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OBM Neurobiology

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Research Article

Generalized Resistance Resources in the Time of COVID-19: The Role of Sense of Coherence and Resilience in the Relationship between COVID-19 Fear and Loneliness among Schoolteachers

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Academic Editors: Ami Rokach and David Berman

Special Issue: The Many Shades of Loneliness

OBM Neurobiology
2022, volume 6, issue 3
doi:10.21926/obm.neurobiol.2203130

Received: April 30, 2022
Accepted: August 03, 2022
Published: August 15, 2022

Abstract

Fear has been the most common emotional response to the COVID-19 pandemic, and excessive fear is associated with various indices of psychological distress, particularly loneliness. Although most people have experienced pandemic-related fear and distress, certain groups who are on the front of service provision have experienced the pandemic in distinct ways, owing to its impact on the nature of their work. Schoolteachers represent one such group; therefore, it is imperative to identify resources that can safeguard against negative mental-health outcomes in schoolteachers. The current study investigated the potential protective role of sense of coherence (SOC) and resilience in the relationship between COVID-19 fear and loneliness. The participants were South African schoolteachers (N = 355); the participants completed the Fear of COVID-19 Scale, the University of California Loneliness Scale, the Connor-Davidson Resilience Scale-10, and the Sense of Coherence Scale-13. The results indicated that SOC and resilience had significant direct effects on loneliness,

thereby suggesting their health-sustaining role. SOC and resilience also fully mediated the relationship between COVID-19 fear and loneliness. Therefore, although the provision of material resources is important, it is equally necessary to enhance people's ability to comprehend, give meaning to, and manage the challenges associated with the pandemic. A salutogenic approach to mental health promotion in the workplace may be beneficial for enhancing SOC and resilience among schoolteachers.

Keywords
Loneliness; fear of COVID-19; resilience; sense of coherence; mediator

1. Introduction

1.1 Impact of the COVID-19 Pandemic on Schoolteachers

The COVID-19 pandemic and related containment measures disrupted education systems worldwide and affected teachers, school administrators, and students [1, 2]. Teachers had to adapt to unprecedented changes in their work roles and responsibilities because of the introduction of online learning. In most countries, teachers were required to upskill in information technology, manage increased workloads, and engage with students digitally [1, 3]. In addition, they had to negotiate the impact of the pandemic on their personal lives and relationships and had to adapt to rapidly changing government policy pertaining to the educational system [3]. The current study was undertaken in South Africa. At the time of the study (May 2021–July 2021), the South African government had mandated a return to conventional classroom teaching because of the unsustainability of online teaching [4]. A substantial proportion of the South African population does not have access to the internet or digital technology [5, 6]. Therefore, school closures in South Africa had broad socioeconomic and educational consequences for learners and teachers, leading to the widening of existing socioeconomic inequalities and exacerbating learning losses, particularly in rural schools [3]. Teachers in resource-poor schools have reported inequitable access to digital resources and training in information and communication technology, as well as a need to upskill the existing pedagogical skills that do not cater to the requirements of online teaching and learning [7]. Therefore, the efficacy of measures that were used to counter losses of teaching and learning time depended on whether the teachers and learners were based in poorer or more advantaged urbanized settings [5, 7, 8].

1.2 Fear of COVID-19 Among Schoolteachers

The return to conventional teaching in South Africa caused heightened levels of fear among school teachers, owing to their increased susceptibility to infection [9]. Although fear is an adaptive response to a real threat, chronic and disproportionate fear can have adverse effects on mental health [9], such as depression, post-traumatic stress disorder (PTSD), hopelessness, and loneliness [10-13]. Several rural public schools in South Africa are underdeveloped; therefore, they do not have access to clean running water or adequate sanitary facilities and are characterized by poor school infrastructure and overcrowded classrooms [6-8]. These factors can increase the fear of virus

transmission in the school setting. In South Africa, mortality due to COVID-19 infection may also be ascribed to inadequate public health infrastructure [14]. The high mortality rates associated with COVID-19 are likely to aggravate the fear of contracting the virus and potentially spreading it to loved ones [15]. The social isolation resulting from the lockdown measures and confinement was characterized by boredom, anxiety, distress, and uncertainty about the future [10]. Reduced social and physical contact has also been associated with feelings of hopelessness, suicidal thoughts, depression, PTSD, and substance abuse [16, 17]. Furthermore, several studies have documented the association between COVID-19 fear and various indices of psychological distress, particularly depression, loneliness, anxiety, and PTSD [18-20].

Various studies have investigated COVID-19 fear and loneliness, particularly among older adults and geriatric groups [21-23]. However, comparatively fewer studies have explored COVID-19 fear and loneliness among diverse populations and professional groups [24]. Higher levels of COVID-19 fear have been associated with increased loneliness in the general population [25]. Loneliness is defined as an unpleasant subjective emotional experience arising from the perception that one's social needs are not being met [26]. Those with greater fear of contracting the virus are more likely to adopt social-distancing measures and adhere to shelter-at-home mandates, which may further reduce the frequency and quality of their social interactions and potentially lead to loneliness [27]. Existing studies have confirmed that teachers' job satisfaction is influenced by the quality of their relationships with students, school administrators, and peers [28]. The closure of schools and transition to online learning aggravated social isolation and loneliness among teachers because they could not interact in the same way as they were doing in the conventional mode of teaching. MacIntyre et al. [15] reported that, as with the general population, teachers tend to worry more about the health of their loved ones than their wellbeing. Therefore, with the reopening of schools, teachers who experienced greater fear of contracting COVID-19 may further isolate themselves from their families and significant others to prevent virus transmission and protect their loved ones. This increased isolation may further heighten loneliness. Therefore, we postulated that COVID-19 fear would lead to increased social isolation and the avoidance of others, leading to higher levels of loneliness:

H1: COVID-19 fear is positively associated with loneliness.

1.3 Differential Vulnerability to Psychological Distress

Despite the severe disruption and fear caused by the pandemic, many people have adapted effectively to this unprecedented stressor [29]. This differential ability to cope with stressors reveals the presence of protective factors that facilitate coping [30]. This study focused on two such factors, namely, resilience and sense of coherence (SOC). Resilience is defined as the ability to cope with challenges produced by stressful events or the ability to adapt, despite experiences of adversity [31]. COVID-19-related studies on resilience have predominantly focused on healthcare workers. Studies on healthcare workers have demonstrated that resilience mediates the relationship between psychological distress (i.e., depression and anxiety) and burnout [32, 33]. Longitudinal studies conducted on the general population during the pandemic [34] have also reported that high resilience acts as a safeguard against negative mental-health outcomes. Yıldırım et al. [35] investigated the role of resilience and COVID-19 fear in the relationship between perceived risk and mental health problems. They reported that resilience mediated the effect of COVID-19 fear on

depression, anxiety, and stress among healthcare professionals. Karagöz et al. [36] reported that increased COVID-19 fear decreased psychological resilience and life satisfaction among Turkish healthcare professionals. Frequent exposure to COVID-19 cases and deaths may probably aggravate fear and increase vulnerability to burnout and erode coping resources.

SOC is linked to resilience and is grounded in the prominent salutogenic model of health developed by Antonovsky [37]. SOC refers to a global cognitive orientation in which an individual perceives the environment as comprehensible, manageable, and meaningful and stressors as challenges that can be overcome. According to Antonovsky [37], generalized resistance resources (GRRs; i.e., personal, material, cultural, and social resources) generate the life experiences necessary to develop a strong SOC, which in turn mobilizes GRRs in the face of adversity. Antonovsky [37] emphasizes that GRRs are potential resources that should be identified and adopted before they can be used to manage a stressor effectively. Although people may differ drastically in the types of resources that are available to them, those with a stronger SOC are more likely to perceive adversity and stressful events as coherent (as opposed to chaotic), enjoy a sense of confidence in their ability to manage the stressor and be more willing to locate and utilize available resources.

Several studies [38-41] have reported that SOC plays a mediating role in the relationship between stress (which is the tension an individual experiences in relation to an external or internal stressor) and psychological distress (which is a negative emotional response arising from difficulty coping with a stressor). A strong SOC can be a source of resilience. Dymecka et al. [38] highlighted that SOC is an important factor in managing and reducing anxiety, particularly related to COVID-19. They investigated the relationship between COVID-19 fear, stress, SOC, and life satisfaction and reported that SOC was higher in individuals with COVID-19 fear, potentially due to an appraisal that the threat of the contagion was credible and required changes in ways of living. A stronger SOC also mediates the relationships between COVID-19 fear, anxiety, subjective wellbeing, and post-traumatic growth [39, 40]. Longitudinal studies [41] have also found that SOC positively affects individuals' responses to new challenges and improves their quality of life.

On the basis of these findings, we postulated that the association between COVID-19 fear and loneliness would be weaker among those who enjoy higher levels of resilience and SOC. In particular, we hypothesized the following:

H2: Resilience is negatively associated with loneliness.

H3: SOC is negatively associated with loneliness.

H4: Resilience mediates the relationship between COVID-19 fear and loneliness.

H5: SOC mediates the relationship between COVID-19 fear and loneliness.

In addition, we also compared the levels of loneliness among schoolteachers in South Africa with those reported in studies undertaken before and during the pandemic.

2. Materials and Methods

2.1 Participants

Table 1 provides a description of the sample. The participants comprised a convenience sample of schoolteachers in South Africa, with most participants residing in the Western Cape Province (82.3%). Most participants were women (76.6%) and worked in primary school settings, i.e., grades 1–7 (61.1%). The participants' mean number of working years was 15.7 years (SD = 11.75, range = 1–48), and the sample's mean age was 41.89 years (*SD* = 12.42, range = 23–73). In 2021, South Africa

had 400 000 teachers [6], and our sample of 355 represented a 5.09% margin of error with a 95% confidence interval. The study was conducted in accordance with 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; May 14, 2021). Informed consent was obtained from all participants, with participation being voluntary. Confidentiality and anonymity were assured as no identifying data were collected during the survey. In addition, only two supervising authors had access to the completed questionnaires and data.

Table 1 Demographic description of the sample.

Variable	Categories	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	Pre-primary	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

2.2 Instruments

The participants completed a brief demographic survey consisting of the Fear of COVID-19 Scale [FCV-19S] [42], the University of California Loneliness Scale [UCLA-LS] [43], the Connor-Davidson Resilience Scale-10 [CD-RISC-10] [44], and the Sense of Coherence Scale-13 [SOC-13] [37]. The 7-item FCV-19S assesses the emotional fear reaction related to COVID-19. A sample item on the scale is, *"I cannot sleep because I'm worrying about getting coronavirus-19."* The participants responded using a 5-point scale, ranging from 1 to 5, with the scale anchors being *strongly disagree* and *strongly agree*. The original scale development study reported a satisfactory estimate of internal consistency (α = 0.82) and correlations with depression, anxiety, and perceived vulnerability to disease, which supported the concurrent validity of the scale [1]. Similar acceptable reliability coefficients have

been reported in a wide variety of contexts, for example in Russia and Belarus: α = 0.81 [45]; in Israel: α = 0.81 [46]; in Japan: α = 0.87 and ω = 0.92 [47], and also in South Africa [48].

The 20-item UCLA-LS is widely used in the measurement of loneliness and is scored on a 4-point scale ranging from 1 to 4. The anchors of the scale are *never* and *often*. A sample item on the scale is, *"How often do you feel left out?"* The authors who developed the scale have reported acceptable reliability coefficients (α = 0.89–0.94) for several samples [43]. The scale was reliable in several contexts, for example in Spain: α = 0.85 [49], in India: α = 0.86 [50], and in Greece: α = 0.90 [51]. The satisfactory reliability (α = 0.81 and 0.92) of the UCLA-LS was demonstrated in two samples of young adults in South Africa [26, 52]. The dimensionality of the UCLA-LS was confirmed by Pretorius in South Africa [53], who reported that it is best conceptualized as a total scale with three subscales.

The CD-RISC-10 is a short version of the original 25-item resilience scale developed by Connor and Davidson [54]. The 10-item scale is scored on a 5-point scale ranging from 0 to 4. The scale anchors are "*not true at all" a*nd "*true nearly all of the time*." A sample item on the CD-RISC-10 is, *"Under pressure, I stay focused and think clearly."* The short version of the resilience scale demonstrated acceptable reliability (α = 0.85) in the initial validation study [44]. A study on the moderating role of resilience in the relationship between childhood maltreatment and psychiatric symptoms validated the scale [44]. The CD-RISC-10 has been used in several studies with satisfactory reliability estimates; for example studies based in China: α = 0.88 [55], in Germany: α = 0.81 and ω = 0.82 [56], and in Spain: α = 0.86 [57].

The SOC scale is a short version of the original 29-item scale and comprises 13 items measuring an individual's capacity to utilize internal and external resources to navigate stressors. A sample item on the scale, which is scored on a 7point scale, is, *"How often do you have feelings that you're not sure you can keep under control?"* A 2017 review reported that the scale had been used in at least 48 countries and translated into 49 languages, with reliability coefficients in these studies ranging from 0.70 to 0.95 [58].

2.3 Procedure

We used Google Forms to create an electronic version of the measuring instruments, including the demographic survey. We approached the administrators of several teacher groups on Facebook and requested permission to post a link to the survey in these groups. In addition, we shared the goal and purpose of our study with officials from the education department, who agreed to circulate the link to the survey. Data collection occurred between May 2021 and July 2021.

2.4 Data Analysis

We used IBM SPSS Statistics for Windows (version 26; IBM Corp., Armonk, NY, USA) to obtain reliabilities (alpha and omega), to determine intercorrelations between variables (determined using the Pearson's correlation), and for descriptive statistics (mean and standard deviation). In addition, the differences between men and women in terms of all the variables as well as the relationship between age and all the variables were examined using the t-test and Pearson's correlation, respectively. We also used IBM SPSS Amos (version 26; IBM Corp.) to examine the potential mediating role of SOC and resilience in the association between COVID-19 fear and loneliness. In the structural equation model using the Amos approach, SOC and resilience were hypothesized to be parallel mediators, whereas COVID-19 fear and loneliness were assumed to be independent and

dependent variables, respectively. We used maximum likelihood estimation and bootstrapped confidence intervals (95%) to evaluate the significance of direct and indirect effects. To control for the potential confounding role of sex and age, these variables were added to the structural equation model as covariates. To avoid missing data, all items of the instrument were starred to indicate that a response was required.

3. Results

The intercorrelations between the study variables, reliabilities, and descriptive statistics are listed in Table 2. The 95% confidence intervals are reported above the diagonal and the correlation coefficients below the diagonal.

Table 2 Descriptive statistics, reliabilities, and intercorrelations between variables.

Variables and Indices	1	2	3	4
1. Fear of COVID-19	—	[0.10, 0.30]	[-0.31,0.11]	[-0.23, –0.02]
2. Loneliness	0.21***	—	[-0.69, –0.57]	[-0.48, –0.31]
3. Sense of Coherence	-0.21***	-0.64***	—	[0.37, 0.53]
4. Resilience	-0.13**	-0.40***	0.45***	—
Mean	20.9	47.2	55.9	26.9
SD	7.1	11.3	11.6	8.0
Alpha	0.91	0.92	0.81	0.95
Omega	0.91	0.92	0.81	0.95

*** $p < 0.001$, ** $p < 0.01$

The mean loneliness score was 47.2 (*SD* = 11.3), which was higher than those reported in studies conducted before or during the pandemic. A study [49] reported a mean loneliness score of 30.5 (*SD* = 8.4, $t_{354} = 27.66$, $p < 0.001$) for a sample consisting of older Spanish citizens, whereas another study [59] reported a mean score of 41.7 (*SD* = 11.5, $t_{354} = 9.03$, $p < 0.001$) for older individuals living in a nursing home in Turkey. Loneliness among the current sample was significantly higher than the mean score of 43.8 (*SD* = 13.5, $t_{354} = 5.61$, $p < 0.001$) reported by a study [60] for a sample of adult US citizens during COVID-19. Moreover, loneliness levels in the current study were significantly lower ($t_{354} = -3.21$, $p = 0.001$) than those reported for a sample of young adults (mean age = 21.95) in South Africa (*M* = 49.1, *SD* = 11.6) during COVID-19 [26], but significantly higher ($t_{354} = -3.21$, $p < 0.001$) than those reported for a sample of young adults (mean age = 20.98) in South Africa (*M* = 38.8, *SD* = 7.8) before the pandemic [52].

The results presented in Table 1 indicate that all measuring scales demonstrated acceptable internal consistency (α and ω = 0.81–0.95). The results regarding intercorrelations indicated that COVID-19 fear was positively related to loneliness ($r = 0.21$, $p < 0.001$) and negatively related to SOC ($r = -0.21$, $p < 0.001$) and resilience ($r = -0.13$, $p < 0.017$). Thus, greater COVID-19 fear was associated with higher levels of loneliness and lower levels of SOC and resilience. Loneliness was also negatively correlated with SOC ($r = -0.64$, $p < 0.001$) and resilience ($r = -0.40$, $p < 0.001$), thereby indicating that higher levels of SOC and resilience were associated with lower levels of loneliness.

Table 3 presents the descriptive statistics for men and women in terms of all the variables, the results of the t-test used for assessing the differences between men and women, and the correlation of the variables with age.

Table 3 Descriptive statistics for men and women, results of t-test, and correlation of variables with age.

Variables	Men				Women				t-value	r with age
	$\bar{X}$	SD	Mdn	IQR	$\bar{X}$	SD	Mdn	IQR		
1. FCV-19	19.7	7.2	19	12	21.2	7.1	21	11	1.68	0.05
2. Loneliness	43.4	9.5	43	13	48.3	11.6	48	18	3.49**	-0.12*
3. SOC	59.1	10.6	59	14	54.9	11.7	55	14	2.94*	0.19**
4. Resilience	29.2	7.8	30	13	26.2	7.9	27	10	3.03*	0.08

Note. FCV-19 = Fear of COVID-19, SOC = Sense of Coherence, Mdn = Median, IQR = Interquartile Range. ** $p < 0.001$, * $p < 0.01$

Women reported higher levels of loneliness ($M = 48.3$, $SD = 11.6$, $t_{353} = 3.49$, $p < 0.001$), lower levels of SOC ($M = 54.9$, $SD = 11.7$, $t_{353} = 2.94$, $p = 0.004$), and lower levels of resilience ($M = 26.2$, $SD = 7.9$, $t_{353} = 3.03$, $p = 0.003$) than men (loneliness: $M = 43.4$, $SD = 9.5$; SOC: $M = 59.1$, $SD = 10.6$; resilience: $M = 29.2$, $SD = 9.5$; Table 3). Moreover, age was negatively related to loneliness ($r = -0.12$, $p = 0.03$), thereby indicating that younger participants reported higher levels of loneliness than older participants. Age was also positively related to SOC ($r = 0.19$, $p < 0.001$); therefore, older participants reported higher levels of SOC than younger participants.

The structural equation model used to assess the roles of SOC and resilience in the association between COVID-19 fear and loneliness is presented in Figure 1. In this model, COVID-19 fear is the predictor variable, loneliness the dependent variable, and SOC and resilience the joint mediators. Because of the relationship between age and sex, and loneliness, these variables were included in the structural model as covariates.

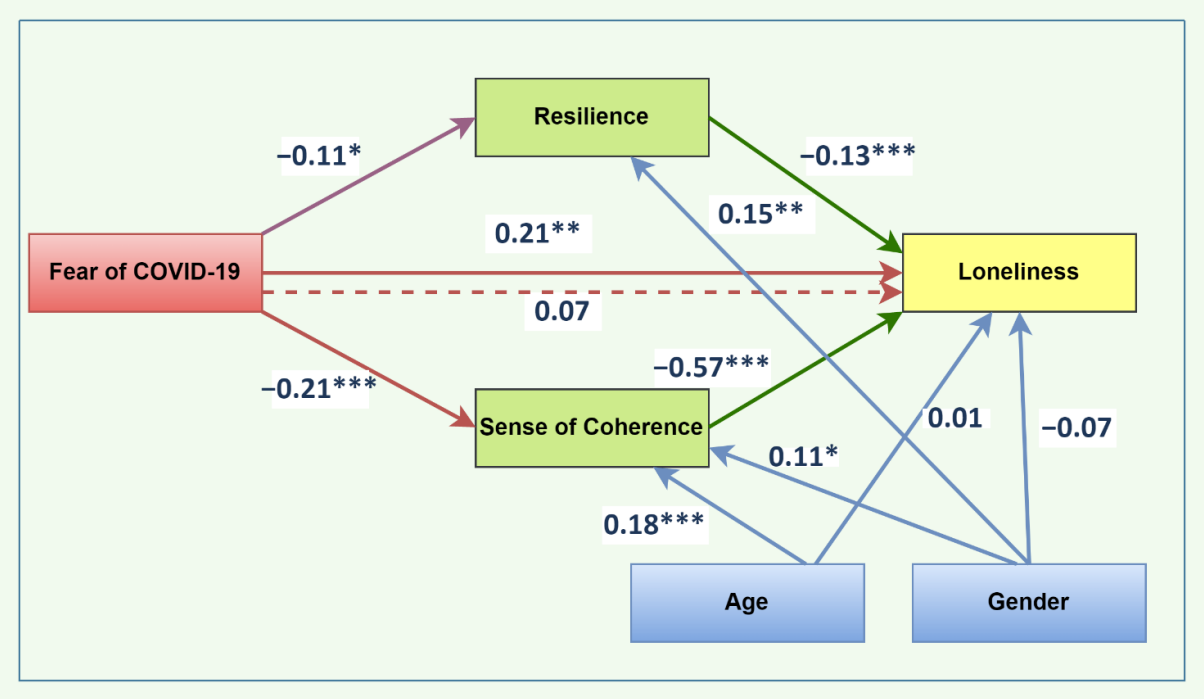

Figure 1 Structural equation model of the mediating role of resilience and sense of coherence. *Note:* The solid line between COVID-19 fear and loneliness reflects the significant association in the absence of the mediator. The dotted line shows the nonsignificance of the association in the presence of the mediator. *** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$.

The direct and indirect effects of COVID-19 fear and the direct effects of resilience and SOC on loneliness are listed in Table 4.

Table 4 Direct and indirect effects of COVID-19 fear.

Effect	*Beta*	SE	*β*	*95%CI*	*P*
Direct Effects					
Fear of COVID-19 → Loneliness	0.10	0.07	0.07	[-0.01, 0.14]	0.155
Fear of COVID-19 → Resilience	-0.13	0.06	-0.11	[-0.21; –0.02]	0.037
Fear of COVID-19 → Sense of Coherence	-0.35	0.08	-0.21	[-0.29; –0.13]	0.001
Resilience → Loneliness	-0.18	0.06	-0.13	[-0.21; –0.05]	0.004
Sense of Coherence → Loneliness	-0.54	0.05	-0.57	[-0.64; –0.49]	0.001
Indirect Effects					
Fear of COVID-19 → Resilience → Loneliness	0.02	0.01	0.02	[0.01, 0.05]	0.015
Fear of COVID-19 → Sense of Coherence → Loneliness	0.19	0.04	0.12	[0.12, 0.27]	0.000

Note. Beta = Unstandardized coefficient, β = Standardized coefficient

The assessment of the direct effects revealed that the association between COVID-19 fear and loneliness was nonsignificant (Table 4). However, the direct effects of resilience and SOC on loneliness were significant.

In terms of the indirect effects, resilience and SOC mediated the relationship between COVID-19 fear and loneliness (Table 2). Thus, all the hypotheses were supported, as detailed below.

H1: In the absence of the mediator, COVID-19 fear was associated with higher levels of loneliness (β = 0.21, p = 0.002). This is indicated in Figure 1, where the solid arrow depicts a significant relationship in the absence of the mediator.

H2: Resilience was negatively associated with loneliness (β = −0.13, p = 0.016).

H3: SOC was negatively associated with loneliness (β = −0.57, p < 0.001).

H4: Resilience fully mediated the relationship between COVID-19 fear and loneliness (β = 0.02 p = 0014).

H5: SOC fully mediated the relationship between COVID-19 fear and loneliness (β = 0.12, p < 0.001).

The relationship between COVID-19 fear and loneliness was significant when considered on its own but became nonsignificant in the presence of the mediator, thereby indicating that SOC and resilience fully mediated the relationship between COVID-19 fear and loneliness.

4. Discussion

This study investigated the role of SOC and resilience in the relationship between COVID-19 fear and loneliness in a group of South African schoolteachers and demonstrated several important findings. First, the levels of loneliness reported among schoolteachers in the current sample were higher than those reported in research conducted before or during the pandemic [50-54]. Several features of the COVID-19 pandemic, including working remotely and relying on information and communications technology to communicate with students and peers, may have contributed to the increased levels of loneliness among teachers. The lack of direct in-person interaction may have impaired the quality of relationships, inhibited the formation of meaningful connections, and aggravated the feelings of loneliness [61]. Limited quality interactions between staff, teachers, and students reduce affective commitment to the profession, which in turn is associated with loneliness [62]. Furthermore, in the South African context, the return to conventional schooling may have led teachers to further isolate themselves to protect significant others from potential infection, thereby enhancing loneliness.

Second, the loneliness levels were significantly lower than those reported for a sample of young adults in South Africa during and before the pandemic. The differences between age groups may reflect differences in social needs and relationship expectations. Studies conducted before the pandemic [63, 64] have demonstrated that younger adults (aged 18–29 years) tend to be lonelier than older adults (aged above 30 years). The relationship between age and loneliness was also confirmed in the current study. This may be dependent on how an individual uses social relationships to derive meaning and life satisfaction. Younger adults value the size of their social networks and the quantity of interactions more than older adults do. However, the latter prioritizes the quality of their social interactions and networks [64]. Social- distancing protocols and shelter-at-home mandates would have left younger adults with fewer people to socialize with, thereby increasing their risk of loneliness [65].

The COVID-19 pandemic and related restrictions (e.g., social distancing, restrictions on travel, and lockdown) contributed to social isolation and enhanced feelings of loneliness among the general population. Young adults are in a phase of development where peer relationships are

prioritized, and social media is widely used in daily interactions. Social media enables active communication with friends and family and promotes social connectedness and emotional wellbeing. However, cyberbullying, negative social comparisons, and rejection can also lead to a sense of isolation and loneliness [66]. In the South African context, where the majority of the population does not have access to the internet, and the costs of mobile data are high, online communication is not always feasible or affordable, leading to feelings of loneliness among young adults [26]. Most teachers in the current study were middle-aged. At this stage of life, they would have developed better quality social bonds and established their own families, which could account for the lower levels of loneliness among the current sample than among younger adults. Furthermore, because of their age, the schoolteachers may have developed better resources for coping with adversity. Existing research suggests that older adults have greater coping self-efficacy and tend to use appraisal and behavioral strategies to manage stressors [67].

Third, SOC and resilience had significant direct effects on loneliness, suggesting their health-sustaining role. Even in the absence of a stressor, resilience and SOC have a positive effect on loneliness. Studies [68, 69] have demonstrated that a strong SOC enables people to appraise situations as challenges and use active problem-focused strategies to manage adverse circumstances. When confronted with social-distancing measures, teachers high in SOC may mobilize their social resources and be better able to adapt their expectations of interpersonal relationships in the context of the pandemic and risk of contagion [69].

Fourth, SOC and resilience fully mediated the relationship between COVID-19 fear and loneliness. COVID-19 fear is thus less likely to affect loneliness for those who are more resilient and have a higher level of SOC. The aforementioned finding is in contrast with the findings of Barni and colleagues, who reported that the fear of contracting COVID-19 was associated with reduced psychological wellbeing for those with high levels of SOC [70]. These authors conjecture that the unpredictability of the pandemic may have left people with higher levels of SOC, thereby aggravating their distress.

According to the positive style appraisal theory, generalized resistance resources are activated when stressful situations are more likely to evoke negative appraisals [71]. In such situations, people with stronger intrinsic (e.g., self-esteem) and external resources (e.g., family support) are better equipped to positively reappraise the situation in a way that facilitates coping positively. When applied to the current study, people high in SOC and resilience better adapted to COVID-19 fear and considered social-distancing, quarantine, and shelter-in-place policies as reasonable in the context of the threat posed by the virus. Perceiving COVID-19 fear and the related restriction measures as meaningful and adjusting the expectations of relationships may reduce the feelings of loneliness.

These findings suggest that although the provision of material resources is important, it is equally necessary to enhance people's abilities to comprehend, give meaning to, and manage the challenges associated with the pandemic. Schoolteachers' SOC can be enhanced by creating informal support networks for teachers, increasing the awareness of loneliness, and using psychological interventions to enhance the capacity to view stressors as challenges that can be overcome [71]. Mental disengagement is also positively associated with coping and entails taking a time-out from searching for and viewing pandemic-related news [72]. Mindfulness-based stress reduction interventions, the cognitive reframing of stressful situations, and training in coping skills

to reinforce the use of adaptive problem-solving are beneficial for strengthening the psychological wellbeing of individuals on the frontlines of the pandemic [72].

This study has certain limitations. Because of the cross-sectional nature of this study, causal inferences could not be drawn between the predictor variables and loneliness. Future research should adopt a longitudinal design to establish a causal relationship between SOC, resilience, and loneliness. Such a study may also facilitate the identification of individuals at higher risk of loneliness and teachers with stronger SOC and greater resilience, thereby facilitating targeted interventions. The participants were not randomly selected, thereby limiting the generalizability of the findings and leading to selection bias. An electronic self-reported questionnaire was used, thereby limiting the responses to those with internet access. Most participants were women from one geographic area; therefore, future studies should use a more diverse sample.

5. Conclusions

The current study extends the research on SOC and resilience as potential protective factors in the context of COVID-19 fear and psychological distress among schoolteachers. The findings suggest that a salutogenic approach to mental health promotion in the workplace may be beneficial for enhancing the levels of these protective resources among schoolteachers. Existing interventions, such as Inquiry-Based Stress Reduction, increase personal motivation and reinforce appraisals associated with coping. Because SOC is a global cognitive orientation toward the world and is amenable to change, such an approach to enhancing SOC and resilience may foster the wellbeing of teachers who are at the frontlines of service provision [73].

Author Contributions

Conceptualization and methodology: **Anita Padmanabhanunni and Tyrone Pretorius**. Analysis and data curation: **Tyrone Pretorius**. All authors discussed and interpreted the obtained results. All authors contributed to the writing and editing of the manuscript over several iterations.

Competing Interests

The authors have declared that no competing interests exist.

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