Psychological factors associated with anxiety and depression in school administrators during the COVID-19 pandemic

Heber Nehemias Chui Betancur[1], Katia Pérez Argollo[1], Edgar Dario Callohuanca Avalos[2], Lily Maribel Trigos Sánchez[2], Peregrino MelitónLópez Paz[3]
[1]Postgraduate Research Institute, National Altiplano University – Puno, Perú
hchui@unap.edu.pe; kperez@unap.edu.pe
[2]Accounting Sciences Institute, National Altiplano University – Puno, Perú
ecallohuanca@unap.edu.pe; lilytrigos@unap.edu.pe
[3]Social Science Institute, National Altiplano University – Puno, Perú
peregrinolopez@unap.edu.pe

ABSTRACT

The COVID-19 pandemic had an adverse influence on education systems around the world, especially, since the closure of schools in various countries and the indefinite closure of schools in Peru began; The purpose of the present study was to identify the psychological factors associated with anxiety and depression in school administrators during the COVID-19 pandemic in the Puno region, Peru. An online survey was conducted using the HARS (Hamilton Anxiety Rating Scale) and HDRS (Hamilton Depression Rating Scale) tests to 84 (66.67%) men and 42 (33.33%) women with an average age = 48. 32 ± 7.41 years. The prevalence of anxiety was 60.32% for women and 43.65% for men, being higher for women (P <0.0005). The global prevalence of depression was 63.49% for women and for men, it was 38.89% (P <0.05), the prevalence being higher for women. Gender was found to be associated with the prevalence of anxiety (P <0.0005). It is concluded that depression and anxiety affect the mental health of the population, so it is necessary to address the mental health problems of people during this COVID-19 pandemic.

Keywords: Mental Health, COVID 19, anxiety, depression.

INTRODUCTION

In December 2019, a group of 41 patients with pneumonia of unknown cause, with clinical pictures characteristic of a viral pneumonia, became associated with a seafood market in Wuhan, Hubei, China(Zhu et al., 2020);After a thorough analysis using impartial sequencing of the lower respiratory tract samples, it was determined that we were facing a 2019 New Coronavirus disease, (Commission Wuhan Municipal Health, 2020; World Health Organization, 2020c)whose incubation period is 1 to 14 days, mainly 3 to 7 days, the main manifestations of this disease are: fever, dry cough and fatigue(Lu, Stratton, and Tang, 2020).Then on March 11, 2020, the World Health Organization officially recognized it as a Pandemic (World Health Organization, 2020d).

The COVID-19 pandemic had an adverse influence on education systems around the world(Tan et al., 2020; Kim & Su, 2020)especially since school closings began in various countries and consequently(Rodríguez et al., 2020), the indefinite closure of the Educational Institutions of Peru as of March 16, 2020 according to supreme decree (DS No 044-2020-PCM, 2020; DS No 116-2020-PCM, 2020); This fact represented a new experience for teachers, students, directors and parents, which at the same time threatens an increase in psychological factors associated with depression and anxiety (Diario oficial el peruano, 2021).

The Peruvian educational system implemented a strategy called "I learn at home" that works through a multiplatform of internet, cell phone, television and radio (Minedu, 2021),

For this strategy to work, internet access is necessary through a laptop, tablet, cell phone or other devices, however, the 2019 National Household Survey shows that only 32.1% of households have a computer or laptop; only 35.9% have fixed internet access and in rural areas internet access is almost nil(Enaho, 2021);In some regions of Peru, the "I learn at home" strategy is accessed only by television and radio (IPE, 2021).This reality had disastrous consequences for the achievement of learning, so much so that it is expected that schoolchildren would be below the level reached in 2012 in reading comprehension and mathematics. In addition, 245,000 students interrupted their studies in 2020 and 460,000 were at risk of interrupting them(Diario oficial el peruano, 2021).

In Peru, psychological factors associated with anxiety and depression affect 1 in 3 people due to the mandatory confinement decreed by the government, to face COVID-19, anxiety and depression affect more people under 35 years of female sex and low socioeconomic status (USIL, 2021). In the Peruvian educational field, psychological factors show that 34% of primary school students, 45% of secondary school students, consequently in teachers, managers and the educational community have experienced depression and anxiety in 2020(Diario oficial el peruano, 2021), This fact prevents teachers, students and the educational community from performing optimally, facing the usual difficulties of life and contributing to their community (Manning et al., 2021).

Therefore, the purpose of this study is to identify the psychological factors associated with anxiety and depression in school administrators during the COVID-19 pandemic.

METHOD

In this study, a non-experimental design was adopted that consisted in the application of the cross-sectional survey to evaluate the psychological factors associated with anxiety and depression in school administrators during the COVID-19 pandemic. The surveys applied in this study were those of HARS (Hamilton Anxiety Rating Scale) and HDRS (Hamilton Depression Rating Scale), during the months and of March, April and May of 2021 to 126 managers of which 84 are men and 42 women. whose ages ranged from 35 to 63 years with an average age = 48.32 ± 7.41 years (Table 1).

For the processing of information related to depression, the HDRS scale was applied, (Bulbena et al., 2003; Hamilton, 1960, 1967)whose score is: depressed, 0-7 points; mild depression, 8-13 points; moderate depression, 14-18; severe depression, 19-22 points and very severe depression, greater than 23 points; The instrument obtained a reliability coefficient of Cronbach's α = 0.882. For the processing of the information on the anxiety rating, the HARS scale was applied(Bulbena et al., 2003; Hamilton, 1959; Montiel et al., 2015)whose score is: No Anxiety, 0-5 points; Mild 6-14 points; Moderate, 15-25 points; Severe, greater than 25 points, Cronbach's α coefficient = 0.914

Table 1: Sociodemographic characteristics by academic grade of residents

Characteristics	Total (N = 126)	*P* valor
Age (n = 126)		
average (DE)	48,32 ±7,41 años	
Sex		<0,0001

Man	84	(66,67%)	
Women	42	(33,33%)	
School location			<0,0001
City (Puno)	89	(70,63%)	
Rural (Puno)	37	(29,37%)	
Marital status			<0,0001
Single	8(6,35%)		
Married	63	(50,00%)	
Cohabiting	55	(43,65%)	

To collect the information and prevent the spread of severe acute respiratory syndrome Coronavirus-2 (SARS-CoV-2), an online cross-sectional survey based on the HDRS and HARS questionnaires was used. These questionnaires were applied on-line, they were sent over the internet using: Facebook, WhatsApp and emails. The evaluated managers were able to access the survey and respond by clicking on the corresponding link.

For the statistical analysis of categorical data represented by percentage frequencies, Pearson's chi-square test was used. Statistical analyzes were performed using the IBM SPSS Statistics Program for Windows Version 25, with P <0.05 statistically significant.

RESULTS AND DISCUSSION

The growing threat from COVID-19 led to psychological factors associated with anxiety and depression due to measures of social isolation, which involves the excessive purchase of necessary goods due to panic generated by information in the media, plans interrupted travel(Ho, Chee, and Ho, 2020),the tension due to the loss of production, and the economic recession(Clavellina and Domínguez, 2020; Onrubia, 2020), being education professionals a silent sector but with great anxiety and stress problems that affect learning achievement(Li et al., 2020). The global prevalence of anxiety was 51.59% between moderate and severe, while the global prevalence of depression was 53.95% between moderate and severe (P <0.05). The prevalence of anxiety was 60.32% for women and 43.65% for men, being higher for women. The global prevalence of depression was 63.49% for women and for men, it was 38.89% (P <0.05), the prevalence being higher for women (Table 2). Gender was found to be associated with the prevalence of anxiety (P <0.0005).

Table 2: Distribution of depression and anxiety levels in managers.

Disorder	Total	Males	Women	*P* value
Anxiety				**0,0001**
No anxiety	18,25% (n=23)	23,81% (n=30)	12,70% (n=16)	
Mild anxiety	30,16% (n=38)	32,54% (n=41)	26.98% (n=34)	

Moderate anxiety	42,86% (n=54)	36,51% (n=46)	46,03% (n=58)	
Severe anxiety	8,73% (n=11)	7,14% (n=9)	14,29% (n=18)	
Depression				**0,0001**
No depression	18,26% (n=23)	22,22% (n=28)	14,29% (n=18)	
Mild depression	27,77% (n=35)	38,89% (n=49)	22,22% (n=28)	
Moderate depression	32,54% (n=41)	26,98% (n=34)	49,21% (n=62)	
Severe depression	21,43% (n=27)	11,91% (n=15)	14,28% (n=18)	

The highest prevalence of anxiety in men aged 55 to 65 years was 16.81%; while the highest prevalence of anxiety in women aged 35 to 45 years was 72.11%. The lowest prevalence of anxiety in men aged 45-55 years was 16.24%; meanwhile, the lowest prevalence of anxiety for women with 55-65 years of age was 16.38% (Fig. 1). The highest prevalence of anxiety (17.94%) in managers aged 35-45 years were those who work in urban areas, while the lowest prevalence of anxiety (13.87%) in managers aged 45-55 years who work in rural areas (Fig. 2). Anxiety is a feeling of tension, worry, and physical changes such as increased blood pressure, sweating, tremors, dizziness, or a rapid heartbeat (Marks, 1986). Anxiety, when it is above its normal level, weakens the immune system. and as a result, the risk of virus infection increases(World Health Organization, 2020b).
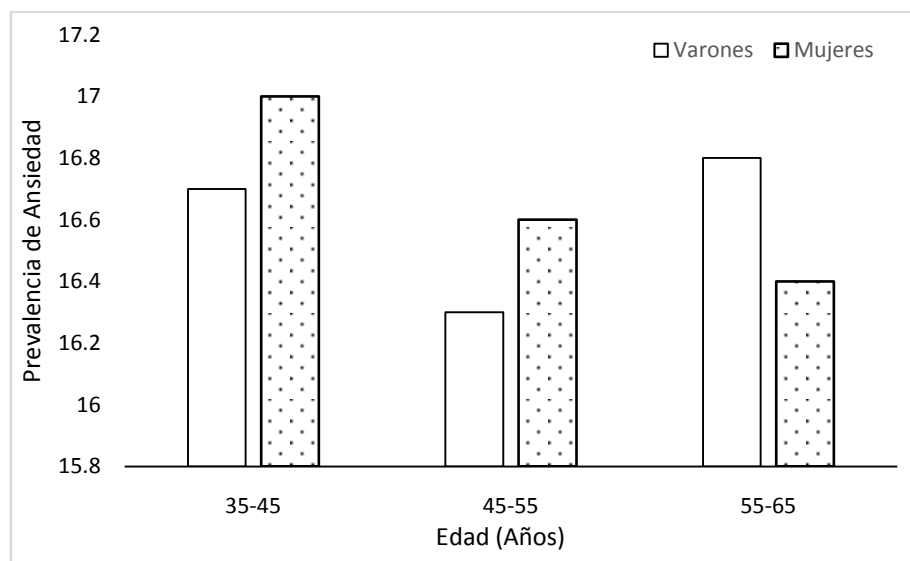

Figure 1. Prevalence of anxiety in school directors according to age and gender.
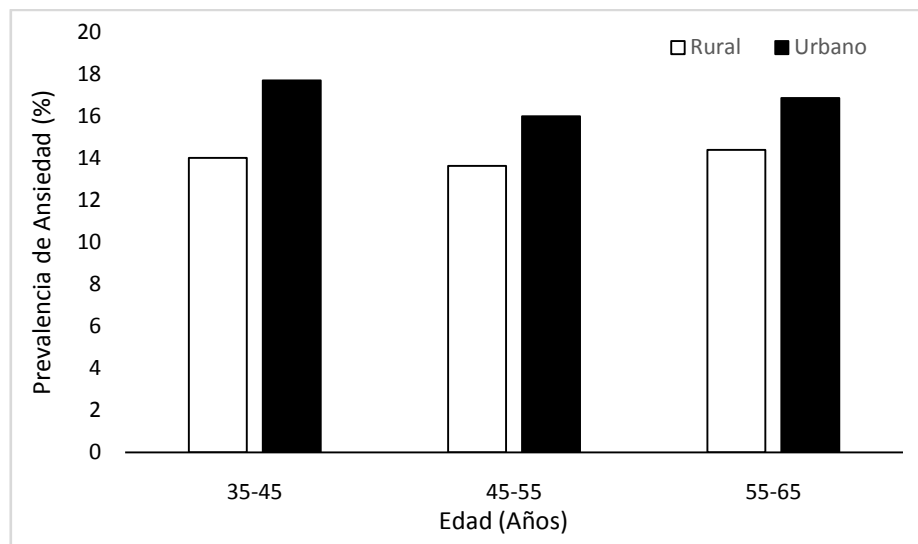
Figure 2. Prevalence of anxiety in school directors according to location and age.

The highest prevalence of depression in men aged 55 to 65 years was 16.01%; while the highest prevalence of depression in women aged 55 to 65 years was 21.10%. The lowest prevalence of depression in men aged 45-55 years was 14.84%, while the lowest prevalence of depression for women aged 55-65 years was 16.64% (Fig. . 3). The highest prevalence of depression (18.68%) in managers aged 45-55 years were those who work in urban areas, while the lowest prevalence of depression (14.18%) in managers aged 35-45 years were those who work in rural areas (Fig. 4). Depression is one of the most common psychiatric disorders, with a prevalence of 3% in men and 4-9% in women; cause considerable suffering to patients and their families, is associated with loss of personal productivity and a marked increase in the risk of suicide (Rosales, Gallardo, and Conde, 2005).
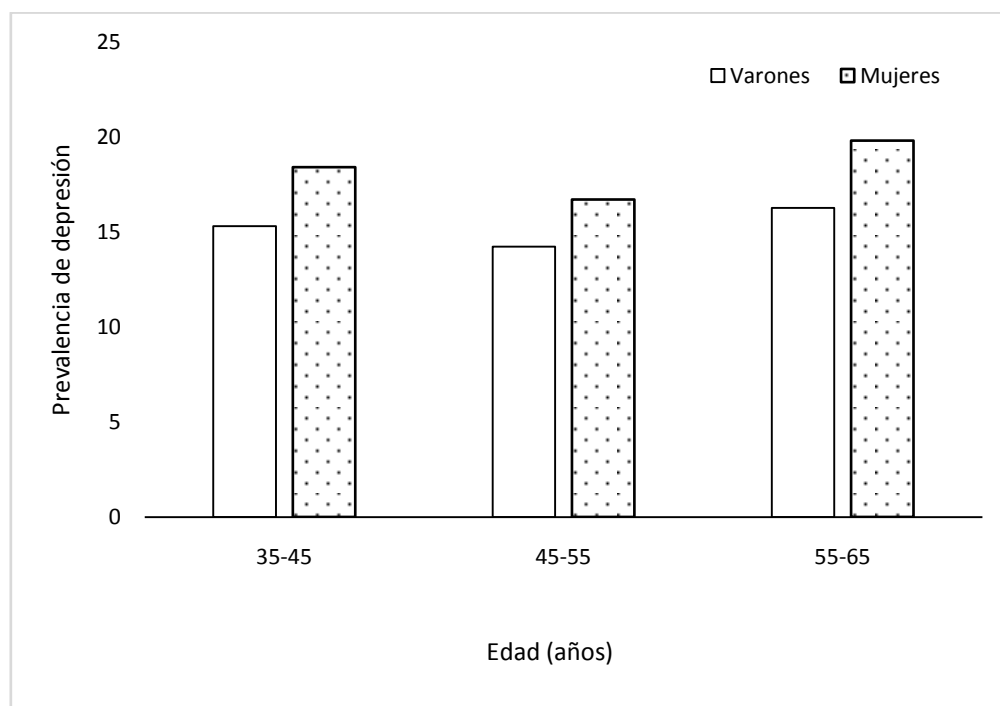
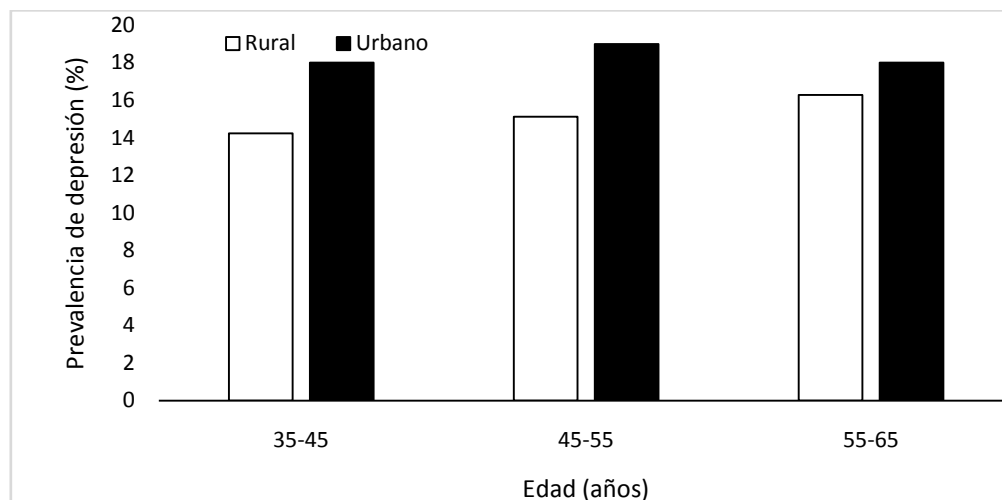Figure 3. Prevalence of depression in school leaders according to age and gender.

Figure 4. Prevalence of depression in school administrators according to location and age.

In numerous studies conducted in patients with COVID-19; medical staff and educational actors, high levels of anxiety and depression were identified due to COVID-2019(Huang and Zhao, 2020; Liu, Chen, et al., 2020; MoghanibashI, 2020; Roy et al., 2020),the need for medical attention to reduce anxiety in high-risk groups was also observed in more than 80% of participants(Moghanibashi, 2020),so there is a need to heighten awareness and address people's mental health issues during this COVID-19 pandemic(Roy et al., 2020), as is the case of this study in directors of schools in the Puno region.

CONCLUSIONS

The prevalence of anxiety was 60.32% for women and 43.65% for men, being higher for women (P <0.0005). The global prevalence of depression was 63.49% for women and for men, it was 38.89% (P <0.05), the prevalence being higher for women. Gender was found to be associated with the prevalence of anxiety (P <0.0005).

REFERENCES

Bulbena, A., Bobes, J., Luque, A., Dal-Ré, R., Ballesteros, J., & Ibarra, N. (2003). Validación de las versiones en español de la Clinical Anxiety Scale y del Physician Questionnaire para la evaluación de los trastornos de ansiedad. *Medicina Clínica*, *121*(10), 367–374. https://doi.org/10.1016/S0025-7753(03)73953-0

Clavellina, J. L., & Domínguez, M. I. (2020). *Implicaciones económicas de la pandemia por COVID-19 y opciones de política.* http://www.bibliodigitalibd.senado.gob.mx/handle/123456789/4829

Commission Wuhan Municipal Health. (2020). *Report of novel coronavirus-infected pneumonia in China.* http://wjw.wuhan.gov.cn/front/web/showDetail/2020012009077

Diario oficial el peruano. (2021). *Recuperar el aprendizaje de los estudiantes afectados por la pandemia.* Bajos Niveles En Comprensión Lectora. https://elperuano.pe/noticia/127619-minedu-objetivo-es-recuperar-el-aprendizaje-de-los-estudiantes-afectados-por-la-pandemia

ENAHO. (2021). *Encuesta Nacional de Hogares (ENAHO) 2019 [Instituto Nacional de Estadística e Informática - INEI]*. Plataforma Nacional de Datos Abiertos. https://www.datosabiertos.gob.pe/dataset/encuesta-nacional-de-hogares-enaho-2019-instituto-nacional-de-estadística-e-informática-inei

Hamilton, M. (1959). The assessment of anxiety states by rating. *Br J Med Psychol.*, *32*, 50–55.

Hamilton, M. (1960). A rating scale for depression. *J Neurol Neurosurg Psychiatry.*, *23*, 56-62.

Hamilton, M. (1967). Development of a rating scale for primary depressive illness. *Br J Soc Clin Psychol*, *6*, 278–296.

Ho, C., Chee, C., & Ho, R. (2020). Mental Health Strategies to Combat the Psychological Impact of COVID-19 Beyond Paranoia and Panic. *Ann Acad Med Singapore.*, *16*(49), 155–160.

Huang, Y., & Zhao, N. (2020). Generalized anxiety disorder, depressive symptoms and sleep quality during COVID-19 epidemic in China: a web-based cross-sectional survey. *Psychiatry Research*, *288*(April), 2020.02.19.20025395. https://doi.org/https://doi.org/10.21203/rs.3.rs-17172/v1

IPE. (2021). *Educación en tiempos de COVID*. Instituto Peruano de Economía. https://www.ipe.org.pe/portal/educacion-en-los-tiempos-del-covid-19-aprendo-en-casa/

Kim, S. W., & Su, K. P. (2020). Using psychoneuroimmunity against COVID-19. *Brain, Behavior, and Immunity*, *87*, 4–5. https://doi.org/10.1016/J.BBI.2020.03.025

Li, Z., Ge, J., Yang, M., Feng, J., Qiao, M., Jiang, R., Bi, J., Zhan, G., Xu, X., Wang, L., Zhou, Q., Zhou, C., Pan, Y., Liu, S., Zhang, H., Yang, J., Zhu, B., Hu, Y., Hashimoto, K., … Yang, C. (2020). Vicarious traumatization in the general public, members, and non-members of medical teams aiding in COVID-19 control. *Brain, Behavior, and Immunity*, *March*, 0–1. https://doi.org/10.1016/j.bbi.2020.03.007

Liu, K., Chen, Y., Wu, D., Lin, R., Wang, Z., & Pan, L. (2020). Effects of progressive muscle relaxation on anxiety and sleep quality in patients with COVID-19. *Complementary Therapies in Clinical Practice*, *39*, 101132. https://doi.org/10.1016/j.ctcp.2020.101132

Lu, H., Stratton, C. W., & Tang, Y. W. (2020). Outbreak of pneumonia of unknown etiology in Wuhan, China: The mystery and the miracle. *Journal of Medical Virology*, *92*(4), 401–402. https://doi.org/10.1002/jmv.25678

Manning, M. Lou, Gerolamo, A. M., Marino, M. A., Hanson-zalot, M. E., & Pogorzelska-maziarz, M. (2021). COVID-19 vaccination readiness among nurse faculty and student nurses. *Nursing Outlook*, *0*, 1–9. https://doi.org/10.1016/j.outlook.2021.01.019

Marks, I. M. (1986). *Tratamiento de la neurosis : teoría y práctica de la psicoterapia conductual* (Primera ed). https://books.google.com.pe/books?id=UHUaPAAACAAJ&dq=Tratamiento+de+la+neurosis+:+teoría+y+práctica+de+la+psicoterapia+conductual&hl=es&sa=X&ved=0ahUKEwiF8vfa5IbpAhXqGbkGHXYiA5MQ6AEIJjAA

Minedu. (2021). *Aprendo en casa*. Aprendo En Casa: Unete a Esta Aventura. https://aprendoencasa.pe/#/

Moghanibashi, A. (2020). Assessing the anxiety level of Iranian general population during COVID-19 outbreak. *Asian Journal of Psychiatry*, *51*(March), 102076. https://doi.org/10.1016/j.ajp.2020.102076

Montiel, Á. J., Torres, M. E., Herrera, M. G., Ahumada, Ó. O., Barragán, R. G., García, A., & Loría, J. (2015). Current state of depression and anxiety in residents of Orthopedics and Traumatology in a Third Level Medical Facility. *Educacion Medica*, *16*(2), 116–125. https://doi.org/10.1016/j.edumed.2015.09.006

Onrubia, J. (2020). *Crisis económica en tiempos del COVID-19: La hora de la política fiscal y de la gestión pública*. https://eprints.ucm.es/60033/1/Nº6.pdf

Rodríguez, A., Buiza, C., Álvarez de Mon, M. A., & Quintero, J. (2020). Update on COVID-19 and mental health. *Medicine (Spain)*, *13*(23), 1285–1296. https://doi.org/10.1016/j.med.2020.12.010

Rosales, J. E., Gallardo, R., & Conde, J. M. (2005). Prevalencia de episodio depresivo en los médicos residentes del Hospital Juárez de México. *Rev Esp Med Quir*, *10*, 25–36. https://www.medigraphic.com/pdfs/quirurgicas/rmq-2005/rmq051e.pdf

Roy, D., Tripathy, S., Kar, S. K., Sharma, N., Verma, S. K., & Kaushal, V. (2020). Study of knowledge, attitude, anxiety & perceived mental healthcare need in Indian population during COVID-19 pandemic. *Asian Journal of Psychiatry*, *51*(PG-102083-102083), 102083. https://doi.org/https://doi.org/10.1016/j.ajp.2020.102083

Tan, W., Hao, F., Mcintyre, R. S., Jiang, L., Jiang, X., Zhang, L., Zhao, X., Zou, Y., Hu, Y., Luo, X., Zhang, Z., Lai, A., Ho, R., Tran, B., Ho, C., & Tam, W. (2020). Is Returning to Work during the COVID-19 Pandemic Stressful? A Study on Immediate Mental Health Status and Psychoneuroimmunity Prevention Measures of Chinese Workforce. *Brain Behavior and Immunity*, *87*, 84–92. https://doi.org/https://doi.org/10.1016/j.bbi.2020.04.055

USIL. (2021). *Covid-19 en el Perú: aumentan casos de ansiedad y depresión*. Ansiedad y Depresión. https://www.usil.edu.pe/noticias/covid-19-en-el-peru-aumentan-casos-de-ansiedad-y-depresion

World Health Organization. (2020a). Mental Health and Psychosocial Considerations During COVID-19 Outbreak. In *Mental health*. https://apps.who.int/iris/bitstream/handle/10665/331490/WHO-2019-nCoV-MentalHealth-2020.1-eng.pdf

World Health Organization. (2020b). Novel Coronavirus (2019-nCoV) Situation Report - 1, 21 January 2020. In *WHO Bulletin* (Issue JANUARY). https://www.who.int/docs/default-source/coronaviruse/situation-reports/20200121-sitrep-1-2019-ncov.pdf

World Health Organization. (2020c). *WHO announces COVID-19 outbreak a pandemic*. 11-03-2020. http://www.euro.who.int/en/health-topics/health-emergencies/coronavirus-covid-19/news/news/2020/3/who-announces-covid-19-outbreak-a-pandemic

Zhu, N., Zhang, D., Wang, W., Li, X., Yang, B., Song, J., Zhao, X., Huang, B., Shi, W., Lu, R., Niu, P., Zhan, F., Ma, X., Wang, D., Xu, W., Wu, G., Gao, G. F., & Tan, W. (2020). A novel coronavirus from patients with pneumonia in China, 2019. *New England Journal of Medicine*, *382*(8), 727–733. https://doi.org/10.1056/NEJMoa2001017