Abstract

Poor mental health has a significant negative impact on the US economy, costing \$193.2 billion annually, and increasing the risk of suicide. There are more than ten million construction workers in the United States, and prior research has shown that their mental health is often neglected, making them more susceptible to substance misuse, drug overdose, and suicide than workers in other industries.

We undertook the present study to review the literature about mental health of construction workers, conduct a survey to assess and identify mental health issues/concerns among construction workers, and develop recommended organizational and individual worker-level responses for mental health issues. Our literature review indicated that 10.7% of the world's population is affected by at least one type of mental health disorder, which increases the risk of suicide and has costly consequences for workers, families, and employers. Furthermore, the review helped to comprehensively define mental health, inform the most appropriate measures for assessing mental health in a work context, and identify how organizations and societies have studied and addressed mental health globally.

After the literature review, the research team conducted a survey of a heterogeneous sample of construction workers in the U.S. to assess their mental health and well-being, with 143 workers completing the survey. Workers in the study reported indicators of poor mental health at a higher rate than previous studies. Workerslated stress was strongly associated with various indicators of poor mental health, including anxiety, depression, and number of days of poor mental health.

These findings highlight the need for targeted interventions to address specific work-related stressors and alleviate the strains associated with poor mental health. One potential intervention identified is leadership training, which operates at an organizational level and so can have a broad impact. Leadership can shape the organizational culture, establish supportive policies and procedures, and improve communication about mental health. Leadership training

Introduction

<u>Project Significance</u>
The construction industry in the United States significantly contribut

oversampling lack accuracy when it comes to race/ethnicity-based or gender-based comparisons (Curtis et al., 2018; Jacobsen et al., 2013; Turner & Lingard, 2020). Therefore, It is imperative to implement

get construction companies to allow access to their workers proved difficult and to get them to encourage participation. This challenge of collecting data on site was compounded by the COVID-19 pandemic. The research team considers it valuable to include the lessons from this process in this report, as they provide

By combing a literature review and a comprehensive survey the research team aimed to gather a holistic understanding of the mental health landscape among construction workers, exploring workplace factors, health status, socioeconomic influences, and participant demographics.

Literature

The research team's extensive literature review explored the following issues in detail:

- The mental health indicators/issues and the associated statistics in the construction industry.
- The different qualitative and quantitative data on the different mental health issues such as suicide rates, substance misuse, drug overdose, alcohol misuse, accidents, and health conditions among many other mental health issues, and their statistics.
- The initiatives and efforts that have been taken locally, nationally, and globally to address mental health issues in general, and specifically in the construction industry.
- The literature and data on gender and ethnicity-specific mental health issues as it is essential to understand specific population vulnerabilities.

Survey Tool

The research team deve.h tc $0.27d[TT-td\ (t)-2.60]$ TJEMf $1.554\ 0\ Td(\)T4.,...$, $r27d[TT-td\ (t)-2.60]$ TB $0\ Tc,0.27dm(dd)$

Over the last 2 weeks, how often have you been bothered by little interest or pleasure in doing things?

Not at all	47.1%
Several days	42.9%
More than half the days	7.6%

compared to those who did not participate.

The preliminary findings also indicated that work-related stress is strongly associated with multiple indicators of poor mental health, including symptoms of anxiety and depression and number of days experiencing poor mental health. These results call for a more fine-grained analysis to investigate specific work-related stressors that will help guide more specific recommendations for work-related interventions to help ameliorate strains linked to poor mental health.

Improving construction worker mental health calls for intervention. In general, occupational health interventions operate at primary, secondary, or tertiary levels based on the extent to which individuals have experienced or may be at risk for or likely to have poor mental health. Primary interventions focus on preventing stressors and negative consequences (e.g., poor mental health) from the outset and are most effective. Secondary interventions are implemented among those suspected to be at risk but prior to experiencing negative consequences (e.g., poor mental health). Tertiary interventions are for those who already have experiences negative consequences, such as workers who report poor mental health.

Our first recommendation is for leadership training to support construction worker mental health. One benefit of leadership training is that it is an may organizational-level intervention, which can have greater

Presentations

Mehany, M. and Kumar, S. Status of Mental Health of Construction Workers in the US Construction Industry. Poster Presentation, Associated Schools of Construction (ASC) 58th Annual ASC International Conference, April 20-23, 2022, Atlanta, GA, USA.

Mehany, M., Kumar, S., & Fisher, G. G. Mental health and well-being among construction workers. Poster to be presented at the APA/NIOSH/SOHP Work, Stress, and Health Conference, November 8-11, 2023, Miami, FL.

Publications In Progress

Mehany, M., Kumar, S., & Fisher, G.G. – Literature review – To be submitted 2023

Mehany, M., Fisher, G. G. & Kumar, S. - Work characteristics, mental health, and well-being in the construction industry. Manuscript in preparation for submission 2023.

References

*References beyond those cited were included to reflect the total scholarly exploration that was undertaken during the entirety of the study from proposal to final report.

360training. (2019). NEW SURVEY REVEALS RISE IN WORKPLACE SAFETY CONCERNS https://www.360training.com/blog/new-survey-reveals-rise-workplace-safety-concerns

AGC. (2021). Construction Datahttps://www.agc.org/learn/construction-data

Akdemir, A., Trkapar, M., Gel, S., Demirergi, N., Dag, I., & Day, M. (2001). Reliability and validity of the Turkish version of the Hamilton Depression Rating Scale. Comprehensive psychiatry, 42(2), 161-165.

American Lung Association. (2020).

Balfour Beatty. (2019). SUICIDE PREVALENCE IN THE CONSTRUCTION INDUSTRY. https://balfourbeattyus.com/balfourbeattyus.com/media/content-media/pdfs/suicide-prevention-infographic-final.pdf

Baton Rouge Behavioral Hospital. (2008). How to Hold a Mental Health Intervention That Works https://batonrougebehavioral.com/how-to-hold-a-mental-health/hospital/fin/15 (e) TJ0 tdiaiae(1)3.2 (o) 666 (i/s)2.6 ((1)3.2 (...9 (c14.2 (o

Chari, R., Chang, C.-C., Sauter, S. L., Sayers, E. L. P., Cerully, J. L., Schulte, P., Schill, A. L., & Uscher-Pines, L. (2018). Expanding the paradigm of occupational safety and health a new framework for worker well-being. Journal of occupational and environmental medicine, 60(7), 589.

Chesterfield, P. (2019). IT'S PAST TIME TO BUILD BETTER MENTAL HEALTH IN THE CONSTRUCTION INDUSTRY

Fleming, J. (2021). The Biggest Danger in Construction Work Is Poor Mental Health https://www.ehstoday.com/construction/article/21171410/the-biggest-danger-in-construction-work-is-poor-mental-health

Fordjour, G. A., & Chan, A. P. (2019). Exploring occupational psychological health indicators among construction employees: A study in Ghana.

Frieden, T. R. (2010). A framework for public health action: the health impact pyramid. American Journal of Public Health, 10(4), 590–595.

Friedman, W. J. (2020). Types of Stress and Their Symptoms://www.mentalhelp.net/blogs/types-of-stress-and-their-symptoms/

Goetzel, R. Z., Henke, R. M., Tabrizi, M., Pelletier, K. R., Loeppke, R., Ballard, D. W., Grossmeier, J., Anderson, D. R., Yach, D., Kelly, R. K., McCalister, T., Serxner, S., Selecky, C., Shallenberger, L. G., Fries, J. F., Baase, C., Isaac, F., Crighton, K. A., Wald, P., ... Metz, R. D. (2014). Do workplace health promotion (wellness) programs work? Journal of Occupational and Environmental Medici**56**(9), 927–934.

Gullestrup, J., Lequertier, B., & Martin, G. (2011). MATES in construction: impact of a multimodal, community-based program for suicide prevention in the construction industry. International journal of environmental research and public health 18, 4180-4196.

Gurin, J., & Goleman, D. (1993). Mind Body Medicine: How to Use Your Mind for Better Health. Consumer Reports Books.

H.R.6 - SUPPORT for Patients and Communities Act,, 115th Congress (2017-2018), 115th Congress (2017-2018) Cong. Rec. (2017-2018). https://www.congress.gov/bill/115th-congress/house-bill/6

H.R.34 - 21st Century Cures Act, 114th Congress Cong. Rec. (2015-2016). https://www.congress.gov/bill/114th-congress/house-bill/34

H.R.3590 - Patient Protection and Affordable Care Act, (2009-2010). https://www.congress.gov/bill/111th-congress/house-bill/3590

H.R.6983 - Paul Wellstone and Pete Domenici Mental Health Parity and Addiction Equity Act of 2008, (2007-2008). https://www.congress.gov/bill/110th-

Jebelli, H., Choi, B., Kim, H., & Lee, S. (2018). Feasibility study of a wristband-type wearable sensor to understand construction workers' physical and mental status. Construction Research Congress,

Joukamaa, M. (1992). Crown-Crisp experiential index, a useful tool for measuring neurotic psychopathology. Nordic Journal of Psychiatry, **46**), 49-53.

Kelloway, E. K., & Barling, J. (2010). Leadership development as an intervention in occupational health psychology. Work & Stress24(3), 260-279.

Kovacevic, R. (2021). Mental health: lessons learned in 2020 for 2021 and forward. https://blogs.worldbank.org/health/mental-health-lessons-learned-2020-2021-and-forward

Lacerenza, C. N., Reyes, D. L., Marlow, S. L., & Joseph, D. L. (2017). Leadership Training Design, Delivery, and Implementation: A Meta-Analysis. Journal of Applied Psycholog \(\varphi 02(12), 1686-1718. \)

Li, H., Luo, X., Ke, X., Dai, Q., Zheng, W., Zhang, C., Cassidy, R. M., Soares, J. C., Zhang, X., & Ning, Y. (2017). Major depressive disorder and suicide risk among adult outpatients at several general hospitals in a Chinese Han population. PloS one, 1(20), e0186143.

Lingard, H., & Turner, M. (2017, 2017/05/04). Promoting construction workers' health: a multi-level system perspective. Construction Management and Economics, 35(5), 239-253. https://doi.org/10.1080/01446193.2016.1274828

Long, E. (2021). How mental health initiatives can help construction workers https://www.trainingjournal.com/articles/features/how-mental-health-initiatives-can-help-construction-workers

Lorek, S. (2021). Mental Health and Suicide Prevention In Construction [STATS] https://constructible.trimble.com/construction-industry/mental-health-in-construction-stats

Lubin, G., & Giang, V. (2011). The 17 Jobs Where You're Most Likely To Become An Alcoholic https://www.businessinsider.com/most-alcoholic-jobs-2011-10

0 D U W L Q \$. D U D Q L N D (0 X U U D \ 0 % L U R Q & 6 D Q G H U V R Q environment, employee mental health and organizational interventions: Improving research and practice by taking a multilevel approach. Stress and health, 32, 201-215.

MATES. (2008). ABOUT MATEShttps://mates.org.au/about-us

Mayo Clinic. (2017). Inte10he(g.7-1.6 (ET BTtaf 0 TI (10(c)-1il (10(c)-n)-6he(g.7-1.6.9 8.9 7s(w 13.598 0 Td (.))

 $Mercy \ Health.\ (2021).\ Mental\ Health\ Assessme\underline{https://www.mercy.net/service/mental-health-assessment/}$

Nwaogu, J. M., & Chan, A. P. (2020). Evaluation of multi-level intervention strategies for a psychologically healthy construction workplace in Nigeria. Journal of Engineering, Design and Technology

Okoye, P. U., Okolie, K. C., & Ngwu, C. (2017). Multilevel safety intervention implementation strategies for Nigeria construction industry. Journal of construction engineering, 201714.

Ompad, D. C., Gershon, R. R., Sandh, S., Acosta, P., & Palamar, J. J. (2019). Construction trade and extraction workers: A population at high risk for drug use in the United States, 2005–2014. Drug and alcohol dependence, 205, 107640.

Passey, D. G., Brown, M. C., Hammerback, K., Harris, J. R., & Hannon, P. A. (2018). Managers' Support for Employee Wellness Programs: An Integrative Review. American Journal of Health Promotion, (32), 1789–1799.

Peterson, C., Sussell, A., Li, J., Schumacher, P. K., Yeoman, K., & Stone, D. M. (2020). Suicide rates by industry and occupation—National Violent Death Reporting System, 32 states, 2016. Morbidity and Mortality Weekly Report, 69(3), 57.

https://www.cdc.gov/mmwr/volumes/69/wr/mm6903a1.htm?s_cid=mm6903a1_w

Price, M., Legrand, A. C., Brier, Z. M., & Høert- Dufresne, L. (2019). The symptoms at the center: examining the comorbidity of posttraumatic stress disorder, generalized anxiety disorder, and depression with network analysis. Journal of psychiatric research, 109, 52-58.

Radloff, L. S. (1977). The CES-D scale: A self-report depression scale for research in the general population. Applied psychological measurement, 1(3), 385-401.

Rainey, J. (2018).

Turner, M., & Lingard, H. (2020). Examining the interaction between bodily pain and mental health of construction workers. Construction Management and Economics 138 1009-1023.

United Nations. (2017). Mental Health and Development https://www.un.org/development/desa/disabilities/issues/mental-health-and-development.html

United Suicide Survivors International. (2020). Global Construction Suicide Prevention: Website Offers Resources in 8 Languages for this High Risk Industrys://www.sallyspencerthomas.com/dr-sally-speaks-blog/constructionworkingminds

Valsangkar, S., & Sai, K. S. (2012). Impact of musculoskeletal disorders and social determinants on health in construction workers. Int J Biol Med Res,(3), 1727-1730.

Westerveld, M. F., Armstrong, R. M., Barton, G. M., & Peach, J. (2020). Intervention Initiatives Across Three Levels of Instruction. In Reading Success in the Primary Years: An Evidence Interdisciplinary Approach to Guide Assessment and Interve(pipors9-110). Springer Singapore. https://doi.org/10.1007/978-981-15-3492-8 5

White, K. P., Nielson, W. R., Harth, M., Ostbye, T., & Speechley, M. (2002). Chronic widespread musculoskeletal pain with or without fibromyalgia: psychological distress in a representative community adult sample. The Journal of rheumatology, **29**, 588-594.

WHO. (2021). Mental health https://www.who.int/health-topics/mental-health#tab=tab_1

WHO. (2022). Mental health in the workplacettps://www.who.int/teams/mental-health-and-substance-use/promotion-prevention/mental-health-in-the