




INVESTIGATION ARTICLE

Psychosocial factors associated with mental health among Colombian psychologists: Findings from the PSY-COVID study after the most restrictive phases of the COVID-19 pandemic

Factores psicosociales asociados a la salud mental de los psicólogos colombianos: hallazgos del estudio PSY-COVID después de las fases más restrictivas de la pandemia COVID-19

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Abstract

Introduction: The COVID-19 pandemic has highlighted that healthcare workers are at a high risk of experiencing poor mental health. **Objective:** To examine the associations between various psychosocial factors (i.e., gender, age, income level, LGBTQIA+ status, posttraumatic growth, perceived stress, and resilience) and three clinically relevant mental health outcomes (i.e., depression, anxiety, and psychological distress) among Colombian psychologists following the most restrictive phases of the COVID-19 pandemic. **Method:** A cross-sectional online study was conducted between December 1st, 2021, and April 30th, 2022. Depression, anxiety, and psychological distress symptoms were assessed using the PHQ-2, the GAD-2, and the PHQ-4, respectively. Prevalences and prevalence ratios by socioeconomic and psychological variables were also estimated. **Results:** Of the 1,297 participants, the majority were female (78%) and had a mean age of 39.2 (*SD* = 11.5). In total, 27.5% reported depression, 25.4% anxiety, and 17.5% psychological distress symptoms. Depression and psychological distress were higher among females and younger psychologists. Psychological distress was higher among LGBTQIA+ psychologists. Lower posttraumatic growth and resilience and higher perceived stress were associated with higher depression, anxiety, and psychological distress symptoms. **Conclusion:** These findings highlight disparities in mental health outcomes among psychologists associated with varying psychosocial factors. They also highlight the need to offer psychologists resources to improve their psychological adaptation to stressful circumstances related to future public health emergencies.

Keywords: Psychologists; depression; anxiety; psychological distress; COVID-19.

Resumen

Introducción: La pandemia de COVID-19 reveló que los trabajadores de la salud están en alto riesgo de experimentar mala salud mental. **Objetivo:** Examinar las asociaciones entre diversos factores psicosociales (género, edad, nivel de ingresos,

estatus LGBTQIA+, crecimiento postraumático, estrés percibido y resiliencia) y tres variables de resultado de salud mental clínicamente relevantes (depresión, ansiedad y malestar psicológico) en psicólogos colombianos después de las fases más restrictivas de la pandemia de COVID-19. **Método:** Se realizó un estudio transversal en línea entre el 1 de diciembre de 2021 y el 30 de abril de 2022. Los síntomas de depresión, de ansiedad y de angustia psicológica se evaluaron utilizando el PHQ-2, el GAD-2 y el PHQ-4, respectivamente. También se estimaron prevalencias y razones de prevalencia por variables socioeconómicas y psicológicas. **Resultados:** De los 1297 participantes, la mayoría eran mujeres (78%) y tenían una edad media de 39,2 años ($DE = 11.5$). En total, el 27,5% reportó síntomas depresión, el 25,4% de ansiedad y el 17,5% de angustia psicológica. La depresión y la angustia psicológica fueron mayores en las mujeres y en los psicólogos más jóvenes. La angustia psicológica también fue mayor en los psicólogos LGTBIQA+. Menor crecimiento postraumático y resiliencia y mayor estrés percibido se asociaron con mayor presencia de síntomas de depresión, de ansiedad y de angustia psicológica. **Conclusión:** Estos hallazgos destacan las disparidades en los resultados de salud mental entre los psicólogos asociadas a diversos factores psicosociales. Además, destacan la necesidad de ofrecer recursos a los psicólogos para mejorar su adaptación psicológica a circunstancias estresantes relacionadas con futuras emergencias de salud pública.

Palabras clave: Psicólogo; depresión; ansiedad; angustia psicológica; COVID-19.

Introduction

The coronavirus disease 2019 (COVID-19) pandemic is a global public health crisis that has resulted in psychological (Necho et al., 2021; Vindegaard & Benros, 2020), social (Chu et al., 2020; Hosseinzadeh et al., 2022), economic (Buheji et al., 2020; Richards et al., 2022), and healthcare (Lal et al., 2021; Nguyen et al., 2020) consequences worldwide. However, the impact of the COVID-19 pandemic has been unequal (Belot et al., 2021; Jensen et al., 2021), with certain groups experiencing more adverse effects from this public health emergency than others (Mishra et al., 2021; Li et al., 2023). Healthcare workers are one such group that has faced significant mental health challenges since the initial phases of the pandemic due to their frontline role in crisis management for individuals directly or indirectly affected by the virus (Aymerich et al., 2022; Chutiyami et al., 2022; Ren et al., 2020). There is also empirical evidence that the pandemic's myriad challenges led many healthcare professionals to work in highly stressful environments (Duden et al., 2022; Labrague, 2021; Saragih et al., 2021). Similarly, it appears that implementing virus containment measures (i.e., lockdowns, remote work, confinement, and physical distancing) generated adverse psychological health effects in this population (Aymerich et al., 2022).

The mental health repercussions experienced by health workers, resulting from the multifaceted challenges of the COVID-19 pandemic and compounded by COVID-19 virus containment measures, highlight the critical need to strengthen health systems to support healthcare professionals better (Chutiyami et al., 2022). This may help improve the mental health outcomes of frontline health workers, a population that has been found to experience higher rates of mental health problems compared to the general population (Aymerich et al., 2022; Ghahramani et al., 2022; Xiong et al., 2020). Recent systematic reviews and meta-analyses found that the prevalence of depression, anxiety, and psychological distress was elevated among healthcare workers during the COVID-19 pandemic (Aymerich et al., 2022; Chutiyami et al., 2022; Duden et al., 2022; Saragih et al., 2021). The unique circumstances and the working conditions of healthcare workers, especially those in direct contact with patients diagnosed with COVID-19, also appear to significantly impact their mental health outcomes (Chutiyami et al., 2022; Saragih et al., 2021; Xiang et al., 2020).

Emerging evidence suggests that psychologists are healthcare workers who were at high risk for poor mental health outcomes during the COVID-19 pandemic. They played a pivotal role throughout the COVID-19 pandemic by providing essential mental health support (Crescenzo et al., 2021) and offering emotional containment to people affected by mobility restrictions (Ali et al., 2022; Campos et al., 2022). In parallel, they also faced unprecedented challenges, ranging from high workloads to exposure to COVID-19 (Campos et al., 2021; Humer et al., 2023; Houtsma et al., 2022). During the most restrictive phase of the pandemic, the workload of psychologists significantly increased to meet the needs of the population (Humer et al., 2023). While this increase in demand highlighted the role of psychologists in mitigating the mental health impact of the pandemic at the population level, it also had negative consequences on their mental health, simultaneously exposing them to heightened risks of depression, anxiety, and psychological distress (Humer et al., 2023). As frontline workers in

mental health care, psychologists are potentially one of the groups of healthcare workers most vulnerable to the detrimental effects of prolonged psychological stress caused by these health emergencies (Houtsma et al., 2022).

Although these studies suggest that the COVID-19 pandemic had negative ramifications on the mental health of psychologists, there is a notable gap in research characterizing and comparing how various types of psychosocial factors are associated with the mental health outcomes of psychologists following the most restrictive phases of the COVID-19 pandemic. Furthermore, to the best of this research group's knowledge, it also appears that no studies have investigated the burden of the COVID-19 pandemic on the mental health of psychologists in Colombia. Of the studies that come close to this topic, they have focused on exploring health risk factors of COVID-19 in psychologists by determining their relationship with cognitive appraisal, coping styles, stress, and fear (Ali et al., 2022); identifying the demographic and the professional characteristics of psychologists in different phases of the COVID-19 pandemic (Campos et al., 2022); and analyzing depressive, anxiety, insomnia, and stress symptoms in clinical psychologists during the COVID-19 pandemic (Humer et al., 2023).

In the present study, psychosocial factors are defined as the psychological and social characteristics that shape individuals' mental health status (World Health Organization, 2022). With this understanding, the first objective was to describe the professional profile of psychologists (i.e., field of practice, level of education, years of professional experience, and region), the work experience (i.e., contact with COVID-19-positive patients, teleworking patient care, perceived risk of COVID-19 infection during the workday, and perceived need for psychological support), and the perceived changes (i.e., social, economic, occupational, personal, and lifestyle) of these psychologists during the COVID-19 pandemic. The second objective of this study was to examine the associations between various psychosocial factors (i.e., gender, age, income level, LGBTQIA+ status, posttraumatic growth, perceived stress, and resilience) and three clinically relevant mental health outcomes (i.e., depression, anxiety, and psychological distress) among Colombian psychologists. Taken together, the findings of this study may shed light on opportunities to better design or tailor mental health interventions to meet the specific needs of psychologists during stressful life circumstances and/or in future public health emergencies.

Method

Study design

The present article is based on data derived from PSY-COVID, an international cross-sectional online study that explored the psychological impact caused by the COVID-19 pandemic in 30 countries. In this study, analyses were restricted to psychologists residing in Colombia after the end of the most restrictive phases of the COVID-19 pandemic. Two previous studies examining the effect of the COVID-19 pandemic on mental health in the general population of Colombia were published using the PSY-COVID dataset (Sanabria-Mazo et al., 2021a, 2021b).

This research was approved by the Animal and Human Experimentation Ethics Committee of the *Universidad Autónoma de Barcelona* (CEEAH-5197) and was validated by the ethical committee of COLPSIC (acronym in Spanish for Colegio Colombiano de Psicólogos). In addition, this study adhered to the Code of Ethics of the World Medical Association (Helsinki Declaration). None of the participants received any financial incentive for participating in this study. All participants provided digital informed consent.

Participants

The number of psychologists registered in the National Registry of Human Talent was 68,460 in 2020, 78,260 in 2021, and 88,351 in 2022 (CUBOS SISPRO, 2024), reflecting a consistent growth trend in Colombia. In this study, a total of 1,984 participants completed the online PSY-COVID survey. Of these, 687 were excluded from the data analysis because they were not psychologists. Consequently, the final sample consisted of 1,297 psychologists who met the eligibility criteria, corresponding to approximately 2% of the total number of registered psychologists in Colombia as of 2021. The inclusion criteria were: (1) adults (≥ 18 years old), (2) psychologists, and (3) residents of Colombia. No participants who met the eligibility criteria were excluded from the analyses.

Procedure

Participants were recruited using a non-probabilistic sampling method. An anonymous Google Forms® survey was distributed through multiple channels to maximize reach and inclusivity within Colombia's psychology community. This online survey was distributed by the COLPSIC via their mailing list, social networks (Facebook), and institutional contacts (universities, foundations, and health organizations). All psychologists subscribed to COLPSIC's communication channels were invited to participate in this study. This multichannel distribution strategy was designed to capture a diverse group of psychologists across different regions and professional contexts across the country. To ensure the adequacy of the data collected, the survey included explicit instructions asking participants to respond only once, thus reducing the risk of duplicates. Participants were also required to confirm their profession and country of residence to validate their eligibility. To further mitigate potential biases, the survey was carefully designed to be concise and straightforward employing a cognitive ergonomics approach, minimizing response fatigue, and ensuring anonymity to reduce social desirability bias.

The approximate time to complete this online survey was 12 minutes. Survey data was collected between December 1st, 2021, and April 30th, 2022. These five months were selected because the most restrictive phases of the lockdown measures adopted by the Colombian authorities had ended. In other words, this time frame was chosen to analyze the cumulative impact of the COVID-19 pandemic on the mental health of the study sample. Participants were not offered any economic incentives to complete the survey.

Measures

Mental health outcomes

Depression. This was measured using the *Patient Health Questionnaire-2* (PHQ-2; Kroenke et al., 2003). This ultra-brief version contains 2 items with a 4-point Likert response format, where 0 corresponds to “not at all” and 3 to “nearly every day”. The total score of the PHQ-2 ranges from 0 to 6. Participants were considered at risk of depression if the PHQ-2 scores were ≥ 3 (Kroenke et al., 2003). The Colombian version (Sanabria-Mazo et al., 2023) of PHQ-2 showed adequate internal consistency (Cronbach's $\alpha = .79$). It also showed adequate internal consistency in this sample ($\alpha = .85$).

Anxiety. This was measured using the *Generalized Anxiety Disorder-2* (GAD-2; Kroenke et al., 2007). This ultra-brief version contains 2 items with a 4-point Likert response format, where 0 corresponds to “not at all” and 3 to “nearly every day”. The total score of the GAD-2 ranges from 0 to 6. Participants were considered at risk of anxiety if the GAD-2 scores were ≥ 3 (Kroenke et al., 2007). The Colombian version (Sanabria-Mazo et al., 2023) of GAD-2 showed adequate internal consistency ($\alpha = .83$). It also showed adequate internal consistency in this sample ($\alpha = .85$).

Psychological distress. This was measured using the *Patient Health Questionnaire-4* (PHQ-4; Löwe et al., 2010). This ultra-brief version contains 4 items with a 4-point Likert response format, where 0 corresponds to “not at all” and 3 to “nearly every day”. The total score of the PHQ-4 ranges from 0 to 12 (Caro-Fuentes & Sanabria-Mazo, 2023). Participants were considered at risk of psychological distress if the PHQ-4 was ≥ 6 (Löwe et al., 2010). The Colombian version (Sanabria-Mazo et al., 2023) of PHQ-4 showed adequate internal consistency ($\alpha = 0.82$). It also showed adequate internal consistency in this sample ($\alpha = .88$).

Psychosocial variables

Socioeconomic characteristics. The PSY-COVID survey collects information on participants' age, gender (male or female), individual income level (low, medium, and high), and affiliation with the Lesbian, Gay, Bisexual, Transgender, Queer or Questioning, Intersex, Asexual, and other identities (LGBTQIA+) status (yes or no).

Posttraumatic growth. This was measured using the validated *Posttraumatic Growth Inventory-5* (PTGI-5; Tedeschi & Calhoun, 1996). Specifically, a unidimensional principal component analysis evaluated the 5 items (i.e., relationship with others, new possibilities, personal strength, spiritual change, and appreciation for life)

with the highest factorial saturation. This adapted ultra-brief version contains 5 items with a 4-point Likert response format, where 0 corresponds to “not at all” and 3 to “nearly every day”. The total score of the PTGI-5 ranges from 0 to 15, with higher scores indicating higher posttraumatic growth. The Colombian version of PTGI-5 (Gómez-Acosta et al., 2023) showed adequate internal consistency ($\alpha = .79$). It also showed adequate internal consistency ($\alpha = .83$) in this sample.

Perceived stress. This was measured using the validated *Perceived Stress Scale-4* (PSS-4; Cohen et al., 1983). This ultra-brief version contains 4 items with a 4-point Likert response format, where 0 corresponds to “not at all” and 3 to “nearly every day”. The total score of the PSS-4 ranges from 0 to 12, with higher scores indicating higher perceived stress. The Colombian version of PSS-4 (Sanabria-Mazo et al., 2024) showed adequate internal consistency ($\alpha = .87$). It also showed adequate internal consistency ($\alpha = .73$) in this sample.

Resilience. This was measured using the validated *Connor-Davidson Resilience Scale-2* (CD-RISC-2; Connor & Davidson, 2003). This ultra-brief version contains 2 items with a 4-point Likert response format, where 0 corresponds to “not at all” and 3 to “nearly every day”. The total score of CD-RISC-2 ranges from 0 to 6, with higher scores indicating detecting higher resilience. It also showed adequate internal consistency ($\alpha = .77$) in this sample.

Other variables

Professional profile of psychologists. An ad hoc questionnaire was used retrospectively to explore the professional profile of psychologists. It included questions such as the field of psychology in which they practice (clinical or non-clinical), the highest level of education (degree, specialization, master's degree, or doctorate), years of professional experience (0 to 5 years, 6 to 10 years, 11 to 20 years, and more than 20 years), and region (Cundinamarca, Antioquia, Cauca's Valley, Atlantic, Santander, or others).

Work experience during the COVID-19 pandemic. An ad hoc questionnaire was used retrospectively to explore psychologists' experience during the COVID-19 pandemic. It examines the direct contact with COVID-19-positive patients, the teleworking patient care, the perceived risk of COVID-19 infection during the workday, and the perceived need for psychological support. The response format for these questions was a 4-point Likert response format, where 0 corresponds to “not at all” and 3 to “a lot”.

Perceived changes during the COVID-19 pandemic. An ad hoc questionnaire was used to retrospectively measure the social, economic, occupational, personal, and lifestyle impacts on participants during the COVID-19 pandemic (Sanabria-Mazo et al., 2021b). It contains 9 items with a 5-point Likert response format, where 0 corresponds to “much worse” and 4 to “much better”.

Statistical analysis

A descriptive analysis was conducted using frequencies (n) and percentages (%) for categorical variables and means (M) and standard deviations (SD) for continuous variables. The prevalence of depressive (PHQ-2), anxiety (GAD-2), and psychological distress (PHQ-4) symptoms was calculated. A multinomial (polytomous) logistic regression was used to analyze psychosocial factors (i.e., gender, age, income level, LGBTQIA+ status, posttraumatic growth, perceived stress, and resilience) associated with three mental health outcomes (i.e., depression, anxiety, and psychological distress). Variables with p -values $< .25$ in simple regression models were included in the final multiple regression model, and those retaining a p -value $< .25$ were kept adjusting for potential confounding effects. Adjusted prevalence ratios (PR) are presented with 95% confidence intervals (95%CI). Statistical significance was set at $p < .05$. Statistical analyses were performed using Stata v16.1 (College Station, TX).

Results

Characteristics of the sample

[Table 1](#) presents the socioeconomic and psychological characteristics of the sample. In total, it consisted of 1,297 Colombian psychologists. Concerning socioeconomic characteristics, 77.7% were female, 73.6% had medium incomes, and 5.6% identified as LGBTQIA+. The mean age was 39.2 years ($SD = 11.5$). Regarding psychological characteristics, posttraumatic growth had a mean score of 9.6 ($SD = 3.1$), perceived stress of 3.4 ($SD = 2.5$), and resilience of 4.6 ($SD = 1.1$).

Table 1. Psychosocial characteristics.

Factors	Sample ($n = 1,297$)
Age, mean (SD)	39.2 (11.5)
Gender, n (%)	
Male	289 (22.3)
Female	1008 (77.7)
LGBTI+, n (%)	
No	1224 (94.4)
Yes	73 (5.6)
Income level, n (%)	
Low	208 (16.1)
Medium	955 (73.6)
High	134 (10.3)
Perceived stress (scores 0-12), mean (SD)	3.4 (2.5)
Posttraumatic growth (scores 0-15), mean (SD)	9.6 (3.1)
Resilience (scores 0-6), mean (SD)	4.6 (1.1)

Note: LGBTQIA+ = Lesbian, Gay, Bisexual, Transgender, Queer or Questioning, Intersex, Asexual, and other identities.

Professional profile of psychologists

As shown in [Table 2](#), most psychologists had between 0 and 5 years of professional experience (46.3%), worked in non-clinical fields of psychology (72.8%), had the highest level of education, a degree in psychology (41.3%), and resided in the Andean region (71.8%).

Table 2. Professional profile of psychologists.

Variables	Sample ($n = 1,297$)
Field of practice, n (%)	
Clinical	353 (27.2)
Non-clinical	944 (72.8)
Highest level of education, n (%)	
Degree	536 (41.3)
Specialization	384 (29.6)
Master's degree	346 (26.7)
Doctorate	31 (2.4)
Years of experience, n (%)	
Between 0 to 5 years	601 (46.3)
Between 6 to 10 years	214 (16.5)
Between 11 to 20 years	297 (22.9)
More than 20 years	185 (14.3)
Region, n (%)	
Andean	931 (71.8)
Pacific	184 (14.2)
Caribbean	159 (12.2)

Orinoco	18 (1.5)
Amazonia	5 (0.4)

Work experience during the COVID-19 pandemic

A notable proportion of psychologists reported needing psychological support during the COVID-19 pandemic (73.9%), providing healthcare services to patients via telework (70.8%), feeling at risk of infection during their workday (69.2%), and having direct contact with COVID-19-positive patients (41.3%). More details on these results are presented in [Table 3](#).

Table 3. Work experience during the COVID-19 pandemic.

Variables	Sample
Direct contact with COVID-19-positive patients, <i>n</i> (%)	
Not at all	761 (58.7)
A little	359 (27.7)
Some	133 (10.3)
A lot	44 (3.4)
Teleworking patient care, <i>n</i> (%)	
Not at all	379 (29.2)
A little	283 (21.8)
Some	325 (25.1)
A lot	310 (23.9)
Perceived risk of COVID-19 infection during the workday, <i>n</i>	
Not at all	399 (30.8)
A little	412 (31.8)
Some	309 (23.8)
A lot	177 (13.6)
Perceived need for psychological support, <i>n</i> (%)	
Not at all	338 (26.1)
A little	471 (36.3)
Some	329 (25.4)
A lot	159 (12.3)

Perceived changes during the COVID-19 pandemic

[Figure 1](#) shows the impact on various dimensions of psychologists' lives during the COVID-19 pandemic. Particularly, psychologists reported that their work (47%), their economic situation (46.5%), their physical activity (42%), and their sleep habits (42%) worsened during the pandemic. The pandemic also worsened their eating habits (27%), their relationships with their families (24%), and their hobbies (20%).

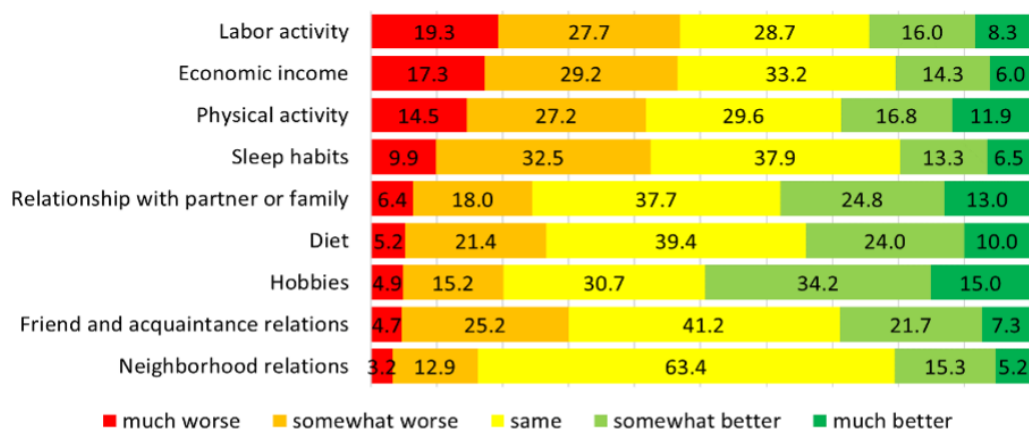


Figure 1. Perceived changes by psychologists during the COVID-19 pandemic.

Prevalence of mental health outcomes

Among the surveyed psychologists, 27.5% reported depression symptoms, 25.4% anxiety symptoms, and 17.5% psychological distress symptoms. In total, 9.9% of psychologists informed depression symptoms only, 7.9% anxiety symptoms only, and 64.7% did neither present depression nor anxiety symptoms.

Psychosocial factors associated with the prevalence of mental health outcomes

Table 4 summarizes the psychosocial factors associated with depression, anxiety, and psychological distress symptoms among psychologists. *PR* indicates the likelihood of symptoms relative to the reference group (*PR* = 1), with values above 1 suggesting increased likelihood and below 1 indicating decreased likelihood. Statistically significant results ($p < .05$) are highlighted in bold, and confidence intervals (95%CI) that exclude 1 confirm the association.

As shown in Table 4, females had a higher prevalence of experiencing depression symptoms ($PR = 2.17, p = .005$) and psychological distress symptoms ($PR = 1.80, p = .01$). Older age was associated with a lower prevalence of psychological distress symptoms ($PR = 0.97, p = .004$) and with depression symptoms ($PR = 0.98, p = .03$). Psychologists with a lower income were less likely to report experiencing psychological distress symptoms ($PR = 0.62, p = .04$). Psychologists who identified as LGBTQIA+ were more likely to report experiencing psychological distress symptoms ($PR = 2.72, p = .005$).

Moreover, higher levels of posttraumatic growth were linked to a lower prevalence of psychological distress symptoms ($PR = 0.87, p < .001$) and depression symptoms ($PR = 0.92, p = .02$). In contrast, higher levels of perceived stress were associated with a higher prevalence of depression symptoms ($PR = 1.80, p < .001$), anxiety symptoms ($PR = 1.31, p < .001$), and psychological distress symptoms ($PR = 1.80, p < .001$). Lastly, higher levels of resilience were associated with a lower prevalence of anxiety symptoms ($PR = .77, p = .02$) and psychological distress symptoms ($PR = .77, p = .004$).

Table 4. Psychosocial factors associated with the prevalence of poor mental health outcomes.

Variable	Depression (PHQ-2)				Anxiety (GAD-2)				Psychological distress (PHQ-4)			
	PR	p-value	95%CI		PR	p-value	95%CI		PR	p-value	95%CI	
Gender												
Male	1.00				1.00				1.00			
Female	2.17	.005	1.26	3.74	1.37	.249	0.80	2.35	1.80	.013	1.13	2.85
Age	0.98	.026	0.96	1.00	0.99	.310	0.97	1.01	0.97	.004	0.96	0.99
LGBTQIA+												
Yes	2.06	.076	0.93	4.56	1.52	.387	0.59	3.91	2.72	.005	1.35	5.50
No	1.00				1.00				1.00			
Income level												
Low	0.67	.116	0.41	1.10	0.99	.977	0.54	1.82	0.62	.037	0.39	0.97
Medium	0.46	.092	0.18	1.14	1.12	.800	0.46	2.71	0.60	.211	0.27	1.34
High	1.00				1.00				1.00			
Posttraumatic growth	0.92	.022	0.86	0.99	0.95	.153	0.88	1.02	0.87	< .001	0.82	0.93
Perceived stress	1.40	< .001	1.26	1.54	1.31	< .001	1.18	1.46	1.80	< .001	1.63	1.98
Resilience	0.98	.882	0.81	1.20	0.77	.017	0.62	0.95	0.77	.004	0.64	0.92

Note: PR = prevalence ratio; 95%CI = 95% confidence interval. GAD-2 = Generalized Anxiety Disorder Scale; PHQ-2 = Patient Health Questionnaire; PHQ-4 = Patient Health Questionnaire. LGBTQIA+ = Lesbian, Gay, Bisexual, Transgender, Queer or Questioning, Intersex, Asexual, and other identities. p values < .05 are highlighted in bold.

Discussion

The objective of this study was to examine the associations between various psychosocial factors (i.e., gender, age, income level, LGBTQIA+ status, posttraumatic growth, perceived stress, and resilience) and three clinically relevant mental health outcomes (i.e., depression, anxiety, and psychological distress) among Colombian

psychologists. This study provides evidence of the high prevalence of poor mental health outcomes among Colombian psychologists after the end of the most restrictive phases of the COVID-19 pandemic lockdown measures in Colombia. The findings highlight that mental health challenges among psychologists are not only related to job risk factors like workload but also to systemic issues, such as social and economic inequities, that exacerbate vulnerabilities. As in other research carried out on a population of psychologists after the most restrictive phases of the COVID-19 pandemic, it was found that more than a quarter of the sample presented depression or anxiety symptoms (Ali et al., 2022; Campos et al., 2022; Houtsma et al., 2022; Humer et al., 2023). Consistent with previous research, it has also been identified that certain population groups, such as females, LGBTQIA+, and low-income, were more vulnerable to experiencing these emotional distress symptoms (Khan et al., 2022; Salerno et al., 2020; Sanabria-Mazo et al., 2021a). In contrast, psychologists who reported higher posttraumatic growth and resilience scores had lower prevalences of these symptoms, suggesting the relevance of these protective factors. Overall, these results reinforce the importance of integrating strategies that strengthen resilience and posttraumatic growth into future mental health interventions. Such protective factors have consistently demonstrated their value in mitigating adverse mental health outcomes during health crises (Fontes et al., 2022; Jeamjitvibool et al., 2022; Yap et al., 2023).

Several studies have pointed to poor mental health outcomes as a direct result of the COVID-19 pandemic; however, this is not new because previous infectious disease outbreaks have shown adverse psychological consequences in the population (Liozidou et al., 2023; Wu et al., 2021). In this context, it is important to understand that these effects probably extend beyond immediate reactions to the pandemic, reflecting deeper systemic vulnerabilities within the healthcare workforce. Research consistently reveals a higher prevalence of adverse mental health symptoms among people during or after the pandemic compared to the pre-pandemic period (Xiong et al., 2020). These effects have been identified both in the general population (Cénat et al., 2022; Daly et al., 2020, 2021; Planchuelo-Gómez et al., 2020; Robinson et al., 2022) and in the health workers population (Aymerich et al., 2022; Caldichoury et al., 2023; Chutiyami et al., 2022; Duden et al., 2022; Pappa et al., 2020; Saragih et al., 2021). Addressing the negative effects generated directly and indirectly by the COVID-19 pandemic on healthcare workers continues to be a growing public health concern (Chutiyami et al., 2022). The cumulative stressors experienced by the psychologists likely contributed to the elevated prevalence of poor mental health outcomes reported in this study (Parandeh et al., 2022).

As in other studies, changes in psychologists' working conditions to respond to patients' needs during the early phases of the outbreak were found to have had a noticeable impact on their well-being (Campos et al., 2022; Houtsma et al., 2022; Humer et al., 2023) and led to an exponential increase in workload (Ali et al., 2022; Campos et al., 2022; Houtsma et al., 2022). In this sample, more than 70% of the psychologists described needing psychological support during the COVID-19 pandemic, providing health care services to patients via telework, and feeling at risk of infection during their workday. Although specific regional differences were not assessed in this study, social and economic inequalities across different regions of Colombia may have influenced how psychologists faced these challenges (Gómez-Restrepo et al., 2022; Sanabria-Mazo et al., 2021a). These disparities could have impacted key factors such as access to resources, cultural perceptions of mental health, adaptability to telework, and the perceived effectiveness of psychological support services during the pandemic (Moreno-Serra et al., 2024; Moya-Salazar et al., 2023; Parenteau et al., 2022). This potential variability underscores the importance of developing region-specific interventions to address unequal access to resources and systemic barriers to mental health care, while also considering cultural attitudes toward mental health.

Within this context of regional and occupational inequities, the absence of psychological support for mental health providers and the emerging conditions of patient care further exacerbated the existing pressures of their work (Kamali et al., 2022; Rossi et al., 2023), which may have had direct detrimental effects on their health and functioning (Houtsma et al., 2022; Humer et al., 2023). In this regard, some studies have indicated increased burnout among healthcare workers after the pandemic (Kaushik, 2021; Lee et al., 2023; Maamri et al., 2021). Burnout remains a challenge to the sustainability of mental health services, underscoring the urgent need for targeted interventions to reduce its impact on healthcare professionals (Cohen et al., 2023). As highlighted in

different studies, prioritizing measures to mitigate burnout among healthcare workers in the post-pandemic period is essential to improve the healthcare system (Houtsma et al., 2022; Humer et al., 2023).

Contributions of this study

The pandemic's effects on psychologists' mental health reflect the need to strengthen long-term emotional support programs for healthcare professionals. Implementing sustainable support systems can help address the cumulative stressors experienced during public health emergencies and beyond. Additionally, differences in the pandemic's impact based on gender and LGBTQIA+ status emphasize the importance of developing culturally sensitive mental health strategies to ensure equitable access to resources, particularly for vulnerable groups. Furthermore, the prevalence of depression and anxiety symptoms among psychologists with less professional experience underscores the importance of incorporating self-care tools and stress management techniques into educational and professional training programs. Such initiatives could better prepare psychologists to navigate the challenges of their work environments during crises.

This study provides valuable information about work experience and psychosocial factors associated with perceived emotional changes, which allows for identifying the current needs of psychologists in Colombia in the post-pandemic context. The findings also highlight the relevance of integrating systemic approaches to address inequities and vulnerabilities that disproportionately affect certain groups within this professional population. The high prevalence of poor mental health outcomes among Colombian psychologists reflects the intense workload and unique challenges they faced during the COVID-19 pandemic. The identification of protective factors, such as posttraumatic growth and resilience, offers essential insights for the design of interventions aimed at strengthening psychologists' mental health. Such interventions could serve as scalable models for application across broader healthcare systems, particularly in environments with comparable structural limitations. These findings underscore the urgent need to implement psychological support measures and adequate resources to promote psychologists' emotional well-being and effective performance in the Colombian health system. They also highlight the importance of addressing social and gender inequalities that may increase the vulnerability of certain groups of psychologists to mental disorders.

Future recommendations

The mental health of psychologists is crucial for the adequate functioning of the public healthcare system and their positive impact on society must be duly recognized. Beyond quantitative analyses, qualitative studies exploring psychologists' experiences after the pandemic and the restrictive mobility measures are necessary. Key questions include: *What are the main barriers to psychological work during and after a public health emergency such as COVID-19? Should the public healthcare system build preventive programs for psychologists based on promoting resilience?* The National Colleges of Psychologists are well suited to develop a culture of care and implement psychological support programs for their members, especially during severe crises such as pandemics, wars, emergencies, and natural disasters. These programs should offer resources and services that help psychologists manage stress, strengthen their emotional well-being, and foster resilience in the workplace.

Addressing these challenges requires action on both micro and macro levels. On the micro level, personalized support through counseling, peer groups, and stress management training would equip psychologists with the tools needed to handle emotional strain. On the macro level, the healthcare system must prioritize systemic changes, such as policy reforms and increased funding for mental health resources directed at professionals. Professional associations should advocate for integrating these well-being programs into national healthcare policies to ensure comprehensive support for psychologists.

A critical step in addressing these challenges is evaluating the specific barriers faced by psychologists in Colombia, considering their diverse social, economic, and cultural contexts. Qualitative research could uncover nuanced barriers to psychological work that are not fully captured in surveys, such as regional stigma or limited professional resources in rural areas. Longitudinal studies could explore how these barriers evolve, informing

sustainable interventions. Programs should include peer support groups, professional supervision, and immediate access to crisis intervention services to foster resilience and posttraumatic growth, key protective factors against high-stress situations. Preventive measures, like stress management workshops and self-care training, should be integrated into psychologists' continuous professional development. Early detection protocols for burnout or emotional exhaustion are equally crucial to proactively address these issues.

Promoting fair and equitable working conditions is equally important for improving psychologists' mental health. Policies should include adequate remuneration for their work, flexible schedules, and guaranteed access to mental health resources. Such measures would help alleviate chronic stress caused by demanding workloads and financial instability, ultimately leading to greater job satisfaction and well-being. Moreover, ensuring access to psychological support for professionals in remote or underserved areas is critical. This could involve the implementation of telepsychology platforms, mobile mental health units, and partnerships with local organizations to overcome barriers related to connectivity and resource limitations. Tailored interventions would be essential to bridging gaps in access and equity for psychologists across diverse regions of Colombia.

The public health system and the College of Psychologists might develop together new frameworks and modes for proactive interventions to mitigate the impact of big crises on their professionals, with a particular focus on those who are more vulnerable to emotional disturbances (i.e., females, LGTBQIA+ status, and less experienced professionals). This study also highlights the importance of addressing the precarious working and salary conditions faced by psychology professionals working in the Colombian health system, especially regarding the economic recognition established for mental health care. Fair and equitable remuneration is essential to reduce financial stress and feelings of undervaluation at work. Collaborative efforts between public health institutions and academic entities could help address systemic challenges, with international studies identifying best practices and pilot programs testing preventive frameworks. Likewise, it is worth assessing the need to collaborate with other health professionals' areas on the implementation of the aforementioned measures, considering the commonalities in the psychosocial and occupational factors underlying emotional distress and mental health disorders that emerged during the COVID-19 pandemic (Pérez Herrera et al., 2021; Martínez, 2023).

Limitations and strengths

This is the first study carried out to specifically explore the impact of the COVID-19 pandemic on Colombian psychologists, a group with a double potential for impact both due to their status as healthcare personnel and the fact of living in one of the countries that adopted more severe and lasting measures to contain the SARS-CoV-2 virus. These conditions of impact and management of the pandemic in Colombia have been able to act as facilitators of the expression of emotional distress symptoms in highly vulnerable populations, as previous studies have indicated (Jiménez-Villamizar et al., 2023; Sanabria et al., 2021b).

This study has similar methodological limitations to some studies published concerning the psychosocial effects of the COVID-19 pandemic, which mainly were cross-sectional, with non-probabilistic sampling, and with self-report questionnaires. Specifically, non-probabilistic sampling limits the generalization of findings to all Colombian psychologists and may introduce selection biases. Addressing this limitation in future research through probabilistic sampling and longitudinal designs could enhance representativeness and provide a deeper understanding of mental health in this population. Additionally, although candidate variables were considered to adjust for confounding effects in the final model, there may be relevant residual confounding effects that should be explored in future studies that include other relevant characteristics. The descriptive data provided context to understand the relationships observed and to identify how demographic and socioeconomic diversity might influence the findings.

Despite the limitations mentioned above, one of the greatest strengths of this research is the sample size and the high degree of representativeness of the group analyzed since approximately 1 in 40 psychologists residing in Colombia participated in the study. The measurement model of psychological variables used in the study was

demographically heterogeneous, with varied occupational profiles and different validated instruments.

Conclusions

The COVID-19 pandemic has raised significant short-, medium-, and long-term mental health concerns for healthcare professionals. These findings provide compelling evidence of the significant burden psychologists have faced during this period, underscoring the urgent need to implement psychological support measures specifically targeted to this population. Exploring the psychological well-being of psychologists after the most critical phase of the pandemic is highly relevant to identifying specific healthcare system interventions and promoting their emotional well-being in the workplace. The findings also highlight the importance of systemic reforms to build more resilient mental health systems capable of supporting psychologists during and beyond health crises. Recognizing psychologists' dual role as care providers and vulnerable professionals is essential to designing targeted, inclusive interventions that address their unique challenges. Furthermore, these interventions should be tailored to account for demographic and professional differences, such as gender, professional experience, and membership in vulnerable communities.

Long-term research efforts are needed to understand better the evolution of protective factors like resilience and posttraumatic growth over time and to identify strategies that sustain mental health improvements. Additionally, reducing regional disparities in access to mental health resources, particularly in rural or underserved areas, remains a critical step toward equity in mental healthcare. By addressing these challenges through focused research, systemic changes, and tailored interventions, it will be possible to ensure sustainable improvements in psychologists' mental health and professional capacity, ultimately strengthening the overall public healthcare system.

Declaration of author contributions

Juan P. Sanabria-Mazo: Conceptualization, Resources, Data curation, Formal analysis, Methodology, Investigation, Visualization, Writing- original draft preparation, Writing - review and editing, Project administration. Diego F. Rojas-Gualdrón: Conceptualization, Formal analysis, Methodology, Writing - review and editing. Pedro P. Ochoa and Tatiana Manrique-Zuluaga: Conceptualization, Writing - review and editing. Brenda Robles and Juan V. Luciano: Writing - review and editing. Antoni Sanz: Project administration, Funding acquisition, Writing - review and editing. All authors have read and agreed to the published version of the manuscript.

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Conflicts of interest

All authors declare no conflict of interest.

Declaration of availability of data

The data that support the findings of this study are available at <https://doi.org/10.6084/m9.figshare.21701231>

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