Original article

Facing Your Fear of COVID-19: Resilience as a Protective Factor Against Burnout in South African Teachers

Faire face à la peur du COVID-19 : la résilience comme facteur de protection contre l'épuisement professionnel chez les enseignants sud-africains

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A R T I C L E   I N F O

A B S T R A C T

Objective. – Frontline workers have been distinctively impacted by the rapid spread of the COVID-19 pandemic. Teachers, as frontline employees in the educational system, had to contend with unprecedented changes to their work role, as well as new job demands coupled with insufficient resources and the effects of the pandemic on their personal lives. While some teachers struggled to cope and reported intense levels of fear of COVID-19 and burnout, others were able to adapt and experienced a sense of growth and accomplishment. Therefore, the current study aimed to examine the role of resilience in the relationship between fear of COVID-19 and burnout among South African schoolteachers using a survey design.
Materials and methods. – Schoolteachers in South Africa ($n = 355$) were administered the Maslach Burnout Inventory, the Fear of COVID-19 Scale, and the Connor–Davidson Resilience Scale-10.
Results. – The results showed a positive relationship between fear of COVID-19 and emotional exhaustion and depersonalization. Moreover, structural equation modeling confirmed a health-sustaining role for resilience as it had a significant direct effect on burnout. Resilience also partially mediated the impact of fear of COVID-19 on depersonalization as well as emotional exhaustion, and fully mediated the impact of fear of COVID-19 on personal accomplishment.
Conclusions. – Our findings underscore that promoting individual- and institutional-level strategies to support teachers is necessary to build resilience, especially in the context of the COVID-19 pandemic.
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R É S U M É

Objectifs. – Les travailleurs essentiels (ou travailleurs de première ligne) ont été particulièrement touchés par la propagation rapide de la pandémie de COVID-19. Les enseignants, en tant qu'employés clés du système éducatif, ont dû faire face à des changements sans précédent dans leur rôle professionnel, ainsi qu'à de nouvelles exigences professionnelles associées à des ressources insuffisantes et aux effets de la pandémie sur leur vie personnelle. Alors que certains enseignants ont eu du mal à faire face à cette situation et ont signalé des niveaux intenses de peur de la COVID-19 et d'épuisement professionnel, d'autres ont pu s'adapter et ont ressenti un sentiment de croissance et d'accomplissement.

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Par conséquent, la présente étude vise à examiner le rôle de la résilience dans la relation entre la peur de la COVID-19 et l'épuisement professionnel chez les enseignants sud-africains à l'aide d'une d'enquête spécialement dédiée à cette question.

Matériel et méthode. – Cette étude a considéré les enseignants d'Afrique du Sud (*n* = 355) sous l'angle de l'inventaire de *burn out* de Maslach, de l'échelle de la peur de la COVID-19 et de l'échelle-10 de résilience de Connor–Davidson.

Résultats. – Les résultats ont montré une relation positive entre la peur de la COVID-19 et l'épuisement émotionnel et la dépersonnalisation. De plus, la modélisation par équation structurelle a confirmé le rôle de la résilience dans le maintien de la bonne santé, car elle a un effet direct significatif sur l'épuisement professionnel. La résilience a également partiellement modéré l'impact de la peur de la COVID-19 sur la dépersonnalisation ainsi que l'épuisement émotionnel et a entièrement réduit l'impact de la peur du COVID-19 sur l'accomplissement personnel. Cette étude a aussi fourni des informations sur les interventions appropriées. Les enseignants qui souffrent de fatigue chronique, de désillusion et de dépersonnalisation courent un risque accru de problèmes physiques et psychologiques. Cela, à son tour, pourrait avoir un impact négatif sur le rendement au travail et entraîner un taux de roulement des personnels enseignants élevé ayant un impact négatif sur les expériences d'apprentissage des étudiants. L'amélioration de la résilience des enseignants face à la COVID-19 nécessite une approche à plusieurs niveaux qui se concentre à la fois sur les réponses individuelles et sur les réponses organisationnelles plus larges. Des interventions, telles que la réduction du stress basée sur la discussion, fondée sur la théorie cognitivo-comportementale et concentrée sur le recadrage cognitif des pensées stressantes, provoquant de l'anxiété, se sont avérées efficaces pour promouvoir la résilience des enseignants au niveau individuel.

Conclusions. – Dans l'ensemble, les résultats de cette étude confirment que la résilience est un facteur de protection important dans l'association entre épuisement professionnel et peur de la COVID-19 chez les enseignants sud-africains. Nos résultats soulignent que la promotion de stratégies individuelles et institutionnelles pour soutenir les enseignants est nécessaire pour renforcer la résilience, en particulier dans le contexte de la pandémie de la COVID-19.

1. Introduction

The global spread of the COVID-19 virus led to governments around the world taking drastic measures and implementing severe restrictions on the public in an attempt to curb the pandemic. These restrictions have included nationwide lockdowns, mandated mask wearing, closure of educational institutions and non-essential services, restrictions on travel as well as social distancing policies. There is currently a growing body of research evidence confirming that the pandemic and related restrictions have had adverse effects on mental health [53,58]. Fear represents the most common psychological response to a stressor of this nature. It is typically an adaptive response in relation to threat and promotes adaption and coping [49]. For example, fear has been found to promote the use of personal protective measures and engagement in physical social distancing [27]. However, levels of fear have drastically increased during the pandemic owing to the disruption of daily routines and ways of life, uncertainty about the trajectory of the pandemic, economic downturn, job insecurity, social isolation and loss of loved ones [58]. High levels of fear can adversely impact wellbeing and numerous studies have confirmed the association between fear of COVID-19 and adverse mental health outcomes including anxiety, depression, suicidality, post-traumatic stress disorder and substance use, for example [31,54,55]. Fear of COVID-19 has also been associated with burnout, but most studies investigating this association have been conducted among healthcare professionals, for example [1,68]. The current study aims to extend this research by investigating fear of COVID-19 among schoolteachers, specifically looking at the association of fear of COVID-19 and burnout and the potential protective role of resilience in this relationship.

Various studies, especially amongst healthcare workers, have demonstrated the negative effects of COVID-19 on frontline workers [2,27,38,61,62]. As frontline workers in the educational system, teachers were among the first to experience both pandemic-related strains and the sudden and unprecedented changes in the nature of their work [26,65]. The COVID-19 pandemic led to school systems worldwide transitioning to remote online learning, which lead to drastic changes in the modes of educational instruction and teaching practices [26]. Even before the pandemic, it was well established that the teaching profession is uniquely stressful [15]. Numerous studies, for example [8], have highlighted the prevalence of burnout experienced by teachers as a result of the multiple cognitive and emotional demands of the profession. Generally, teachers are expected to attend to the learning needs of individual students, as well as their entire class cohort, to regulate student behavior in the classroom and manage the class dynamics, while keeping the learning goals in mind, to instantly solve any problems that may arise, and to establish effective working relationships with parents, colleagues, and school administrators [51]. In this context, high levels of stress among teachers have been associated with a reduced quality of instruction, anxiety, depression, reduced life satisfaction, and teacher attrition [15,51].

Owing to the COVID-19 pandemic, teachers have experienced greater work pressure as a result of the closure of schools and the transition to emergency remote learning. They had to rapidly train and upskill in the use of digital technology and the implementation of a new pedagogical approach. They also had to guide their students to become accustomed to a different mode of learning and to manage the personal impact of the pandemic, the competing demands of working from home (e.g., childcare and looking after older family members), and the expectations of parents and school administrators [39,43]. The Job Demand-Resources (JD-R) theory [5] is regarded as an important conceptual framework to understand experiences at work and how they contribute to stress and burnout [12]. One of the central components of this model is job resources, which refers to the features of a job that are enriching, facilitate the achievement of work-related goals and assist in managing the psychological and physical demands of the

job [5]. For teachers, these resources can include perceived autonomy and latitude in decision making, administrative and leadership support and practical tools to undertake the job.

Personal resources are the second component and refer to internal skills and capacities (e.g., self-esteem, sense of coherence and resilience) that influence a person's ability to undertake a job effectively [5]. Several studies have provided evidence that personal resources act as a protective factor or buffer for job demands. For example, Guo and colleagues found that resilience was a salient protective resource in facilitating effective coping among nurses who experienced high job demands including long working hours, lower income and high ratio of patients [23]. Furthermore, Collie investigated the role of job resources (e.g., relationships with students and colleagues) and job demands (e.g., time pressure) on teacher wellbeing in Australia [12]. The study found that positive relationships with students and colleagues represented a significant personal resource that buffered the impact of job demands and reduced the likelihood of teacher turnover. In a study of Canadian teachers, Sokal and colleagues concluded that teacher attitudes towards remote online learning, their sense of efficacy regarding the use of technology and their attitude towards change were significant personal resources that had a bearing on their experience of burnout [59]. Juliana and colleagues investigated the mediating role of work engagement on the association between job-demands and job-resources and burnout among teachers from Penang [28]. The study found that job resources including supervisory support and information sharing promoted work engagement and reduced burnout. Barello and colleagues used the JD-R theoretical framework to investigate the role of perceived COVID-19 related organizational demands and threats in predicting symptoms of burnout among healthcare professionals [6]. Exposure to job demands was significantly associated with symptoms of burnout, particularly emotional exhaustion. The authors concluded that personal resources such as confidence in communication and empathy buffered the impact of job demands and reduced burnout.

Existing research, for example [12,18], has underscored that the JD-R model offers an effective framework for understanding the workplace experiences of teachers as it considers both job and personal resources. Furthermore, this framework proposes various processes related to job and personal resources that can illuminate the experiences of teachers in the context of the pandemic. The first relates to the positive association between greater job resources and personal resources. The second process, which has a bearing on the present study, relates to the potential buffering role of personal resources in mental health outcomes. The JD-R model suggests that when an individual possess these internal resources (e.g., optimism, sense of coherence and resilience), it can help to reduce burnout and, in turn, promote positive workplace outcomes [13]. Hence, the current study investigates the role of resilience as a personal resource in protecting against burnout.

Burnout refers to a persistent adverse affective state that consists of three dimensions, namely emotional exhaustion, depersonalization, and a lowered sense of personal accomplishment [37]. The dimension of emotional exhaustion is characterized by a feeling of being cognitively and physically depleted. This can lead to a sense of apathy in response to professional duties and responsibilities, as well as cynical and negative attitudes toward work. It can also result in a reduced sense of self-efficacy [37]. Chronic stress and the resultant burnout can impair teachers' capacity to utilize innovative teaching method in the classroom setting and offer an effective teaching and learning environment for the students [8]. Emerging studies, for example [41,56], performed during the time of COVID-19, suggest that teachers have experienced heightened levels of burnout as a result of the increased workload, challenges in separating the workspace from leisure time because of working from home, isolation from peers, and negotiating the changing work-related demands associated with the pandemic restrictions.

This study was performed in South Africa, where a national closure of all schools was implemented during the initial spread of the pandemic in March 2020. This approach has proven unsustainable because of the inequity in access to ICT and the reliance of many families on school-based meal programs [42]. Therefore, the government subsequently introduced a rotational schooling system in August 2020, which entailed groups of learners returning to school on a rotational basis. In February 2021, conventional classroom-based teaching was resumed and the students fully returned to daily school attendance. Excessive teacher deaths (more than 2,283 schoolteachers) related to COVID-19 were reported between March 2020 and May 2021[42]. Although there has been no confirmed association between the timing of schools reopening and the increased spread of the virus, it is likely that this contributed to elevated levels of anxiety among teachers. For example, Winter and colleagues reported that teachers in Ireland who were expected to return to work as part of a phased reopening of schools were fearful about their safety and experienced heightened levels of fear and anxiety related to concerns about infection and its implications for the health of vulnerable family members [64]. Previous studies have consistently reported an association between fear of COVID-19 and burnout as well as a range of mental health challenges, decreases in life satisfaction and general wellbeing [10,32,57]. Despite the increased risk of burnout during the pandemic, many frontline workers were able to function effectively, suggesting that resilience is a potential resource in mitigating the negative effects of fear of COVID-19 [34,52].

Psychological resilience is an adaptive personal resource that entails the ability to effectively cope with and recover from adverse life experiences [68]. Earlier research [24,52] has confirmed that resilience has a beneficial effect on a wide range of indices of mental health and wellbeing-related factors. In the context of COVID-19, resilience has been found to have a significant direct effect on mental health and psychological wellbeing among the general population [22,67]. Therefore, this study aims to extend earlier research by investigating the role of resilience as a possible mediator of the association between fear of COVID-19 and burnout among schoolteachers in South Africa.

Existing studies have highlighted the association between high levels of fear and negative mental health outcomes. For example, Sakib and colleagues reported that greater levels of fear of getting infected with COVID-19 and limited access to personal protective resources was associated with increased symptoms of depression among the general population and healthcare workers [55]. A range of studies have confirmed that fear of COVID-19 is associated with heightened anxiety, depression, post-traumatic stress and difficulties with sleeping, for example [31,58]. Given the association between fear of COVID-19 and psychological distress, we hypothesized that higher levels of fear of COVID-19 would be related to higher levels burnout. We hypothesized that:

- H1: high levels of fear of COVID-19 are related to high levels of emotional exhaustion;
- H2: high levels of fear of COVID-19 are related to high levels of depersonalization;
- H3: high levels of fear of COVID-19 are related to low levels of personal accomplishment.

Resilience has been identified as an important factor in protecting against adverse mental health outcomes and has been

consistently negatively associated with indicators of mental health problems including burnout as reported by, for example [4,27]. Hence, we hypothesized that resilience would mediate the association of fear of COVID-19 and burnout. Specifically, we hypothesized that:

- H4: resilience is a mediator of the impact of fear of COVID-19 on emotional exhaustion;
- H5: resilience is a mediator of the impact of fear of COVID-19 on depersonalization;
- H6: resilience is a mediator of the impact of fear of COVID-19 on personal accomplishment.

2. Materials and Methods

2.1. Participants

A convenience sample of 355 primary and secondary schoolteachers in South Africa participated in this study. Given that the population comprised 444,900 schoolteachers [21], this represented an error margin of 5.09%, with a confidence interval of 95%. Table 1 presents an overview of the sample, showing that 76.6% of the sample were women, 82.3% worked in the Western Cape Province, 61.7% lived in an urban area, and 61.1% taught at a primary school. The mean age of the sample was 41.89 years (SD = 12.42), ranging between 23–73 years. The mean number of years participants worked as teachers was 15.7 years (SD = 11.75), ranging between 1 and 48 years. The demographic distribution of the sample compares favorably with population parameters as reported in the OECD Teaching and Learning International Survey [40]. This survey reported that the majority of teachers in South Africa are women (60%), on average 43 years old with an average of 15 years work experience.

2.2. Measures

All the participants completed the following instruments: Fear of COVID-19 Scale (FCV-19S; [3]), Connor–Davidson Resilience Scale-10 (CD-RISC10; [9]), and the Maslach Burnout Inventory (MBI; [36]). All these instruments have been extensively validated and were not adapted in the current study. In addition, all participants completed a brief demographic questionnaire. Table 1

Table 1
Demographic Description of the Sample.

Variable	Category	n	%
Gender	Male	83	23.1
	Female	272	76.6
	Non-binary	1	0.3
Province	Eastern Cape	12	3.4
	Western Cape	292	82.3
	Gauteng	31	8.7
	KwaZulu-Natal	10	2.8
	Mpumalanga	2	0.6
	North West	3	0.8
	Limpopo	2	0.6
	Free State	3	0.8
Area of residence	Rural	136	38.3
	Urban	219	61.7
Grade teaching	Preprimary	14	3.9
	Primary	217	61.1
	Secondary	122	34.4
	Learning support	2	0.6
Age		Mean = 41.89	SD = 12.42
Years teaching		Mean = 15.7	SD = 11.75

lists the questions that were included in the demographic questionnaire.

The FCV-19S represents a 7-item measure of a fear reaction specifically related to COVID-19. Responses to the 7 items are made on a 5-point scale that ranges from 1 (strongly disagree) to 5 (strongly agree). An example item of the FCV-19S is "I cannot sleep because I'm worrying about getting Corona." According to the original authors of the instrument, both classical test theory and Rasch analysis have shown that this scale has satisfactory reliability (α = 82) and validity data. Subsequent studies have also largely confirmed the reliability and validity of the scale in various contexts (e.g., USA: [47]; Spain: [35]; Malaysia: [44]). The scale has also been validated for use in South Africa, with [49] reporting satisfactory reliability and validity on the basis of parametric and non-parametric item response theory as well as classical test theory.

The CD-RISC10 is a 10-item scale that is derived from the original 25-item CD-RISC developed by [14] to assess the ability to thrive despite adversity. This instrument is scored on a 5-point scale that ranges from 0 (not true at all) to 4 (true nearly all of the time). An example item of the scale is "I tend to bounce back after illness, injury, or other hardships." The short version of the CD-RISC has demonstrated satisfactory reliability and validity, and the unidimensionality of the scale was also confirmed [9]. Similar satisfactory psychometric properties were confirmed in various contexts (e.g., China: [11]; Spain: [7]; Canada: [25]).

The MBI is a 22-item measure of burnout that assesses three separate dimensions that are said to constitute burnout: personal accomplishment, emotional exhaustion, and depersonalization. The emotional exhaustion subscale refers to feelings of fatigue and the drained emotional energy experienced as a result of the work experience, and it is regarded as the core component of burnout. A sample item of the emotional exhaustion subscale is "I feel used up at the end of the workday." The depersonalization dimension refers to indifferent feelings toward students and colleagues. An example item of the depersonalization dimension is "I've become more callous toward people since I've taken this job." Finally, the personal accomplishment dimension refers to the sense of accomplishment in relation to the work experience. An example item of personal accomplishment is "I have accomplished many worthwhile things in this job." Responses to the 22 items are made on a 7-point scale ranging from 0 (never) to 6 (every day). In their original validation study, Maslach and Jackson reported satisfactory reliability and validity data for the MBI[36]. More recent studies in educational settings have also confirmed the reliability and validity of the MBI [33,46]. The three-factor structure and the reliability of the MBI when used in an educational setting in South Africa have also been confirmed [48].

2.3. Procedure

A survey design was used for the study. We used Google Forms to create an electronic version of the survey, and we mainly recruited the participants via social media. In this regard, we approached the administrators of Facebook groups that contain teachers in South Africa, to request their permission to post a link on their Facebook page and invite them to participate in the survey. We also held meetings with certain provincial education departments to explain the nature and goals of the current study and to request their assistance in distributing the electronic link.

2.4. Ethics

The Institutional Review Board of the University of the Western Cape (ethics reference number: HS21/3/8) provided ethical

approval to perform the study. Participation was voluntary, anonymity was assured and all participants provided informed consent. As the survey had the potential to cause distress, the contact details of mental health services that could be utilized free of charge, were also provided to respondents.

2.5. Data Analysis

IBM SPSS Statistics for Windows (version 26; IBM Corp., Armonk, NY, USA) was used to obtain the intercorrelations between variables as well as the descriptive statistics and reliabilities (alpha and omega) of the various scales. Moreover, to examine the potential mediating role of fear of COVID-19, path analysis with IBM SPSS Amos (version 26; IBM Corp.) was used. The significance of the direct and indirect effects in the path analysis model was evaluated using the 95% confidence interval (95% CI), and effects were regarded as significant if the 95% CI did not contain zero.

3. Results

The descriptive statistics, reliabilities, and intercorrelations are reported in Table 2. The mean score for the FCV-19S ($M = 20.9$, $SD = 7.1$) was found to be significantly higher than those reported for developed contexts (e.g., Spain: [35], $M = 16.79$, $SD = 6.04$, $t_{354} = 10.86$, $P < 0.001$; Italy: [60], $M = 16.86$, $SD = 6.06$, $t_{354} = 10.67$, $P < 0.001$), as well as that reported for a developing country, namely India ([19] $M = 18.00$, $SD = 5.68$, $t_{354} = 7.66$, $P < 0.001$). No significant differences ($t_{352} = 1.67$, $P = 0.095$) were found between men ($M = 19.7$, $SD = 7.2$) and women ($M = 21.2$, $SD = 7.1$).

Table 2 shows that all the measuring instruments demonstrated satisfactory reliability, with *alpha* and *omega* values ranging between 0.84 and 0.95. In terms of intercorrelations, Table 2 reflects that fear of COVID-19 was positively associated with emotional exhaustion ($r_{353} = 26$, $P < 0.001$) as well as depersonalization ($r_{353} = 0.24$, $P < 0.001$), thus indicating that high levels of fear of COVID-19 are associated with high levels of emotional exhaustion and depersonalization. There was a negative relationship between resilience and fear of COVID-19 ($r_{353} = -0.13$, $P = 017$), emotional exhaustion ($r_{353} = -0.28$, $P < 0.001$), and depersonalization ($r_{353} = -0.30$, $P < 0.001$) as well as a positive relationship between resilience and personal accomplishment ($r_{353} = 50$, $P < 0.001$). Thus, high levels of resilience are related to low levels of emotional exhaustion and depersonalization as well as high levels of personal accomplishment.

Fig. 1 shows the path analysis model that was employed to examine the direct and mediating effects. The model shows fear of COVID-19 as the predictor variable, whereas the three dimensions of burnout are regarded as the outcome variables. In addition, resilience is regarded as a presumed mediator.

Table 3 presents the direct and indirect effects of fear of COVID-19 as obtained through path analysis. All of the effects were significant, except for the association between fear of COVID-19 and personal accomplishment. Thus, all the hypotheses, with the exception of H3, were confirmed.

Thus, the results obtained in Table 3 confirm the following:

- high levels of emotional exhaustion are associated with high levels of fear of COVID-19 ($\beta = 229$, CI 95% [0.145, 0.309], $P < 0.001$);
- high levels of depersonalization are associated with high levels of fear of COVID-19 ($\beta = 201$, CI 95% [0.120, 0.287], $P < 0.001$);
- resilience partially mediated the association between fear of COVID-19 and emotional exhaustion ($\beta = 032$, CI 95% [0.015, 0.108], $P = 0.020$);
- resilience partially mediated the association between fear of COVID-19 and depersonalization ($\beta = 034$, CI 95% [0.015, 0.095], $P = 0.019$);
- resilience fully mediated the association between fear of COVID-19 and personal accomplishment ($\beta = -0.063$, CI 95% [−0.107, −0.018], $P = 0.026$).

Moreover, according to Table 3, apart from the mediating role of resilience, it is also significantly negatively associated with emotional exhaustion ($\beta = -0.251$, CI 95% [−0.336, −0.165], $P < 0.001$) and depersonalization ($\beta = -0.270$, CI 95% [−0.352, −0.187], $P < 0.001$) and positively associated with personal accomplishment ($\beta = 496$, CI 95% [0.419, 0.566], $P < 0.001$).

4. Discussion

The COVID-19 pandemic has differentially impacted frontline workers. Teachers work at the frontlines of the education system and the nature of their professional roles and responsibilities have been radically transformed by the pandemic. This has left teachers vulnerable to mental health challenges and it remains imperative to identify protective resources that can buffer against psychological distress. In this study, we investigated the role of resilience as a potential mediator in the relationship between burnout and fear of COVID-19 among schoolteachers in South Africa. We herein report several important findings. First, levels of fear of COVID-19 in the current study sample were higher than the levels reported in other settings (e.g., Spain: [35]; India: [19]). This may be ascribed to the distinctive contextual factors in South Africa that impact the teachers' ability to implement COVID-19-related safety protocols. This includes the inadequate infrastructure of schools, which results in overcrowded and poorly ventilated classrooms, the lack of proper sanitation facilities, and the insufficient provision of cleaning materials [42]. Furthermore, reports of excess teacher deaths related to COVID-19 and the presence of comorbidities among 50% of the teachers in the country may have aggravated the teachers' fear of infection [42,63].

Second, the study confirmed that greater levels of fear of COVID-19 are related to increased emotional exhaustion and depersonalization. Similar results have been documented among frontline medical care workers, for example [1,2,4], and ascribed to the lack of preparedness, increased workloads, unpredictable changes in job schedules, inadequate resources to engage in self-protective behavior, and contending with those who are not always adhering to social distancing or other safety protocols. The factors associated with enhanced vulnerability to depersonalization included feeling pressured or uncomfortable within the work setting, unsupportive administrators, low salaries, not being able to spend a sufficient amount of time with family, and feelings of self-reproach and guilt regarding exposing loved ones to the danger of infection [1,27,29]. Furthermore, frontline medical workers reported feeling highly conflicted about their professional

Table 2
Descriptive Statistics, Reliabilities, and Intercorrelations Between Study Variables.

	1	2	3	4	5
1. Fear of COVID-19	–				
2. Resilience	−0.13*	–			
3. Emotional exhaustion	0.26**	−0.28**	–		
4. Depersonalization	0.24**	−0.30**	0.71**	–	
5. Personal accomplishment	−0.09	0.50**	−0.31**	−0.34**	–
Mean	20.9	26.9	25.0	15.2	20.0
SD	7.1	8.0	7.5	7.4	6.9
Alpha	0.91	0.95	0.94	0.85	0.84
Omega	0.91	0.95	0.94	0.86	0.84

**: $P < 0.001$; *: $P < 0.05$.

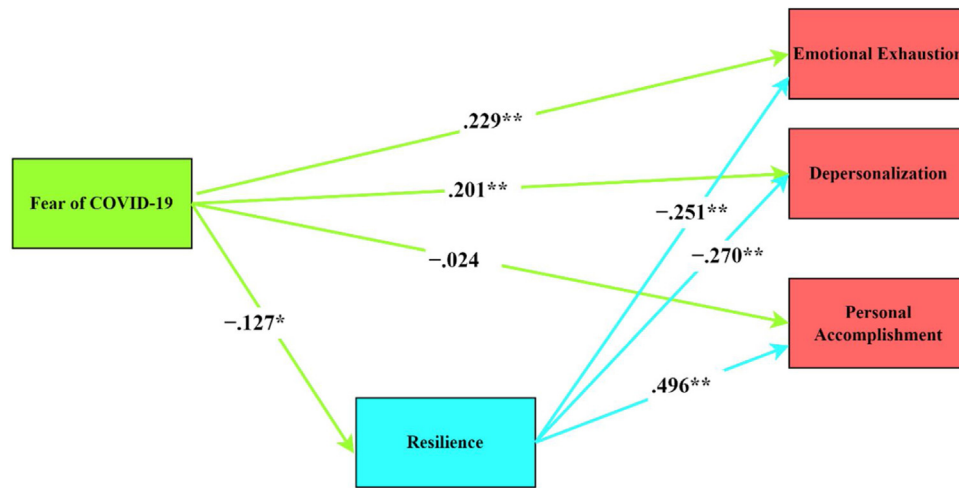A. Padmanabhanunni, T.B. Pretorius, J.-P. Bouchard et al.

Fig. 1. Structural Equation Model of the Interrelationship Between Variables. Note: regression weights are standardized. **: $P < 0.001$; *: $P < 0.05$.

Table 3
Direct and Indirect Effects of Fear of COVID-19 and Resilience.

Effect	Beta	SE	β	95% CI	P
Direct Effects					
Fear of COVID-19 → Resilience	0.142	0.064	−0.127	[−0.218, −0.035]	0.026
Fear of COVID-19 → Emotional exhaustion	0.384	0.087	0.229	[0.145, 0.309]	0.001
Fear of COVID-19 → Depersonalization	0.289	0.075	0.201	[0.120, 0.287]	0.001
Fear of COVID-19 → Personal accomplishment	−0.024	0.044	−0.024	[−0.095, 0.055]	0.660
Resilience → Emotional exhaustion	−0.376	0.080	−0.251	[−0.336, −0.165]	0.001
Resilience → Depersonalization	−0.347	0.064	−0.270	[−0.352, −0.187]	0.001
Resilience → Personal accomplishment	0.427	0.045	0.496	[0.419, 0.566]	0.001
Indirect Effects					
Fear of COVID-19 → Resilience → Emotional exhaustion	0.053	0.028	0.032	[0.015, 0.108]	0.020
Fear of COVID-19 → Resilience → Depersonalization	0.049	0.024	0.034	[0.015, 0.095]	0.019
Fear of COVID-19 → Resilience → Personal accomplishment	−0.061	0.027	−0.063	[−0.107, −0.018]	0.023

mandate to provide care, as it necessitated placing themselves at an increased risk of contracting a life-threatening disease and endangering their own families [1].

It is probable that similar experiences contribute to emotional exhaustion and depersonalization among teachers. School closures required teachers to quickly upskill in information communication technology and online teaching design. This could have placed tremendous pressure on teachers to master a new way of working and contributed to emotional exhaustion. Teachers with Internet access may have been more likely to be exposed to information on COVID-19, which aggravated their fear of the virus, precipitating depersonalization. The mandate to return to conventional classroom teaching may have contributed to a sense of despair and hopelessness within schoolteachers about being able to protect their families and themselves. Furthermore, having to manage school children who may not always understand the need for social distancing, sanitizing, and mask wearing can heighten the teachers' anxiety regarding the transmission of the virus and their risk of infection [45].

Third, the study lent further support to existing findings that resilience has a direct impact on all three dimensions of burnout, suggesting a health-sustaining role for resilience. Resilience also fully mediated the relationship between fear of COVID-19 and personal accomplishment, but it only partially mediated the dimensions of emotional exhaustion and depersonalization. Some studies conducted during the pandemic, for example [68], have confirmed that psychological resilience is a protective resource in

managing fear of COVID-19 and pandemic-related burnout, anxiety and distress. Among the factors that have been found to confer resilience are feeling supported and valued at work, having a good social support base, and possessing high levels of self-efficacy [45,50]. Although these variables were not part of the current study variables, it is probable that the presence of some of these protective factors may have contributed to the resilience of teachers.

Earlier research among healthcare workers [16,17,30] has also documented that those with increased levels of work-related strain but enhanced autonomy for decision-making, experience a greater sense of control, empowerment, and personal accomplishment. This can be explained by the Job Demands–Control–Resources model [30], which suggests that people with reduced sense of subjective authority, limited decision-making latitude, and low levels of work-related support, experience heightened stress and anxiety, leading to their increased vulnerability to burnout. When this model is applied to teachers, it is probable that those who appraised the return to conventional schooling, as an opportunity to reinstate a sense of normalcy and salvage the academic year for their students, have experienced more satisfaction and personal accomplishment.

According to the theory of Psychological Need Thwarting, psychological distress can arise when needs for relatedness are not met [66,69]. A central motivational factor contributing to job satisfaction among teachers is the relationships and connections they develop with their student and colleagues. Online teaching

and learning as well as fear of contracting COVID-19 in the classroom can impede the cultivation of meaningful relationships in the work environment and contribute to psychological distress.

This study potentially provides insights into appropriate interventions. Teachers who experience chronic fatigue, disillusionment, and depersonalization are at increased risk for physical and psychological problems. This, in turn, could adversely impact job performance and lead to high turnover, which adversely impacts the students' learning experiences. Several studies have reported that enhancing resilience among teachers requires a multilevel approach that focuses on both individual- and broader organizational-level responses. Interventions such as inquiry-based stress reduction, which is grounded in cognitive behavioral theory and focuses on cognitive reframing of stressful thoughts that provoke anxiety, have been found to be effective in promoting teacher resilience at the individual level [69]. Organizational-level interventions, on the other hand, aim to ameliorate the structural causes of burnout and can include increasing the practical resources available to cope with the pandemic (e.g., sufficient resources for personal protection against the virus and upskilling in the use of digital technology), as well as offering programs that focus on self-care and health promotion [20]. These interventions would prevent teacher attrition and thus ensure the sustainability of the educational project. Future longitudinal studies can investigate how the variables assessed in the study change as the pandemic progresses. In addition, the majority of teachers in the sample were female and future studies could include a better gender distribution and assess for any gender differences between the variables.

4.1. Limitations

There were several limitations in this study. For instance, data generated for the study was obtained from self-report questionnaires that were distributed via email and social networking websites. This may have resulted in potential selection bias, in that teachers who have greater access to the internet may have been more likely to respond to the survey. In addition, the sample used in the study predominantly constituted teachers from one province and, hence, may not be representative of all teachers in South Africa. Future research using a broader sample is, therefore, required to confirm the findings. The study was also performed at one point in time and represents a snapshot of the experiences of teachers. Hence, longitudinal research could investigate the impact of psychological resilience on the association between burnout and fear of COVID-19 over a longer period of time.

5. Conclusions

Overall, the results obtained in this study confirm that resilience is a salient protective factor in the association between burnout and fear of COVID-19 among South African schoolteachers. Our findings underscore that promoting individual- and institutional-level strategies to support teachers is necessary to build resilience, especially in the context of the COVID-19 pandemic.

Institutional Review Board Statement

The study was conducted according to the guidelines of the Declaration of Helsinki and approved by the Humanities and Social Science Research Ethics Committee of the University of the Western Cape (Ethics reference number HS21/3/8 14 May 2021).

Informed Consent Statement

Informed consent was obtained from all subjects involved in the study.

Data Availability Statement

The data sets generated and/or analyzed during the current study are available from the corresponding author upon reasonable request.

Disclosure of interest

The authors declare that they have no competing interest.

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