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 15. Attridge et al. American Journal of Health Promotion September 2022
 16. Mulvaney-Day et al. American Journal of Health Promotion September 2022
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Addressing Workplace Stressors Emerging from the Pandemic



Ying Zhang, MsPH¹, Elizabeth H. Woods, MsPH¹, Enid Chung Roemer, PhD², Karen B. Kent, MPH², and Ron Z. Goetzel, PhD²

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workplace, wellbeing, mental health, Corona Virus-2019, stressors

Introduction

Faced with new and exacerbated stressors on workers due to COVID-19, employers are asking what they can do to support employees' mental health and wellbeing and rebuild a resilient workforce. To serve as a guide, this paper reviews workplace interventions aimed at improving workers' mental health and wellbeing. The review was developed with support from the National Institute for Occupational Safety and Health (NIOSH) Total Worker Health[®] Centers of Excellence as part of a broader program to design, implement, and evaluate large-scale initiatives focused on mental health in the workplace.¹

Background

In March 2020, the World Health Organization² (WHO) declared COVID-19 a pandemic, the effects of which would create immense and long-lasting damage to societies and their economies. COVID-19 negatively affected employee mental and physical health, and consequently workforce productivity.³ Specifically, since the COVID-19 pandemic emerged, employees have reported increased stress and anxiety levels precipitated by new circumstances affecting work-life balance, employment status, and financial insecurity.⁴ Organizations have endured forced shutdowns, revenue instability, absenteeism, vacancies, and low productivity, all of which have exerted a profound impact on business climate and the global economy.⁵⁻⁷

Factors affecting workplace mental health and wellbeing during the pandemic were organized into 3 stressor categories: Psychosocial, Organizational, and Environmental (POE factors).

Psychosocial Stressors

A worker's personal characteristics and psychological state influence their workplace behaviors and interface with psychosocial stress at work, eg, job demand-support and effort-reward imbalance. One of the most prominent psychosocial stressors is work-life conflict, which the pandemic aggravated through increased workload and irregular work schedules.^{8,9} Additionally, school and daycare closures blurred

home-life boundaries, especially for women who are often expected to take on a larger share of family and childcare responsibilities in addition to their paying jobs.^{10,11}

Fear of COVID-19 exposure and infection was another psychosocial stressor. For months, the novel nature of the virus and limited treatment options fostered intense anxiety among workers who were unable to limit contact to infected individuals. Some workers were faced with the dilemma of protecting the health of members of their household or keeping a job that provided needed income. For workers who were able to limit physical contact with others, social isolation took a heavy toll on their sense of connectedness and social engagement.^{12,13}

Organizational Stressors

Organizational conditions include the set of programs, policies and environmental supports that foster a healthy and safe workplace. During the pandemic, organizations had to modify processes and policies to address emergent supply chain shortages, requirements for technological adaptation, staffing limitations, and uneven demand for products and services. Unprepared human resource management led to increased anxiety and uncertainty among staff, which intensified workplace conflicts.^{14,15}

Wages and salaries did not increase in proportion to workload and work demands, causing increased financial stress on employees. For workers in industries whose earnings included tips from in-person interactions, the pandemic reduced take-home pay. Over half of restaurant workers reported they would not

¹Johns Hopkins Bloomberg School of Public Health

²Institute for Health and Productivity Studies, Johns Hopkins Bloomberg School of Public Health, Baltimore, MD, USA

Corresponding Author:

Enid Chung Roemer, Institute for Health and Productivity Studies, Johns Hopkins Bloomberg School of Public Health, 624 N Broadway, Baltimore, MD 21205, USA.

Email: eroemer1@jhu.edu

Table 1. Psychosocial, organizational, and environmental (POE) stressors, interventions, and expected outcomes.

Dimension	Stressors	Interventions	Expected Outcomes
Psychosocial	<ul style="list-style-type: none"> • Work-life conflict • Fear of COVID-19 exposure and infection • Social isolation 	<ul style="list-style-type: none"> • Self-care • Employee empowerment • Social connectedness • Mental health services 	Decrease in <ul style="list-style-type: none"> • Psychological stress, distress, and anxiety • Burnout • Stigma and feelings of isolation • Post-traumatic and other stress disorders • Insomnia • Anger and cynicism • Behavioral deviance
Organizational	<ul style="list-style-type: none"> • Increased workload • Poor human resource management • Economic/job insecurity • Lack of employer-sponsored benefits 	<ul style="list-style-type: none"> • Assistance programs providing concrete support • Improved communication 	Decrease in <ul style="list-style-type: none"> • Employee turnover rates and voluntary resignations • Inability to fill job vacancies • Poor employee performance
Environmental	<ul style="list-style-type: none"> • Physical environment conducive to virus transmission • Frequent face-to-face interactions • Loosely enforced safety protocols • Limited access to personal protective equipment (PPE) • Unclear regulatory guidance and communication 	<ul style="list-style-type: none"> • Reinforcing infection control measures • Providing PPE and clear instructions on use • Adding safety trainings and workshops • Reaching out directly to employees regarding environmental interventions • Ensuring workspaces are well-ventilated, accommodate social distancing, and installing appropriate physical barriers 	Decrease in <ul style="list-style-type: none"> • Risk of contracting COVID-19 • Risk of sustaining an injury • Substance and alcohol use • All-cause mortality

come back to their jobs unless higher steady wages and consistent schedules were offered.¹⁶ Further, the pandemic intensified known structural issues such as inadequate employer and government-sponsored benefits (eg, health insurance, childcare benefits, and paid sick leave).

Environmental Stressors

Biological (including viral), chemical, mechanical/ergonomic, and physical exposures impact worker illness, injury and mental health outcomes. Front line workers reported feeling unsafe during the early stages of the pandemic because social distancing to reduce viral exposures was not always possible or enforced. Further, access to personal protective equipment (PPE) was limited even for health care workers, and communications regarding safe working conditions were inconsistent.^{14,17-21}

Employee Outcomes

As a result of these stressors, employees have reported increased psychological distress, depression, anxiety, burnout, feelings of isolation, insomnia, anger, and cynicism.^{17,20-22} Working in unsafe environments heightened the risk of contracting COVID-19 and sustaining injuries.^{22,23} Workers also experienced increased drug and alcohol use as mechanisms to cope with stress.^{13,23,24} Workers' deteriorated health has been linked to

decreased employee performance, increased job vacancies, and high turnover.^{14,16,22,25-28}

Interventions

We conducted a literature review to identify interventions to address the immediate crisis of COVID-19 along with strategies applicable to non-crisis situations (Table 1 and Table 2). In the narrative that follow the tables, we elaborate on the interventions and their value in addressing mental health and wellbeing challenges at work.

Psychosocial Interventions

Employers can implement psychosocial interventions that focus on self-care, employee empowerment, social connectedness, and access to mental health services. We describe examples of each in this section.

Self-care is the first step in resilience building. Employers can communicate the importance of self-care during crises by addressing the health benefits of self-care routines such as: taking breaks, getting enough sleep, and healthy eating and meal preparation; and offer resources such as: mindfulness and relaxation trainings, access to meditation apps, and physical exercise incentives.^{3,30,35-38} Employers can also give employees permission to flexibly schedule self-care into their daily routine.^{30,37} Finally, employers can train managers to model self-care to build healthy cultural norms.^{13,19,38-40}

Table 2. Sample Programs Addressing the POE Factors.

Dimension	Sample Program	Program Elements	Satisfaction	Program Impact
Psychosocial	A “help point” program ²⁹	<p>After psychological support requests are made by healthcare workers, a multidisciplinary team follow 6 steps:</p> <ol style="list-style-type: none"> 1. Conduct a demand analysis of the support request 2. Conduct a case assessment 3. Provide psychological support to healthcare workers when needed 4. Collect feedback 5. Compare pre- and post-intervention health status 6. Monitor healthcare workers’ health status to ensure improvement sustainability 	High	<ul style="list-style-type: none"> • Improved healthcare workers’ productivity • Sickness absence days reduced by 60% • Net profit related to reduced absenteeism in a year was estimated to be EUR 58919.13, yielding a return on investment (ROI) of EUR 2.73 for each euro spent • High participation. Accessed 17 633 times within 7 days of release, High satisfaction. Recruited healthcare workers and students (n = 55) assessed the package and reported high content quality, intervention practicality, and package usability • Outcomes not yet assessed • Increased likelihood of engaging in physical activity, healthy eating • Positive changes in employee engagement, job satisfaction, and organizational commitment • Increased sense of fairness • Decreased sense of discrimination and social exclusion
	A digital psychological wellbeing support package for healthcare workers ³⁰	Healthcare workers use an interactive e-learning package to locate information and resources on COVID-19-related psychological impacts, psychologically supportive teams, communication, social support, self-care, managing emotionsetc.	High	
	Improving employees’ physical and mental behavioral health with the assistance of wearable devices ³¹	Employees wear a device that keeps track of behaviors such as physical activity, healthy food choices, and sleep	Not directly measured	
	Prioritizing a diversity climate and perceived supervisor support ³²	Supervisors provide informational and emotional support to employees and address cynicism that can foster distrust and harassment in the workplace	Not directly measured	

(continued)

Table 2. (continued)

Dimension	Sample Program	Program Elements	Satisfaction	Program Impact
Organizational	Inclusive leadership ⁸	Managers exhibit "words and deeds that invite and appreciate others' contributions"	High	<ul style="list-style-type: none"> • Assessment results showed that inclusive leadership negatively correlated to psychological distress and positively correlated to work engagement • Created an open and engaging environment for healthcare workers. Reduced psychological distress significantly and sustainably
	Managers' supportive behaviors ¹⁵	Managers create a positive psychosocial safety climate in which organizational policies and practices are perceived as protective to employees' physical and psychological health. Showing genuine concerns about employees' welfare and acting quickly to address employee health issues are 2 examples of manager support. Managers demonstrate supportive behaviors such as paying attention to employees' health and wellbeing, showing appreciation, and providing guidance	Not directly measured	<ul style="list-style-type: none"> • A positive psychosocial safety climate accounts for a 13% increase in employees' wellbeing score and a 13% decrease in employees' symptoms of common mental disorders • Managers' supportive behaviors account for a 10% increase in employees' wellbeing score and a 7% decrease in employees' symptoms of common mental disorders
	Paid sick leave ³³	Provide employees in all states with 1 hour of paid sick leave for every 30 hours worked. The formula is retroactively applied to the prior 26 weeks	High	<ul style="list-style-type: none"> • A 49% expansion of paid sick leave access (employees who were qualified for paid sick leave were expanded from those from 11 states and DC to all employees) reduced presenteeism by approximately 15% • Workers who had 2 or more years of tenure with the company had the largest decrease in presenteeism • Turnover was significantly reduced by coworker socializing and managerial support for fun at workplace
	A fun workplace ²⁸	Plan fun activities, social opportunities, and set expectation that manager encourages employee socializing, and provides clear and meaningful job description at training	Moderate	
Environmental	Universal masking ³⁴	Require mask-wearing for all healthcare workers at workplace	Not measured	<ul style="list-style-type: none"> • PPE can effectively prevent healthcare workers from being infected

Employers can also acknowledge that it is common to feel powerless during a crisis that has a long-lasting, worldwide impact. Employers can empower their employees by encouraging employees to take breaks when needed; encouraging employees to speak up when struggling^{9,40-43}; offer employees accommodative work arrangements^{44,45}; and grant employees the opportunity and authority to participate in decision-making.^{23,40,44,46,47}

For workers who report feeling isolated and disconnected, employers can help build interpersonal support and social connectedness to instill a sense of belonging, support, and social fulfillment in the workplace⁴⁶; be attentive to workers' feelings, feedback, and non-workplace needs⁴⁸; highlight shared goals and promote a team growth mindset⁴¹; provide platforms to bond employees over shared experiences and mutual concerns^{12,40}; implement a buddy system in which employees are paired to provide mutual support^{38,41,49}; and use digital communication platforms when in-person check-ins are not feasible.³⁵

Supporting access to mental health care is critical and can address employees' stress and anxiety,^{50,51} foster healthy relationships in the workplace, and improve productivity.⁵² Employers can remove barriers to treatment by having counselors available on site or near workplaces^{12,53}; offering virtual mental health resources as an alternative when in-person care is not available⁵⁴; expanding Employee Assistance Programs (EAPs) using online mental health resources⁴⁴; and providing free subscriptions to credible mental health applications and platforms.⁴⁴

For employees experiencing acute psychological symptoms of stress, psychological first aid should be added in the toolkit. A mental health analogue to physical first aid, psychological first aid (PFA) is a form of psychological crisis intervention that has been shown to be effective in reducing acute stress.⁵⁵ For example, the Johns Hopkins RAPID psychological first aid model is an evidence-based intervention involving Reflective listening, Assessment, Prioritization, Intervention and Disposition.⁵⁶

Example interventions providing psychosocial support (see Table 2). A "Help Point" program, offered by Bambino Gesù Children's Hospital in Rome, Italy, was led by a multidisciplinary team and followed a six-step process to provide psychological support to healthcare workers.²⁹ A "demand analysis" was first completed to assess healthcare workers' contextual needs for psychological assistance. Then, psychologists and occupational health physicians examined reported problems and complaints. A series of therapeutic interviews conducted by the psychologist followed. The monitoring phase assessed the sustainability of the program. Evaluation of the program found that 8 meetings were adequate for significant mental health improvement. Participants reported reduced work discomfort, improved mental health, and decreased absenteeism. The intervention also benefited the organization, in that sickness absence days were reduced by 60% and over EUR 58,000 of net profit related to reduced absenteeism in a year was generated for the hospital as workers' productivity improved, yielding a return on investment (ROI) of 2.73 for the program.

A digital psychological wellbeing support package for healthcare workers³⁰ was developed at the University of Nottingham during the first 3 weeks of the COVID-19 outbreak. The intervention included an interactive e-learning toolkit with links to psychological resources, supportive teams, self-care guides, and other sources relevant for the early stages of the pandemic. The platform was accessed 17 633 times within the first 7 days

of release. Users reported high satisfaction with the content quality, intervention practicality, and package usability.

Organizational Interventions

Organizations can support the wellbeing of employees by offering living wages, competitive benefits, incentives for risky assignments, and flexible work arrangements (eg, condensed work weeks, lower exposure positions for high-risk workers, and cross-training).^{16,23,44,45} Examples of organizational interventions include: non-punitive absence policies⁴⁵; paid time off and sick leave^{29,57}; provision of explicit career path growth opportunities⁵⁸; expanded benefits (including mental health care, childcare, eldercare)^{44,45,50}; free access to EAPs with allowances for additional therapy sessions^{44,50}; enhanced job security by offering furloughs (instead of layoffs or terminations) to employees not able to work due to temporary organizational insolvency or personal health reasons^{24,44}; provision of perks, such as food delivery, alternative housing/lodging, and childcare^{14,41,44}; and use of practical reintegration protocols for returning employees including reassimilation training, career advancement, and widely publicized resources for emotional and physical support.⁵⁹⁻⁶⁹

A healthy work environment is beneficial to workers' mental health and wellbeing during crises.^{70,71} Building a healthy company culture includes recognizing employees for their hard work; giving positive feedback routinely (not just during performance reviews); communicating opportunities for promotions and raises; and demonstrating social intelligence by listening closely in times of grief or high stress.^{8,23,72,73} Other ways to build healthy company cultures include organizing informal fun social events such as light-hearted team challenges.²⁸ Also shown to be effective in maintaining a healthy company culture is building an inclusive workforce that emphasizes diversity of opinion, race, ethnicity, gender, sexual orientation, and cultural background.^{8,32,50,74}

Organizations can heighten stressors if workplace communication lacks consistency, clarity, or empathy.³⁹ Strengthened communication can reduce unnecessary stress and improve team morale. Examples of activities that improve communications to employees include routine messaging to address fear or uncertainty¹⁸ provided in clear language,⁴¹ eg, updated policies, health behavior recommendations, and required safety protocols⁵⁹; increasing managers' availability to employees, welcoming constructive input, transparency in providing alternative actions, resources, and career growth opportunities^{9,57,60}; and communicating positive and hopeful sentiments and stories.^{44,61}

Example interventions involving organizational support (see Table 2). Paid sick leave has been shown to be effective in reducing presenteeism and retaining tenured employees.³³ An example is Olive Garden's approach that credits employees with 1 hour of paid sick leave for every 30 hours worked, and this formula is also retroactively applied to the prior 26 weeks.⁶³ A study found that a 49% expansion of Olive Garden's paid sick leave access reduced presenteeism by approximately 15%, and workers who had 2 or more years of tenure with the company had the most substantial reduction in presenteeism.³³

Environmental Interventions

The pandemic has required that workplaces consider both infrastructure and administrative controls to guard against exposure to

infectious agents. A healthy work environment, along with training in problem-focused coping strategies, has been shown to reduce post-traumatic stress disorders (PTSD).⁶⁴ Organizations can lessen environmental hazards by reinforcing infection control measures through frequent updates of safety protocols, ongoing monitoring of hazards, and investing in environmental air purification systems^{14,16,17,45,57,65-68}; providing PPE and clear instructions on its use as part of a normal work routine^{34,69}; providing safety trainings and workshops^{17,41,42,45,57,65}; ensuring workspaces are well-ventilated, accommodate social distancing, and contain appropriate physical barriers^{45,69}; and employee engagement to inform environmental interventions to make them feel safe returning to work.⁵⁰

A healthy work environment can provide comfort, foster a sense of security, encourage social bonding and community support, and help employees cope with stress during crises.^{70,71} Investment in workplace built environment (eg, ventilation and air purification systems, physical barriers) and administrative controls (e.g, social distancing, one-way traffic) can reduce exposures to the virus that causes COVID-19 and can improve worker perceptions of safety culture.

Example intervention involving environmental support (see Table 2). Because the virus that causes COVID-19 is so infectious through airborne routes,² universal masking – requiring employees to wear masks at workplace – has proven to be an effective environmental intervention. A Massachusetts community healthcare system secured N95 masks for all healthcare workers who directly worked with patients either confirmed or suspected of COVID-19 infection and other approved masks for all clinical and non-clinical staff. As a result, the 7-day average incidence rate between March 17th, 2020 to May 6th, 2020 decreased among the healthcare workers, whereas it increased among Massachusetts residents where universal masking was not mandated. The results showed that mask mandates among healthcare workers can significantly decrease SARS-CoV-2 positivity rate and slow the spread of the virus.³⁴

Conclusion

The impact of the COVID-19 pandemic has been significant and reverberating. When employers take initiative to identify psychosocial, organizational, and environmental stressors and intervene strategically in these areas, it will likely mitigate employee stress and further support a healthy, productive, resilient, and thriving workforce.

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References

- Centers for Disease Control and Prevention—National Institute for Occupational Safety and Health NIOSH Total Worker Health[®] Program, 2018. <https://www.cdc.gov/niosh/TWH/2018>
- World Health Organization [WHO]. *WHO Coronavirus Disease (COVID- 19) Dashboard*. Geneva: WHO; 2020.
- Sriharan A, Ratnapalan S, Tricco AC, et al. occupational stress, burnout, and depression in women in healthcare during COVID-19 pandemic: Rapid scoping review. *Front Glob Womens Health*. 2020;1:596690. doi:10.3389/fgwh.2020.596690
- Franklin P, Gkiouleka A. A Scoping review of psychosocial risks to health workers during the Covid-19 pandemic. *Int J Environ Res Publ Health*. 2021;18(5):2453. doi:10.3390/ijerph18052453
- Groenewold MR, Burrer SL, Ahmed F, Uzicanin A, Free H, Luckhaupt SE. Increases in Health-Related Workplace Absenteeism Among Workers in Essential Critical Infrastructure Occupations During the COVID-19 Pandemic — United States. *Morb Mortal Wkly Rep*. 2020;69(27):853-858. doi:10.15585/mmwr.mm6927a1.
- Xu X, Postel-Vinay F, Norris Keiller A, Costa Dias M. *Job Vacancies during the Covid-19 Pandemic*; 2020. doi:10.1920/BN.IFS.2020.BN0289
- Meyer BH, Prescott B, Sheng XS. The impact of the COVID-19 pandemic on business expectations. *Int J Forecast*. 2022;38(2): 529-544. doi:10.1016/j.ijforecast.2021.02.009
- Ahmed F, Zhao F, Faraz NA. How and when does inclusive leadership curb psychological distress during a crisis? Evidence From the COVID-19 Outbreak. *Front Psychol*. 2020;11:1898. doi:10.3389/fpsyg.2020.01898
- Hu X, Yan H, Casey T, Wu CH. Creating a safe haven during the crisis: How organizations can achieve deep compliance with COVID-19 safety measures in the hospitality industry. *Int J Hospit Manag*. 2021;92:102662. doi:10.1016/j.ijhm.2020.102662.
- Kim M, Kim J. Corporate social responsibility, employee engagement, well-being and the task performance of frontline employees. *Manag Decis*. 2021;59(8):2040-2056. doi:10.1108/MD-03-2020-0268.
- Evanoff BA, Strickland JR, Dale AM, Hayibor L, Page E, Duncan JG, et al.. Work-related and personal factors associated with mental well-being during the COVID-19 response: Survey of health care and other workers. *J Med Internet Res*. 2020; 22(8):e21366. doi:10.2196/21366.
- Pollock A, Campbell P, Cheyne J, et al. Interventions to support the resilience and mental health of frontline health and social care professionals during and after a disease outbreak, epidemic or pandemic: a mixed methods systematic review. *Cochrane Database Syst Rev*, 11. In: Cochrane Effective Practice and Organisation of Care Group; 2020. doi:10.1002/14651858
- Nisar QA, Haider S, Ali F, Naz S, Ryu K. Depletion of psychological, financial, and social resources in the hospitality

- sector during the pandemic. *Int J Hospit Manag.* 2021;93:102794. doi:10.1016/j.ijhm.2020.102794
14. Lippert JF, Furnari MB, Kriebel CW. The Impact of the COVID-19 pandemic on occupational stress in restaurant work: A qualitative study. *Int J Environ Res Publ Health.* 2021;18(19):10378. doi:10.3390/ijerph181910378.
 15. Petrie K, Gayed A, Bryan BT, et al. In: Dalal K, ed. *The importance of manager support for the mental health and well-being of ambulance personnel*; 2018. doi:10.1371/journal.pone.0197802
 16. Snagajob + Black Box Intelligence Restaurant Hourly Worker Report | Black Box Intelligence, 2022. (accessed January 17, 2022). <https://blackboxintelligence.com/snagajob-black-box-intelligence-restaurant-hourly-worker-report/>
 17. Ceryes C, Robinson J, Biehl E, Wirtz AL, Barnett DJ, Neff R. Frequency of workplace controls and associations with safety perceptions among a national sample of U.S. food retail workers during the COVID-19 Pandemic. *J Occup Environ Med.* 2021;63:557-564. doi:10.1097/JOM.0000000000002218
 18. Roberts JD, Dickinson KL, Koebele E, et al. Clinicians, cooks, and cashiers: Examining health equity and the COVID-19 risks to essential workers. *Toxicol Ind Health.* 2020;36(9):689-702. doi:10.1177/0748233720970439
 19. Muller AE, Hafstad EV, Himmels JPW, et al. The mental health impact of the covid-19 pandemic on healthcare workers, and interventions to help them: A rapid systematic review. *Psychiatr Res.* 2020;293:113441. doi:10.1016/j.psychres.2020.113441
 20. Sritharan J, Jegathesan T, Vimalaswaran D, Sritharan A. Mental health concerns of frontline workers during the COVID-19 Pandemic: A scoping review. *Glob J Health Sci.* 2020;12(11):89. doi:10.5539/gjhs.v12n11p89
 21. Serrano-Ripoll MJ, Meneses-Echavez JF, Ricci-Cabello I, et al. Impact of viral epidemic outbreaks on mental health of healthcare workers: A rapid systematic review and meta-analysis. *J Affect Disord.* 2020;277:347-357. doi:10.1016/j.jad.2020.08.034
 22. Mohammad Mosadeghrad A. Occupational stress and its consequences: Implications for health policy and management. *Leadersh Health Serv.* 2014;27(3):224-239. doi:10.1108/LHS-07-2013-0032
 23. Sorensen G, McLellan D, Dennerlein JT, et al. Integration of health protection and health promotion: Rationale, indicators, and metrics. *J Occup Environ Med.* 2013;55(suppl 12):S12-S18. doi:10.1097/JOM.0000000000000032
 24. Bufquin D, Park JY, Back RM, de Souza Meira JV, Hight SK. Employee work status, mental health, substance use, and career turnover intentions: An examination of restaurant employees during COVID-19. *Int J Hospit Manag.* 2021;93:102764. doi:10.1016/j.ijhm.2020.102764
 25. Wong AKF, Kim S, Sam, Kim J, Han H. How the COVID-19 pandemic affected hotel Employee stress: Employee perceptions of occupational stressors and their consequences. *Int J Hospit Manag.* 2021;93:102798. doi:10.1016/j.ijhm.2020.102798
 26. Labrague LJ, Santos JAA. COVID-19 anxiety among front-line nurses: Predictive role of organisational support, personal resilience and social support. *J Nurs Manag.* 2020;28(7):1653-1661. doi:10.1111/jonm.13121
 27. Davidson MCG, Wang Y. Sustainable labor practices? hotel human resource managers views on turnover and skill shortages. *J Hum Resour Hosp Tour.* 2011;10(3):235-253. doi:10.1080/15332845.2011.555731
 28. Tews MJ, Hoefnagels A, Jolly PM, Stafford K. Turnover among young adults in the hospitality industry: Examining the impact of fun in the workplace and training climate. *Empl Relat Int J.* 2020;43(1):245-261. doi:10.1108/ER-11-2019-0432.
 29. Dalmasso G, Di Prinzio RR, Gilardi F, et al. Effectiveness of psychological support to healthcare workers by the occupational health service: A pilot experience. *Healthcare.* 2021;9(6):732. doi:10.3390/healthcare9060732
 30. Blake H, Bermingham F, Johnson G, Tabner A. Mitigating the Psychological Impact of COVID-19 on Healthcare Workers: A Digital Learning Package. *Int J Environ Res Publ Health.* 2020;17(9):2997. doi:10.3390/ijerph17092997
 31. Torres EN, Zhang T. The impact of wearable devices on employee wellness programs: A study of hotel industry workers. *Int J Hospit Manag.* 2021;93:102769. doi:10.1016/j.ijhm.2020.102769
 32. Quratulain S, Al-Hawari MA. Interactive effects of supervisor support, diversity climate, and employee cynicism on work adjustment and performance. *Int J Hospit Manag.* 2021;93:102803. doi:10.1016/j.ijhm.2020.102803
 33. Schneider D, Harknett K, Vivas-Portillo E. Olive Garden's Expansion Of Paid Sick Leave During COVID-19 Reduced The Share Of Employees Working While Sick: Study examines Olive Garden's expansion of paid sick leave and the impact on incidence of employees working sick during COVID-19. *Health Aff.* 2021;40(8):1328-1336. doi:10.1377/hlthaff.2020.02320
 34. Lan FY, Christophi CA, Buley J, et al. Effects of universal masking on Massachusetts healthcare workers' COVID-19 incidence. *Occup Med.* 2020;70(8):606-609. doi:10.1093/occmed/kqaa179.
 35. Ye J. Advancing mental health and psychological support for health care workers using digital technologies and platforms. *JMIR Form Res.* 2021;5(6):e22075. doi:10.2196/22075
 36. Visagie N. Mitigating the psychological and mental health impact on frontline workers during COVID-19. *Belitung Nurs J.* 2020;6(4):141-142. doi:10.33546/bnj.1171
 37. Gerber M, Jonsdottir IH, Lindwall M, Ahlborg G. Physical activity in employees with differing occupational stress and mental health profiles: A latent profile analysis. *Psychol Sport Exerc.* 2014;15(6):649-658. doi:10.1016/j.psychsport.2014.07.012
 38. Slavin S, Konopasek L, Ripp J, Brigham TP. Supporting resident and health care worker mental health in a pandemic: A multifaceted approach. *J Grad Med Educ.* 2020;12(5):641-643. doi:10.4300/JGME-D-20-01016.1

39. Baylina P, Barros C, Fonte C, Alves S, Rocha Á. Healthcare workers: Occupational health promotion and patient safety. *J Med Syst.* 2018;42(9):159. doi:[10.1007/s10916-018-1013-7](https://doi.org/10.1007/s10916-018-1013-7)
40. Billings J, Abou Seif N, Hegarty S, et al. What Support Do Frontline Workers Want? A qualitative study of health and Social Care Workers' experiences and views of psychosocial support during the COVID-19 pandemic. *PLOS ONE.* 2021; 16(9). doi:[10.1371/journal.pone.0256454](https://doi.org/10.1371/journal.pone.0256454)
41. Morganstein JC, Flynn BW. Enhancing psychological sustainment & promoting resilience in healthcare workers during COVID-19 & beyond: adapting crisis interventions from high-risk occupations. *J Occup Environ Med.* 2021;63(6):482-489. doi:[10.1097/JOM.0000000000002184](https://doi.org/10.1097/JOM.0000000000002184)
42. Greenberg N, Tracy D. What healthcare leaders need to do to protect the psychological well-being of frontline staff in the COVID-19 pandemic. *BMJ Lead.* 2020;4(3):101-102. doi:[10.1136/leader-2020-000273](https://doi.org/10.1136/leader-2020-000273)
43. Heath C, Sommerfield A, von Ungern-Sternberg BS. Resilience strategies to manage psychological distress among healthcare workers during the COVID-19 pandemic: A narrative review. *Anaesthesia.* 2020;75(10):1364-1371. doi:[10.1111/anae.15180](https://doi.org/10.1111/anae.15180)
44. Chang CH, Shao R, Wang M, Baker NM. Workplace Interventions in Response to COVID-19: An Occupational Health Psychology Perspective. *Occup Health Sci.* 2021;5(1-2):1-23. doi:[10.1007/s41542-021-00080-x](https://doi.org/10.1007/s41542-021-00080-x)
45. Sinclair RR, Allen T, Barber L, et al. Occupational health science in the time of COVID-19: Now more than Ever. *Occup Health Sci.* 2020;4(1-2):1-22. doi:[10.1007/s41542-020-00064-3](https://doi.org/10.1007/s41542-020-00064-3)
46. Pekerşen Y, Tugay O. Professional Satisfaction as a Key Factor in Employee Retention: A case of the Service Sector: Pekerşen, Y., Tugay, oprofessional satisfaction as a key factor in employee retention: A case of the service sector. *Journal of Tourism and Services J Tour Serv.* 2020; 2011(1120):11-2727. doi:[10.29036/jots.v11i20.12310.29036/jots.v11i20.123](https://doi.org/10.29036/jots.v11i20.12310.29036/jots.v11i20.123)
47. Sultana A, Sharma R, Hossain MM, Bhattacharya S, Purohit N. *Burnout Among Healthcare Providers during COVID-19 Pandemic: Challenges and Evidence-Based Interventions.* SocArXiv; 2020. doi:[10.31235/osf.io/4hxga](https://doi.org/10.31235/osf.io/4hxga).
48. Carnevale JB, Hatak I. Employee adjustment and well-being in the era of COVID-19: Implications for human resource management. *J Bus Res.* 2020;116:183-187. doi:[10.1016/j.jbusres.2020.05.037](https://doi.org/10.1016/j.jbusres.2020.05.037)
49. Kinman G, Teoh K, Harriss A. Supporting the well-being of healthcare workers during and after COVID-19. *Occup Med.* 2020;70(5):294-296. doi:[10.1093/occmed/kqaa096](https://doi.org/10.1093/occmed/kqaa096)
50. Nicksic N. Impact of COVID-19 on Employee Mental Health: Executive Summary and Employer Guidance. Integrated Benefits Institute; 2021. <https://www.ibiweb.org/resources/impact-of-covid-19-on-employee-mental-health-executive-summary-and-employer-guidance>
51. American Psychological Association. Demand for mental health treatment continues to increase, say psychologists. Apa.org. Published October 19, 2021. <https://www.apa.org/news/press/releases/2021/10/mental-health-treatment-demand>
52. Harvey DSB. Developing a mentally healthy workplace: A review of the literature. 2014:73.
53. Shaukat N, Ali DM, Razzak J. Physical and mental health impacts of COVID-19 on healthcare workers: a scoping review. *Int J Emerg Med.* 2020;13(1):40. doi:[10.1186/s12245-020-00299-5](https://doi.org/10.1186/s12245-020-00299-5)
54. Vizheh M, Qorbani M, Arzaghi SM, Muhidin S, Javanmard Z, Esmaeili M. The mental health of healthcare workers in the COVID-19 pandemic: A systematic review. *J Diabetes Metab Disord.* 2020;19(2):1967-1978. doi:[10.1007/s40200-020-00643-9](https://doi.org/10.1007/s40200-020-00643-9).
55. Bisson JI, Lewis C. Systematic review of psychological first aid. Commissioned by the World Health Organization, 2. 2009.
56. Everly GS, Barnett DJ, Links JM. The Johns Hopkins model of psychological first aid (RAPID-PFA): curriculum development and content validation. *International Journal of Emergency Mental Health.* 2012;14(2):95-103. <https://pubmed.ncbi.nlm.nih.gov/23350225/>
57. Dennerlein JT, Burke L, Sabbath EL, et al. An integrative total worker health framework for keeping workers safe and healthy during the COVID-19 pandemic. *Hum Factors J Hum Factors Ergon Soc.* 2020;62(5):689-696. doi:[10.1177/0018720820932699](https://doi.org/10.1177/0018720820932699)
58. Murray WC, Elliot S, Simmonds K, Madeley D, Tallor M. Human resource challenges in Canada's hospitality and tourism industry: Finding innovative solutions. *Worldw Hosp Tour Themes.* 2017; 9(4):391-401. doi:[10.1108/WHATT-04-2017-0022](https://doi.org/10.1108/WHATT-04-2017-0022)
59. Busch IM, Moretti F, Mazzi M, Wu AW, Rimondini M. What we have learned from two decades of epidemics and pandemics: a systematic review and meta-analysis of the psychological burden of frontline healthcare workers. *Psychother Psychosom.* 2021;90(3):178-190. doi:[10.1159/000513733](https://doi.org/10.1159/000513733)
60. Bradley DM, Elenis T, Hoyer G, Martin D, Waller J. Human capital challenges in the food and beverage service industry of Canada: Finding innovative solutions. *Worldw Hosp Tour Themes.* 2017;9(4):411-423. doi:[10.1108/WHATT-04-2017-0017](https://doi.org/10.1108/WHATT-04-2017-0017)
61. Albott CS, Wozniak JR, McGlinch BP, Wall MH, Gold BS, Vinogradov S. Battle buddies: rapid deployment of a psychological resilience intervention for health care workers during the COVID-19 pandemic. *Anesth Analg.* 2020;131(1):43-54. doi:[10.1213/ANE.0000000000004912](https://doi.org/10.1213/ANE.0000000000004912)
62. Nembhard IM, Edmondson AC. Making it safe: The effects of leader inclusiveness and professional status on psychological safety and improvement efforts in health care teams. *J Organ Behav.* 2006;27(7):941-966. doi:[10.1002/job.413](https://doi.org/10.1002/job.413)
63. Shanker D. Darden Restaurants Announces Paid Sick Leave for Hourly Workers. *Bloomberg.com.* <https://www.bloomberg.com/news/articles/2020-03-09/darden-restaurants-announces-paid-sick-leave-for-hourly-workers>. Published March 9, 2020.
64. Zhou T, Guan R, Sun L. Perceived organizational support and PTSD symptoms of frontline healthcare workers in the outbreak of COVID-19 in Wuhan: The mediating effects of self-efficacy and coping strategies. *Appl Psychol Health Well-Being.* 2021; 13(4):745-760. doi:[10.1111/aphw.12267](https://doi.org/10.1111/aphw.12267).
65. Giorgi G, Lecca LI, Alessio F, et al. COVID-19-Related Mental Health Effects in the Workplace: A Narrative Review. *Int J Environ Res Publ Health.* 2020;17(21):7857. doi:[10.3390/ijerph17217857](https://doi.org/10.3390/ijerph17217857)

66. Northington WM, Gillison ST, Beatty SE, Vivek S. I don't want to be a rule enforcer during the COVID-19 pandemic: Frontline employees' plight. *J Retailing Consum Serv*. 2021;63:102723. doi:10.1016/j.jretconser.2021.102723.
67. Sorensen G, Sparer E, Williams JAR, et al. Measuring best practices for workplace safety, health, and well-being: The workplace integrated safety and health assessment. *J Occup Environ Med*. 2018; 60(5):430-439. doi:10.1097/JOM.0000000000001286.
68. Khajuria A, Tomaszewski W, Liu Z, et al. Workplace factors associated with mental health of healthcare workers during the COVID-19 pandemic: an international cross-sectional study. *BMC Health Serv Res*. 2021;21(1):262. doi:10.1186/s12913-021-06279-6.
69. Vera San Juan N, Aceituno D, Djellouli N, et al. Mental health and well-being of healthcare workers during the COVID-19 pandemic in the UK: contrasting guidelines with experiences in practice. *BJPsych Open*. 2021;7(1):e15. doi:10.1192/bjo.2020.148.
70. Sorensen G, McLellan DL, Sabbath EL, et al. Integrating worksite health protection and health promotion: A conceptual model for intervention and research. *Prev Med*. 2016;91: 188-196. doi:10.1016/j.ypmed.2016.08.005.
71. Palumbo MV, Rambur B, Mcintosh B, Naud S. Registered Nurses' Perceptions of Health and Safety Related to Their Intention to Leave. *AAOHN J*. 2010;58(3):95-103. doi:10.3928/08910162-20100216-01.
72. Gray P, Senabe S, Naicker N, Kgalamono S, Yassi A, Spiegel JM. Workplace-Based Organizational Interventions Promoting Mental Health and Happiness among Healthcare Workers: A Realist Review. *Int J Environ Res Publ Health*. 2019;16(22): 4396. doi:10.3390/ijerph16224396.
73. Loeppke RR, Hohn T, Baase C, et al. Integrating health and safety in the workplace: How closely aligning health and safety strategies can yield measurable benefits. *J Occup Environ Med*. 2015;57(5):585-597. doi:10.1097/JOM.0000000000000467.
74. Patrick Hilton T, Lambert SJ. Understanding employers' use of labor market intermediaries in filling low-level jobs: attracting retainable employees or replenishing high-turnover jobs? *J Poverty*. 2015;19(2): 153-176. doi:10.1080/10875549.2014.991892.

More Vulnerable, More to Gain? A Pilot Study of Leader's Perceptions of Mental Health Programs and Costs in Small Workplaces

Joel B Bennett, PhD, CWP¹, Aldrich Chan, MS¹, Adrian Abellanoza, PhD¹, Rachel Bhagelai, PhD², Jen Gregory³, Julie Dostal, EdS, LMHC⁴, and Jennifer Faringer, MS, ED, CPP-G⁵



Introduction

Small businesses have the most to gain from, yet are least likely to offer, health promotion programs, including those focusing on employee mental health.^{1,2} Collecting information on leaders' perceptions of mental health burden and related programs can help identify factors that can promote increased awareness of mental health needs in small businesses.³⁻⁵

Gathering input across networks is critical to building capacity for evidence-based mental health promotion (MHP), including in small businesses. Models including the Strategic Prevention Framework,⁶ the Community Health and Economic Prosperity initiative,⁷ and Research-to-Practice Methods⁸ emphasize the importance of conducting needs assessments, providing feedback to the workforce community, and ensuring relevance of content to stakeholders, including the provision of information about program return on investment.

The current study is part of a multi-agency project of community stakeholders who, working at the interface of economic development, public health, and MHP, seek to increase utilization of evidence-based MHP. Collaborators adapted a MHP called Team Awareness^{9,10} to help build stakeholder interest in MHP and forecast positive economic impact on the local workforce. Part of the project included providing actionable feedback to stakeholders to address previously identified concerns including how to estimate return on investment of programs.

We conducted a survey of community stakeholders and business leaders to gather information on how to collect financial data to estimate economic impact of MHP.¹¹ The survey was designed to address:

- (1) To what extent do workplace leaders feel that exposures (eg, burn-out, mental health, poor health, fatigue) cause productivity problems in their workforce?
- (2) What are the estimated financial costs associated with mental health related (MHR) exposures?
- (3) What types of MHR programs are in place to help mitigate these losses?
- (4) To what degree can MHR programs reduce these costs?

¹Organizational Wellness & Learning Systems

²Econometrica

³Southern Tier 8 Regional Board (Appalachian Regional Commission)

⁴Leatherstocking Education on Alcoholism/Addictions Foundation (LEAF)

⁵National Council on Alcoholism & Drug Dependence-Rochester Area (NCADD-RA)

Corresponding Author:

Joel Bennett, Organizational Wellness & Learning Systems, Flower Mound, TX, USA.

Email: learn@organizationalwellness.com