avoidance of people who might be infected with COVID-19 such as healthcare workers. (p. 2)

Thus, many people avoided public places and healthcare workers out of fear of infection, and stockpiled supplies to prepare for extended quarantine periods. The most common COVID-19 related health risk indicators (Orrù et al. 2021:2) included a combination of physiological, neurological, and psychological symptoms such as mental fatigue, impaired cognitive functioning, loss of concentration, anxiety, depression, and loneliness. Megalakaki and Kokou-Kpolou (2021:2) argued that public health directives, such as practising social distancing and wearing masks, brought about a sense of isolation and loneliness, seeing that 'in the context of the COVID-19 crisis, research indicates that greater loneliness is positively associated with greater anxiety and depressive symptoms'. Whereas the human immune system protecting the body against viral infections, Paluszek et al. (2021:11) showed how anxiety and chronic stress have proven to weaken the immune system. In support, the stress phenotype reflected hypo-activity of the hypothalamic-

pituitary-adrenal axis (HPAA) stress pathway, and suppression of immunoreactivity (Malan et al. 2021a:14). COVID-19 induced stress and anxiety may therefore weaken the immune system, thus increasing vulnerability to viral infection. A related study warned against the major psychological trauma associated with the pandemic, putting COVID survivors at high risk of posttraumatic stress disorder (Xiao, Luo & Xiao 2020:2), and potentially, prolonging ineffective coping. In addition, the stress and trauma caused by infections, hospitalisations, and excess mortalities have resulted in increased depression, anxiety, and grief (Lei et al. 2020:9; Shevlin et al. 2020:8). Dein et al. (2020:5) pointed out that significant life crises could impact humans not only psychologically, socially, and physically, but also on a spiritual level. In light of the abovementioned indications, even though unprecedented chronic stress levels may have initially been induced by the onset of COVID-19, it could potentially linger long post-pandemic. Until recently, the ability to identify chronic stress risk *per se* remained a challenge. Hence identifying the chronic stress phenotype (Malan & Malan 2021) might aid medical and pastoral counselling interventions, to improve psychophysiological well-being. Amid the potential increase of pandemic related chronic stress, anxiety and depression, this article aimed to identify positive coping skills that could help the Christian handle prevalent chronic stress from a faith perspective.

## Reviewed coping and chronic stress methodology

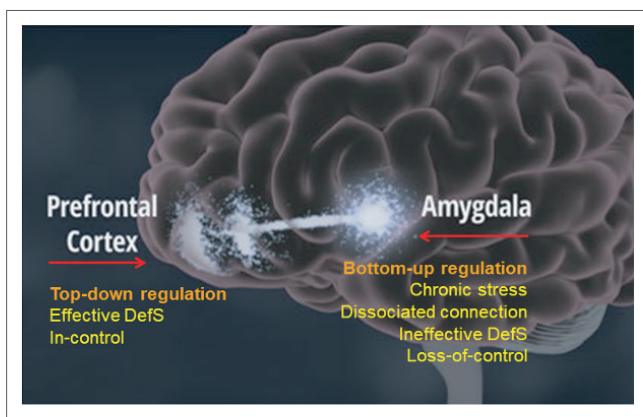
Two well-recognised empirically derived coping questionnaires were reviewed, namely the Coping Strategy Indicator (CSI) (Amirkhan 1990:1070) and the Africultural Coping Systems Inventory (ACSI) (Utsey, Adams & Bolden 2000:194). The CSI identifies three coping strategies: defensive problem-solving, seeking social support, and avoidance or loss-of-control. The ACSI identifies four coping strategies: cognitive or emotional debriefing, spiritual-centred coping, collective coping, and ritual-centred coping.

The chronic stress risk phenotype score (index) revealed discriminatory ability for the positive prediction of chronic stress and stroke risk (area-under-the-curve 0.77, 85% sensitivity) (Malan & Malan 2021:PCT/IB2020/057269).

## Cognition and emotion as behavioural aspects:

Coping effectively with stress is key to psychophysiological well-being. Figure 1 illustrated the important role the dorsolateral prefrontal cortex (dlPFC) fulfils in the human brain for decision-making, defensive problem solving (DefS), and regulation of emotion and behaviour. The dlPFC has connections with the amygdala in the temporal lobe with top-down regulation (dlPFC-amygdala) to control emotion and behaviour (Datta & Arnsten 2019:2). This circuit is recruited in emotion regulation when mechanisms of a more cognitive nature are employed (Datta & Arnsten 2019:2), and may therefore form an integral part of positive, effective DefS success.

Effective DefS coping could be impaired during prolonged uncontrollable stress, resulting in downstream signalling and COVID Stress Syndrome symptoms. Indeed, greater emotional reactivity to acute stress (Comte et al. 2016:151) albeit attenuated stress hormone levels have been observed (Malan et al. 2021a:10). Arguably, top-down regulation (dlPFC-amygdala) is disturbed and emotional amygdala reactivity increases (Comte et al. 2016:151). Disconnection or dissociation of top-down regulation inferred amygdala-dlPFC activity (bottom-up regulation) to resemble emotion-focused coping (Comte et al. 2016:152), or apparent negative coping (loss-of-control). It could further entail, that during chronic stress, biological thresholds reset with apparent dissociation of the dlPFC-amygdala connection (top-down), where a smaller than usual stimulus might evoke greater-



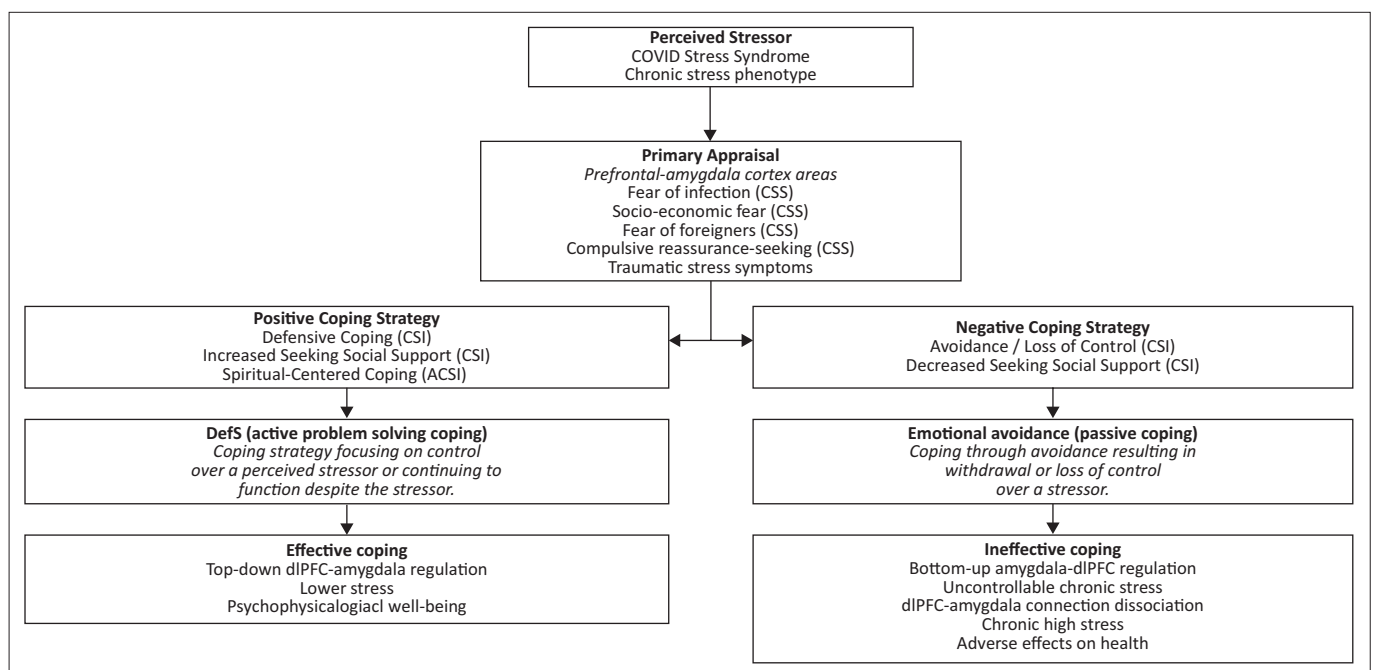
Source: Adapted from Taylor, J., 2021a, *Amygdala or pre-frontal cortex: Which would you rather use?*, viewed 03 February 2022, from <https://www.drjimtaylors.com/4.0/amygdala-or-pre-frontal-cortex-which-would-you-rather-use/>

**FIGURE 1:** Structural and physiological connections between the dorsolateral prefrontal and amygdala cortex areas of the human brain to control cognition, emotion and behaviour. DefS, defensive coping.

emotional and smaller-stress hormone responses. Emotional bottom-up regulation with loss-of-control responses during chronic stress, might hold true as ineffective DefS (Myburgh et al. 2019:8), non-adaptation to stress (Malan et al. 2021a:14), consistent inflammation (Malan et al. 2020) and cognitive diabetes (Malan et al. 2021b) have been observed. Thus, the use of positive spiritual coping during chronic uncontrollable stress from a faith perspective, could support effective DefS and behaviour.

### Effective stress-coping during COVID-19 and beyond: Positive and negative strategies

The concept of stress-coping (Krägeloh et al. 2012:139) depicts a person's ability to implement 'conscious skills, strategies, and mechanisms to deal with, solve, master, minimise, or tolerate stressful situations in life'. Positive coping mechanisms often offer long-term stress solutions. However, Lupe, Keefer and Szigethy (2020:296) found that some coping mechanisms are very enticing to offer short-term relief or stress reduction, regardless of potential negative long-term effects. Certain stress-coping strategies have shown to adversely affect psychophysiological functioning, resulting in serious stress-induced health threats (Le Roux et al. 2018:373). For example, increased substance abuse has been commonly reported (Zaami et al. 2020:3) as a negative coping mechanism to deal with COVID-19 stress and anxiety. In contrast, a recent study (Palm et al. 2021:1) suggested that religiosity predicted greater self-control and less alcohol use to cope with stressful life circumstances. In Figure 2 a flow diagram illustrated how activated cortex areas and coping strategies in response to the COVID Stress Syndrome fears, could be measured by using the CSI and the ACSI.



Source: Adapted from Le Roux, S., Lotter, G.A., Steyn, H.S. & Malan, L., 2018, 'Cultural coping as a risk for depression and hypertension: The SABPA prospective study', *Cardiovascular Journal of Africa* 29(6), 366–373. <https://doi.org/10.5830/CVJA-2018-045>

**FIGURE 2:** Flow diagram of activated cortex areas and coping strategies in response to chronic stress and COVID Stress Syndrome (CSS) measured by the Coping Strategy Indicator (CSI) and the Africultural Coping Systems Inventory (ACSI), dlPFC, dorsolateral prefrontal cortex.



### Stress-coping and loneliness due to COVID-19: Adverse effects

In addition to unprecedented stress levels due to COVID-19, reduced social interaction, public gathering restrictions, and prolonged periods of quarantine or self-isolation have adverse effects on physical and emotional well-being (Orrù et al. 2021:2; Taylor 2020:2). Spreng et al. (2020:1) established that 'social interactions are crucial for survival and fulfilment'. Brooks et al. (2020:912) reviewed numerous recent studies that demonstrated the negative effects of 'separation from loved ones, the loss of freedom, uncertainty over disease status and boredom', or interruption of routine activities. The human defence response, which mainly operates subconsciously, was defined (Le Roux 2020:104) as 'the automatic appraisal of potential threats, dangers, or stressors, which sets in motion specific neurological and psychological processes designed to protect the individual'. A recent study (Popa 2021:3) on the effects of loneliness during COVID-19 concluded, that during periods of prolonged isolation, 'attempts at socialising are accompanied by defensiveness, which increases the likelihood of rejection, ultimately causing more loneliness'. The initial COVID-19 measures, such as lockdowns, social distancing, and communication through technology, seemed to have 'overlooked the possibility of a more nuanced perspective regarding the psychological and social aspects of the pandemic, and loneliness in particular' (Popa 2021:2). Thus, even though isolation for short periods is manageable, a prolonged lack of social and emotional support and interaction could have harmful social and psychological effects. Relevant studies on the effects of COVID-19 on the social brain (Spreng et al. 2020:6; Valenzano et al. 2020:4) illustrated how certain cortex areas in the human brain (e.g. amygdala, inferior temporal lobe, fornix and prefrontal) are activated during social interaction and the defense response. Thus, downstream signalling in certain cerebral cortex areas facilitates the stress appraisal process to view an environment as neutral, harmless, or threatening. Chronic COVID-19 stress appraisal has been associated (Diotaiuti et al. 2021:4) with an increased perception of risk, which increases activity in the limbic cortex to activate the fight-or-flight response. During threat perception 'downstream signalling increases mostly sympathetic nervous system functioning such as heart rate, blood pressure, and stress hormones' (Le Roux 2020:104). Malan and Malan (2016:497) illustrated the stress appraisal process, which included 'a sequence where physiological systems could be turned on by a perceived stressor and turned off after cessation of the stressor'. Therefore, chronic defensiveness could induce stress overload where neural systems become dysregulated in a constant state of alert (Malan et al. 2017:25–26). The chronic stress phenotype reflected detrimental neurotransmitter synthesis and HPA axis hypo-activity facilitating non-adaptation to acute stress, with delayed retinal vein recovery responses (Malan et al. 2021a:13).

Zaami et al. (2020:1) showed that 'the condition of people with psychological troubles may have worsened during the

pandemic as a result of the unconsciously mirroring of others' feelings', indicating the culminating negative effects of COVID-19 stress, combined with a prolonged sense of loneliness. Many humans have been socialised to over function, thus not recognising when their bodies were stressed, traumatised and exhausted, until they reach a state of burnout, depression and disconnection (Kolber 2020). Understanding the combined effects of chronic stress, defensiveness and loneliness could help explain why many of the above-mentioned COVID-19 case studies linked chronic stress to neurological symptoms and mental health disorders (e.g. depression, anxiety, and chronic defensiveness). As described above, an overactive defence mechanism may have harmful effects. Humans need positive defence mechanisms amid COVID-19 (Walker & McCabe 2021:44) and beyond, including spiritual coping (Le Roux et al. 2018:373) as protective factors against psychological distress and symptom formation.

### Practical theological perspectives on spiritual coping

Spiritual coping was defined in this article as an individual's ability to resort to faith in God, combined with certain Christian beliefs and religious practices to appraise, understand, and effectively cope with chronic stress during the COVID-19 pandemic and beyond. The concept of coping, spans a broad field of research that often only focuses on humanistic ideologies; however, this practical-theological research study was conducted from a pastoral approach within the Reformed theological metatheory (Le Roux 2020:9), holding to the authority of Scripture, the sovereignty of God and redemption by grace through faith in Jesus Christ (Denton 2014:1). Seeing that Scripture emphasises God's divine supremacy, power and authority in contrast to fallen humanity's frailty and sinfulness (Piper 2020), the Christian's understanding of spiritual coping should always remain within the context of 'God's omnipotence, omnipresence, omniscience, and omnibenevolence' (Le Roux 2020:164). God should be viewed as 'being actively involved in the coping process to provide guidance and reassurance' (Le Roux 2020:79). The Christian should also distinguish between self-directing, deferring, and collaborative religious coping styles (Le Roux 2020:78; Pargament et al. 1988:91). In self-directing religious coping, the responsibility of solving a problem depends on the Christian's efforts, while God is viewed as passive. In contrast, in deferring religious coping, the Christian places the entire problem-solving responsibility on God, while passively perceiving themselves as entirely inadequate to do anything about the stressor. However, in collaborative religious coping, the Christian works in submissive and obedient partnership with God to solve problems, seeing that 'participatory spirituality does not see either God or people as passive bystanders but instead promotes the idea that God encourages human participation in His workings' (Le Roux 2020:78). Two extensive reviews (Koenig 2018; Koenig, Al-Zaben & VanderWeele 2020:270) accentuated the link between religion and mental health,

which reflected religious involvement and faith such as the following: a source of comfort during times of distress; coping better with threats and symptoms of diseases; reduced anxiety; smaller risk of depression; better recovery from depression; less substance abuse; better immune functions; a greater sense of hope, optimism, and happiness; and a greater sense of purpose and life meaning. Thus, this article aimed to show how faith in God's divine nature, combined with social support within a caring religious community, could encourage the Christian to use certain spiritual coping practices to handle chronic stress amid COVID-19 and beyond.

### **Spiritual coping during COVID-19 and beyond: Recent findings**

Recent findings in clinical psychology (Knabb et al. 2019) showed the benefit of incorporating various theoretical orientations in the treatment of stress and suffering, thus including a distinctly Christian approach to psychotherapy. A review of Google search data from 95 different countries (Bentzen 2020) found that the frequency of people searching for the term 'prayer' spiked dramatically in March 2020 amid the rise of COVID-19 cases globally, thus providing evidence that many people chose to turn to faith in God during times of crises and distress. A cross-sectional survey of 200 COVID-19 healthcare workers suggested (Chow et al. 2021:12) that 'positive religious coping remains a significant coping mechanism to boost mental health, commonly via prayers, attending religious services, reading scriptures or meditation'. This may support the notion that many people have turned to faith practices to help them cope during the current pandemic. Furthermore, (Jans-Beken 2021:5) it showed that a positive way of coping with pandemic-induced chronic stress, is to foster an attitude of gratitude toward God and to show actions of kindness while enjoying the small things in life. Koenig et al. (2020:270) suggested that 'religious involvement can serve as a resource that enhances individuals' mental health and well-being, and can prevent the development of mental disorders or speed their resolution'. Having a sense of life purpose, allowed people to regulate the loneliness caused by COVID-19 restrictions (White 2020:683; Yıldırım et al. 2021:9). The pandemic hindered numerous faith practices due to 'the cancellation of live religious services, closing religious schools, cancelling pilgrimages and prohibiting group interactions during festivals and celebrations' (Dein et al. 2020:3). Bryson, Andres and Davies (2020:370) highlighted how 'clergy have been challenged to improvise alternative worship forms to sustain their congregations while providing pastoral support for the apprehensive, ill and bereaved'. Fortunately, the 'mediatization of religion' (Singarimbun 2021:97) has enabled churches globally to incorporate communication technology as a new strategy for church institutions to function during the pandemic. Virtual church has enabled religious participation through initiatives such as live-stream worship services, online giving, and digital prayer meetings, small groups, youth meetings, and children's church (Bryson et al. 2020:370). As observed by Koenig (2020):

From a faith perspective, God has allowed the coronavirus pandemic for some reason at this particular time in history, and it coincides with the present booming age of technology that connects people both near and far at virtually no cost or risk to health. (p. 4)

Thus according to Shevlin et al. (2020), amid the complex restrictions of the pandemic as it relates to religious practices, local churches could still provide support for certain groups of people, groups:

[W]ho may be more vulnerable to the social and economic challenges of the pandemic, particularly those whose income has been affected, who have children living in the home and who have pre-existing health conditions that make them vulnerable to the more devastating effects of the COVID-19 virus. (p. 8)

Hence understanding spiritual coping related to chronic stress, could help psychotherapeutic practitioners to integrate religious and spiritual dimensions into treatment programmes (Knabb et al. 2019), preventing mental health problems from relapsing. Thus, utilising chronic spiritual coping skills might help preserve mental health.

### **Scriptural insights on spiritual coping**

From a practical-theological viewpoint, chronic stress amid COVID-19 and beyond, revealed the need for a pastoral coping model that highlights God's providence during grief, sorrow, and loss, and provides a theological rationale for lament during times of trauma and distress (Harrington 2021:99). Drawing from recent literature (Agarwal, Chovatiya & Rana 2020; Koenig 2020:3; Kolber 2020) on spiritual coping, mindfulness, attunement, and deep breathing, we aimed to show Christians how surrendering to God's perceived care and compassion could change their evaluation of pandemic-related stress and social isolation. Social stress and trust were important correlates of religion (Dingemans & Van Ingen 2015:7), yet much of the pandemic related stress elements were induced by increased social stress and a sense of mistrust (Diotaiuti et al. 2021:4; Taylor 2020:2). Le Roux and Lotter (2021:3) suggested that individual and social stress was 'a result of humankind's disconnection from their divine Creator because of their sinful actions in Eden'. God created humans to bear his image and likeness, but their relationship with God has been broken due to sin (Denton 2014:5). Le Roux and Lotter (2021:3) examined recent findings on stress-coping, defensiveness, and positive spiritual coping from a scriptural perspective through 'the narrative of Scripture (history) and the message and application of Scripture (revelation)' (Van der Walt 2007). The current article used this same History of Revelation method (Le Roux 2020:114), to explore links between stress-coping, defence response and Christ's arrest in the Garden of Gethsemane (Jn 18).

### **Spiritual coping and potential traces of the defence response in the Garden of Gethsemane**

Knabb et al. (2019) suggested that 'Christians have historically sought psychological and spiritual insight – that is, a

psychospiritual understanding of the human predicament – from the characters and teachings in the Bible’. Hence, from a psychospiritual perspective, this section highlights some thought-provoking similarities between a Scriptural narrative and the human defence response that could hint toward spiritual coping. While the Gospel narratives recorded numerous stressful and threatening circumstances that Jesus Christ and his disciples faced during their ministry (Köstenberger 2009; Talbert 1994), this article focused on the Garden of Gethsemane arrest (Jn 18). While we did not aim to add new meaning to the traditional understanding of the passion narrative, we made certain comparisons and highlighted some observed similarities based on the disciples’ response to perceived threats to the notion that the fight-or-flight response is inherent. We cautiously compared their response to Christ’s reaction to suggest that the disciples defaulted to a fight-or-flight response while Christ, in contrast, demonstrated a faith response. In Table 1 (Le Roux 2020:212) the disciples’ seemingly fear-driven reactions to Christ’s seemingly faith-driven response during his arrest, were reviewed.

### Spiritual coping and the disciples’ defence response: Observed fight-or-flight coping style similarities

At this juncture in the Gospels (Mt 26; Lk 22; Jn 18) the disciples had witnessed Jesus overcoming numerous adversities (Köstenberger 2009). Yet, even though Jesus forewarned them about his imminent suffering (Talbert 1994), they appeared ill-prepared for his arrest. A parallel between the disciples’ fear-driven reaction and the innate fight-or-flight response (Table 1), could hint toward negative stress coping strategies (Le Roux 2020:212). Initially, the disciples correctly recognised the arrival of the guards as a threat (Jn 18:3) (stress appraisal – perceived threat). However, some disciples chose to flee out of fear (Mt 26:56) (emotional avoidance coping or defence – flight response). In contrast, Peter resorted to the sword in self-defence (Jn 18:10) (defence – fight response). Christ’s command to Peter to put away his sword (Jn 18:11) encouraged instead faith-based coping of self-directed coping (spiritually based coping). However, Peter continued his negative coping style when he later denied Christ publicly (Jn 18:26–27) (emotional avoidance coping). Le Roux (2020:213) showed how Peter, despite his fear-responses and failures, became a prominent leader in the

Early Church after Christ restored him publicly (Jn 21:7). Later on, Peter penned a very practical example of positive spiritual coping on handling stress from a faith perspective: ‘Cast all your anxiety on him because He cares for you’ (1 Pt 5:7 – NIV).

### Christ’s faith response: Observed spiritual coping style similarities

Even though the Gospels recorded Jesus performing numerous miracles, signs, and wonders, Christ accepted his impending suffering as the fulfilment of Scripture (Jn 18:4; Talbert 1994). He was, in a sense, divinely prepared for his arrest (Köstenberger 2009). A cautious comparison between the disciples’ fear-driven reaction and Christ’s faith-driven response, could hint toward positive spiritual coping strategies (Le Roux 2020:213). Before his arrest, Jesus Christ surrendered his will to God’s in prayer (Mt 26:23; Jn 18:1) (spiritually based coping). Indeed, Christ’s surrender to his preordained suffering caused Him great distress, to the point of sweating blood (Lk 22:22) (prolonged intense stress and sympathetic nervous system (SNS) activation (facilitating *hematohidrosis*). Recently, Duffin (2017:13) reported cases of *hematohidrosis* where chronic stress, intense trauma, and extreme mental strain caused a person to literally sweat blood, due to the rupture of capillary blood vessels that feed the sweat glands. This rare phenomenon could be compared to the intense pain and suffering of Christ (Holoubek & Holoubek 1996:115) and might reflect the negative effects of extreme levels of stress (Duffin 2017:13). Jesus knew that the armed soldiers came for his arrest (Jn 18:3) (stress appraisal). However, in understanding God’s redemptive plan through His suffering, He surrendered without a fight (Jn 18:8) (spiritually based coping). Amid the false accusation and being mocked, tortured and flogged (Jn 19:1–3), the Servant Lamb (Is 53:1–9) surrendered to God’s bigger plan by finding the inner strength to endure (spiritually based coping). Christ’s humble example of spiritual coping will show the Christian how to resist the temptation to react swiftly (flight response) or aggressively (fight response) to perceived threats and to find the God-given inner strength, patience, and discernment to utilise positive spiritual coping methods (faith response). Interestingly, not long before his arrest, Jesus Christ taught his disciples how stress could be handled from a faith perspective: ‘I have told you these things, so that in me

**TABLE 1:** Stress appraisal and defensiveness (DefS) in the Garden of Gethsemane.

Passage	Action/reaction	Coping style similarities	Perceived effect
Jn 18:1	Amid intense anguish, Jesus models praying first	Stress appraisal – Perceived threat	Positive
Lk 22:44	Jesus sweat drops of blood	Possible prolonged intense stress	Negative
Mt 26:39	Jesus surrendered his will to God’s bigger perspective	Spiritually based coping	Positive
Jn 18:3	Soldiers posed a threat	Stress appraisal – Perceived threat	Negative
Jn 18:8	Jesus did not fight or flee	Spiritually based coping	Positive
Mt 26:56	Many disciples fled	Emotional avoidance coping / DefS – Flight response	Negative
Jn 18:10	Peter uses his sword to fight	DefS – Fight response / Self directing	Negative
Jn 18:11	Jesus responded with faith and compassion	Spiritually based coping	Positive
Jn 18:26	Peter’s thrice denial	Emotional avoidance coping	Negative

Source: Adapted from Le Roux, S., 2020, ‘The body metaphor and spiritual coping within a South African cohort: A pastoral approach’, PhD dissertation, Faculty of Theology, North-West University



you might have peace. In this world you will have trouble. But take heart! I have overcome the world' (Jn 16:33 – NIV). Therefore, scriptural interventions for the improvement of stress coping were proposed.

## A pastoral model: Coping with chronic stress from a faith perspective

The adverse effects of COVID-19 stress and the current fear, anxiety, and psychological distress are increasing susceptibility to infection. However, the Christian's faith and trust in God's divine supremacy, power and authority (Piper 2020), combined with certain religious practices have proven to promote positive emotions (Koenig 2020:2). Highlighted findings accentuated the urgent need among Christians to implement positive stress-coping skills. It is thus important to emphasise the role and responsibility of the Christian church, to promote a faith response to cope with pandemic related stress and beyond. For example, Liedke (2018:6) illustrated the positive effects of the contemplative practices of worship and prayer on the human brain. Slowing down and practising controlled breathing allows one to develop capacities for quieting the mind (Agarwal et al. 2020; Kolber 2020). VanderWeele, Balboni and Koh (2021) suggested that promoting religious and community participation 'may prove critical in revitalizing our communities, thereby also promoting health and well-being' post-COVID. Pillay (2020:266) prompted churches to reconsider and adapt their methods, strategies techniques, and practices. Incorporating a pastoral model (Le Roux & Lotter 2021:5) may show the Christian how spiritual coping skills could be applied to improve psychophysiological well-being. The proposed Believe-Belong-Behave model (Le Roux 2020:232) could help COVID-era Christians handle pandemic-induced stress and beyond more effectively. This pastoral model's *Believe* category promoted 'individual skills that could be developed through a Christian's belief in God' (Le Roux 2020:226). The *Belong* category promoted 'the corporate practices that a Christian could find by belonging to the Body of Christ, as expressed in the local church' (Le Roux 2020:226). The *Behave* category showed 'practical action steps that can be taken when confronted with perceived stressors and threats' (Le Roux 2020:226). Table 2 (Le Roux 2020:225) illustrated the 15 components of this pastoral model which consisted of five skills, five practices,

**TABLE 2:** The Believe-Belong-Behave Model during chronic stress amid COVID-19 and beyond.

Believe	Belong	Behave
<i>Individual Skills (amid pandemic-related uncertainty)</i>	<i>Corporate Practices (amid social distancing – in-person or virtually)</i>	<i>Action Steps (amid COVID Stress Syndrome symptoms)</i>
1. Faith in God	1. Social Support	1. Pray First
2. Dialogue with God	2. Corporate Worship	2. Take a Selah-moment
3. Word of God	3. Discipleship Training	3. Choose Faith over Fear
4. Hope in God	4. Missional Servanthood	4. Think Positively
5. Purpose from God	5. Pastoral Care	5. Gain Perspective

Source: Adapted from Le Roux, S. & Lotter, G., 2021, 'Fight, flight or faith: A pastoral model for spiritual coping', *In die Skriflig* 55(2), 1–9. <https://doi.org/10.4102/ids.v55i2.2700>

and five action steps that could be applied when facing pandemic-induced stress and beyond.

## Utilising the Believe-Belong-Behave Model to cope with chronic stress

Faith and trust in God's divine nature, combined with certain spiritual practices, can promote positive ways to cope with chronic stress. The various components of the Believe-Belong-Behave model (Le Roux (2020:225) could be used in harmony to promote the Christian's spiritual formation within the local church upon identification of chronic stress prevalence and potential adverse outcomes (Malan et al. 2021b:1).

### 'Believe' category – Individual skills

The *Believe* category shows the Christian how to develop individual faith-coping skills to handle chronic stress during COVID-19 and beyond:

- Skill #1 – Faith in God: The Christian can follow Christ's example to trust God's redemptive plan and demonstrate faith in God (Le Roux 2020:229). Faith in God can be nurtured within the believer through repentance, prayer, Bible study and religious involvement (in-person or virtual) (Piper 2020).
- Skill #2 – Dialogue with God: The Christian can follow Christ's example to often engage in a conversation with God through prayer (Le Roux 2020:229). Dialogue with God can be nurtured within the believer through prayer meetings (in-person or virtual) and teachings on contemplative prayer, silence and reflection (Knabb et al. 2019; Kolber 2020).
- Skill #3 – Word of God: Seeing that Jesus Christ is the Living Word (Jn 6:51, 63), the Christian can study the Word of God for inspiration, encouragement, and guidance (Le Roux 2020:229). Knowledge of the Word of God can be nurtured within the believer through frequent Bible study (in-person or virtual) and habitual personal study of Scripture (Knabb et al. 2019; Kolber 2020).
- Skill #4 – Hope in God: The Christian can follow Christ's example by developing hope in God's faithfulness, regardless of adverse circumstances (Le Roux 2020:229). Hope in God can be nurtured within the believer through teachings (in-person or virtual) about God's faithfulness to provide comfort and guidance during difficult times (Knabb et al. 2019; Kolber 2020).
- Skill #5 – Purpose from God: The Christian can follow Christ's example of trusting God's divine purpose for his life (Le Roux 2020:229). A sense of purpose from God can be nurtured within the believer by identifying a person's spiritual gifts, God-given abilities, and learnt skills that could be used in their ministry and vocation (White 2020:683; Yıldırım et al. 2021:9).

### 'Belong' category – Corporate practices

The *Belong* category shows the Christian how to engage in corporate practices within the local church, to handle

COVID-19 related stress amid the ongoing COVID-19 guidelines and restrictions on public gatherings and beyond (Bryson et al. 2020:370; Dein et al. 2020:3):

- Practice #1 – Social Support (*amid social distancing*): The Christian can seek care and encouragement through supportive networks in the church and faith community (Le Roux 2020:230). Social support can be nurtured within the local church by offering pastoral care, social support and counselling (in-person or virtual) (Chow et al. 2021:12; Pillay 2020:268).
- Practice #2 – Corporate Worship (*in-person or virtually*): The Christian can still engage in worship events that promote an awareness of God's presence and power (Le Roux 2020:230). Seeing that the religious practice of worship has shown neurophysiological benefits (Liedke 2018:6), corporate worship can be nurtured within the local church by offering worship services and events online, outside, or in-person (Chow et al. 2021:12; Pillay 2020:268).
- Practice #3 – Discipleship Training (*in-person or virtually*): The Christian can still engage in discipleship training (Ac 1:8) to develop spiritual gifts, natural abilities, and acquired skills (Le Roux 2020:230). The church should promote discipleship-training programmes (in-person or virtual) that develop an awareness of God's presence amid difficult times (i.e. a global pandemic or chronic stress) and encourage Christian service to those in need (Pillay 2020:269).
- Practice #4 – Missional Servanthood (*amid social distancing*): The Christian can still engage in missional programmes (Ac 1:8) to share the gospel by identifying opportunities to help, reach, and serve those in need locally and globally (Le Roux 2020:230). The church should promote missional servanthood to reach the lost and despondent through missional church initiatives and humanitarian institutes (Piper 2020).
- Practice #5 – Pastoral Care (*in-person or virtually*): The Christian can still seek counsel and pastoral care to help navigate times of distress (e.g. worry, fear, anxiety, stress, loneliness, and depression) (Le Roux 2020:230). It is vital during this current time of uncertainty for the church to provide and promote virtual or in-person Christian counselling, pastoral care, congregational encouragement, and benevolence (Pillay 2020:268).

#### 'Behave' category – Action steps

The *Behave* category shows the Christian how to take practical action steps to handle or cope positively with chronic stress during COVID-19 and beyond:

- Step #1 – Pray First: The Christian can follow Christ's example by deciding proactively to firstly pray to God to 'find inner peace and divine guidance that could promote an appropriate faith-inspired response' (Le Roux 2020:231). Seeing that the religious practice of prayer has shown neurophysiological benefits, to decrease chronic fight-or-flight activation (Liedke 2018:6), the Christian should be encouraged to turn to prayer first before

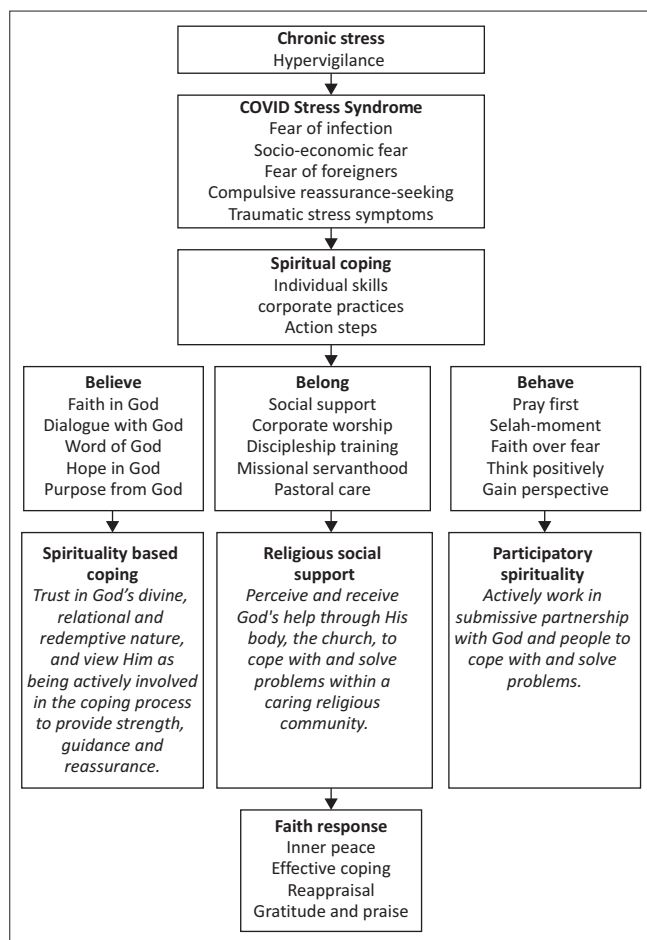
reacting or responding to a threat (Chow et al. 2021:12; Koenig 2020:3).

- Step #2 – Take a Selah-moment: The Christian can pause and reflect to consider a faith-driven response instead of an automatic fear-driven response (Le Roux 2020:231). The Christian should be encouraged to take a Selah-moment through the contemplative practices of silence, solitude, mindfulness, attunement, and deep breathing to calm down and seek divine guidance, before reacting to a stressor (Agarwal et al. 2020; Koenig 2020:3)
- Step #3 – Choose Faith over Fear: The Christian can follow Christ's example by trusting in God's divine nature and having faith in God's omnipotence 'in order to counter any fear-driven instinctive fight-or-flight reactions, by utilising an appropriate faith-inspired response instead' (Le Roux 2020:231). The Christian should be encouraged to choose a faith response instead of a fear-driven reaction (Chow et al. 2021:12; Koenig 2020:3).
- Step #4 – Think Positively: The Christian can remain hopeful by thinking about potential solutions which encourage positive coping responses amid chronic stress (Le Roux 2020:231) to enhance top-down (dlPFC-amygdala) regulation. To combat the negativity, uncertainty, and vigorous mental strain caused by chronic stress, as witnessed during COVID-19, the Christian should be encouraged to focus on the grace of God which can provide Christ-given security to bring inner peace and hope for the future (Koenig 2020:3; Yıldırım et al. 2021:9).
- Step #5 – Gain Perspective: The Christian can follow Christ's example of trusting God's bigger plan and purpose (Le Roux 2020:231). The Christian should be encouraged to gain an eternal life perspective, trusting that times of trials and tribulation (as witnessed during a global pandemic or chronic stress) are temporary, while God's promise of everlasting life in his kingdom is eternal (Piper 2020; Yıldırım et al. 2021:9).

#### Stress-coping from a faith perspective: From chronic stress to inner peace

The Believe-Belong-Behave pastoral model provided a comprehensive overview, to show the Christian how specific spiritual coping skills and practices could be implemented to cope with chronic stress. However, many of the spiritual coping clinical reviews and case studies reviewed in this article, focused on only a small number of solitary religious practices. Some of the relevant findings on positive spiritual coping, thus appeared to be fragmented and interdisciplinary. We aimed to present a combined and collective summary and description to show the Christian how spiritual coping skills could be applied consistently and in harmony, to cope with chronic stress amid COVID-19 and beyond. Jesus Christ warned of stressful circumstances in life, yet He promised an inner peace that can be found in Him, regardless of outward circumstances, 'Do not be anxious about anything, but in every situation, by prayer and petition, with thanksgiving, present your requests to God. And the peace of God, which transcends all understanding, will guard your hearts and your minds in Christ Jesus' (Phlp 4:6-7). The Believe-Belong-Behave pastoral model could be used to cope with chronic





Source: Adapted from Le Roux, S., 2020, 'The body metaphor and spiritual coping within a South African cohort: A pastoral approach', PhD dissertation, Faculty of Theology, North-West University

**FIGURE 3:** A flow diagram to present an adapted version of how the Believe-Belong-Behave pastoral model can be used to cope with chronic stress, amid the COVID Stress Syndrome, and beyond.

stress caused by the COVID Stress Syndrome and beyond, as presented in a flow diagramme (Figure 3).

## Chronic stress and spiritual coping amid COVID-19 and beyond

### Discussion

An inter-disciplinary approach was applied to assess recent findings within Theology, Neurophysiology, Bio-engineering and Psychology. Interactive factors involved religion, bio-engineered stress-phenotyping, dorsolateral prefrontal cortex and amygdala dissociated connection (top-down regulation), coping strategies and mental health. Specific stress-coping strategies have shown to adversely affect psychophysiological functioning, resulting in serious stress-induced health threats (Le Roux et al. 2018:373; Malan et al. 2021b:1–2) and risk for COVID-19 related posttraumatic stress syndrome (Tu et al. 2021:4). This practical-theological approach emphasised a scriptural foundation to encourage a faith-in-action response to chronic stress during the ongoing COVID-19 pandemic and beyond. Spiritual coping was defined as an individual's ability to utilise trust and faith in God, combined with certain Christian beliefs and religious

practices to appraise, understand, and effectively cope with chronic stress during COVID-19 and beyond. In support, positive and negative coping strategies during the COVID-19 era were identified and highlighted the adverse effects of chronic stress and defensiveness. Finally, certain Bible passages and theological perspectives regarding spiritual coping were explored to contrast typical fight-or-flight responses with faith responses.

### Key findings

The detrimental effects of increased alertness, anxiety, and depression on brain circuitry due to chronic stress, as reported during COVID-19 and beyond, were discussed. In addition, the adverse effects of loneliness and chronic defensiveness due to reduced social interaction, public gathering restrictions, and prolonged periods of quarantine or self-isolation were approached. Furthermore, a stress phenotype and related symptoms may hold true for post-traumatic stress syndrome in the wake of the pandemic and beyond. Coping strategies in response to the COVID Stress Syndrome, by using the CSI and the ACSI could be used to identify positive and negative stress-coping strategies. Certain spiritual coping techniques, like having faith in God as Redeemer, engaging in religious involvement, and utilising religious practices could help many to cope with COVID-19 related chronic stress or trauma. Theological perspectives and biblical practices within the basic tenets of reformed theology were reviewed to identify resemblances to stress appraisal and human defensiveness in the Garden of Gethsemane narrative. From a psychospiritual perspective, some thought-provoking similarities between the disciples' seemingly fear-driven reactions, and the fight-or-flight response were identified. While not aiming to add new meaning to the traditional scriptural interpretation of Christ's arrest, the disciples' fear-driven reactions were compared to Christ's faith-driven response. Finally, implementing the Believe-Belong-Behave pastoral model, consisting of individual skills, corporate practices, and practical action steps, could show the Christian certain spiritual coping skills and practices to cope with chronic stress effectively. The individual skills recommended were: having faith in God, dialoguing with God, reading the Word of God, finding hope in God, and pursuing purpose from God. The corporate practices recommended were: finding social support, engaging in corporate worship, undergoing discipleship training, engaging in missional servanthood, and seeking pastoral care. The practical action steps recommended were: proactively deciding to firstly pray, pausing for a Selah-moment, choosing faith over fear, thinking positively, and gaining perspective.

### Strengths and limitations

The current Practical Neuro-Theological approach emphasised a scriptural and theological foundation to encourage a faith-in-action response to chronic stress, induced by the ongoing COVID-18 pandemic and beyond. A Christians' faith and trust in God's divine nature, combined with certain spiritual practices could promote positive ways to cope with chronic stress during COVID-19 and beyond.

The identified positive coping strategies and spiritual coping skills utilised as a faith response in stress-coping could strengthen resiliency to stress.

Even though the current article relied more on literature study than on focus group discussions, this review is a crucial research tool that might help to incorporate Theology into clinical practice, especially in light of the seemingly renewed interest in the prevalence of chronic stress and the concept of spiritual coping, as found in many of the case studies cited.

## Implications or recommendations

Much of the current relevant findings on determining chronic stress prevalence and positive effects of spiritual coping, remain fragmented and interdisciplinary. Ongoing dialogue in academia and clinical medicine, on how spirituality and religious components relate to quality-of-life assessments during chronic stress events, should therefore be expanded globally. Collective evidence on coping with chronic stress from a faith perspective, presented a practical model that pastors can use to equip local church congregations.

## Conclusion

In conclusion, the scriptural insights gained from this study, combined with the consistent application of the individual skills, corporate practices, and practical action steps were recommended in the Believe-Belong-Behave pastoral model. This model could offer a harmonious contribution toward the Christian's ability, by the grace of God, to utilise spiritual coping strategies amid the complexities of COVID-19 and during chronic stress situations.

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The authors declare that they have no financial or personal relationships that may have inappropriately influenced them in writing this article.

### Authors' contributions

S.L.R. conducted an extensive literature study on the implications of COVID-19 on mental health and psychophysiological well-being, the adverse effects of chronic stress, and positive and negative coping strategies. S.L.R. and R.A.D. assessed spiritual coping within the context of Practical Theology, by identifying traces of stress-coping and defence response in Scripture. L.M. and N.T.M., inventors of the chronic stress risk instrument, assessed the physio-neuro-psychological findings of this study and helped to develop the theoretical framework of this article, and further reviewed and edited the writing of this article.

### Ethical considerations

This article followed all ethical standards for research without direct contact with human or animal subjects.

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## Data availability

Data sharing is not applicable to this article as no new data were created or analysed in this study.

## Disclaimer

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