

# MENTAL HEALTH AND SUICIDE PREVENTION PROGRAMS IN THE U.S. CONSTRUCTION INDUSTRY

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Each year 20-25 percent of the general population meets the criteria for a mental health diagnosis in the United States. This research focuses on the increase in mental health issues and suicide in the U.S. construction industry. A 2016 report, released in 2020 by the U.S. Centre for Disease Control (CDC), placed the construction industry as second among all other industries in suicide rate. This research seeks to quantify awareness of mental health and suicide as issues affecting construction employees within the U.S. construction industry, identify awareness of the particular risk factors facing U.S. construction workers which increase mental health and suicide in the industry, qualitatively evaluate the effectiveness and adequacy of existing mental health and suicide awareness/prevention programs, and qualitatively assess if the benefits of instituting comprehensive mental health and suicide awareness/prevention programs outweigh the costs of such programs. Data was collected utilizing an anonymous survey distributed to construction managers, safety professionals, professional organizations, labour/trade organizations, and field employees within the construction industry. A total of 103 respondents completed the survey. The research identifies differences that exist among the different professional roles in the U.S. industry, with respect to awareness, effectiveness, adequacy, and risk factors. An analysis of the data also identifies differences between types of construction organizations (general contractor, subcontractor, etc.) and size of the organization. The research is important to the future of the industry and will help identify where additional focus is needed in mental health treatment and suicide prevention in the U.S.

Keywords: safety; health; resilience; mental health; stress

## INTRODUCTION

The workplace is taxing, both physically and mentally, as a result of intensified demands on construction projects (Abdelhamid and Everett, 2001; Love *et al.*, 2009). The construction industry is characterized by high rates of work-related accidents, intense deliverable deadlines, as well as a current crisis with a skilled trades shortage (Arndt *et al.*, 2005; Campbell, 2006; Olsen *et al.*, 2012; Delvinne *et al.*, 2020). Mental health (MH) remains a global burden and not restricted to a particular race, culture, society or status (WHO, 2013). There have been rigorous studies highlighting this crisis the world is facing, particularly focused in the United Kingdom, Australia, New Zealand. The United States has begun work towards contributing to the

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literature focusing specifically on the MH crisis of those in the U.S. construction industry; however, gaps remain and must be addressed for the future of the industry.

The aim of this research was two-fold. First, the study investigated the awareness of MH and suicide as issues affecting construction employees specifically in the United States. This research also explored the prevalence and effectiveness of suicide prevention programs in the construction industry. The study employed an anonymous online survey instrument to collect response data from employers, labour unions, and other industry partners. Research on the prevalence and effectiveness of MH and suicide prevention programs in the construction industry is significant in that it provides empirical data on how well the industry is reacting to the increase in construction suicides. This research endeavours to add data to this critical subject so construction industry leaders in the United States may better train their staff on the importance of recognizing suicidal behaviours and MH issues. Early intervention of workers experiencing mental distress will reduce the risk of suicide.

## LITERATURE REVIEW

Mental health issues and suicide have a tremendous impact on the U.S. workplace. Depression is estimated to cause 200 million lost workdays each year at a cost to employers of \$17 to \$44 billion. In a three-month period, individuals with depression miss an average of 4.8 days and suffer 11.5 days of reduced productivity. Unfortunately, nearly 80% of employees experiencing psychological distress are not receiving treatment, and less than 8% of adults with both a mental health and substance abuse disorder receive treatment (Lipari, 2018). Suicide also has tremendous economic costs for individuals, families, and employers. The U.S. Centres for Disease Control and Prevention (CDC) estimates that suicide and suicide attempts cost the nation approximately \$70 million per year in medical and lost productivity costs alone (Peterson *et al.*, 2020).

“Stigma associated with mental ill health still remains the number one challenge in the construction industry” (Janusonyte *et al.*, 2019). A study by Eyllon *et al.* (2020) demonstrated workers experiencing mental health problems experience internalized stigma and shame regarding their mental health, which may exacerbate their distress and symptomology. This internalized stigma was found to be a deterring factor in pursuing mental health services, such as attending a mental health clinic for fear of outing their mental health status by entering the facility. A survey of construction workers in the United Kingdom found that 68.2% of workers feel comfortable talking about physical health issues or concerns, but only 52.4% do not feel comfortable discussing mental health concerns (Campbell and Gunning, 2020). The stigma in the U.S. construction industry, particularly towards MH, remains a key factor towards workers seeking treatment.

The suicide rate for all occupations in the United States was reported as 27.4 per 100,000 male workers and 7.7 per 100,000 female workers (Peterson *et al.*, 2020). Categorizing occupational employment data is imperative to find root issues within the workplace. A Morbidity and Mortality Weekly Report (MMWR), published in January 2020, indicated that the suicide rate among individuals in the ‘Construction and Extraction occupation’ was 49.4 per 100,000 male workers and 25.5 per 100,000 female workers (Peterson *et al.*, 2020). The data in the report was based on data collected from 32 out of 50 states in 2016. A staggering reality: individuals employed in these occupations have a considerably higher risk of suicide. Furthermore, for

individuals employed in Architecture, Engineering, and Construction Management occupations, which are closely related to the Construction and Extraction occupations, the rate is even higher. A study by Greenwood (2017) found construction workers are six times more likely to die from suicide than from a fall from height in the United States.

The U.S. demographic of the construction industry is currently largely white, middle-aged males without a college education. This demographic population is a 'high risk of suicide' group according to current research. Numerous articles were reviewed regarding the stigma associated with mental health and mental health treatment among various demographic populations (Kotera *et al.*, 2019; Nwaogu *et al.*, 2019). Consider also that the construction industry consists of significant U.S. military veterans (Briggs *et al.*, 2020), whose suicide rate is 1.5 times greater than non-veterans (Wolfe-Clark and Bryan, 2017). Compounding risk factors attributed to demographics are multiple other contributing risk factors resulting in a high number of suicides in the construction industry. These include a stoic attitude towards mental health, time spent away from home, access to lethal means, chronic physical pain resulting in drug use/self-medicating, and higher than average alcohol dependency (Stone *et al.*, 2018). These factors all contribute to a suicide rate in the construction industry that is five times greater than the workplace fatality rate and four times greater than the suicide rate of the general population.

The high rate of suicide in the construction industry is not limited to the United States. Countries such as Australia, New Zealand, and the United Kingdom also report significant increases in construction worker suicides and, in many cases, lead the world in suicide prevention programs. An Australian construction worker is six times more likely to die from suicide than an accident at work. Young Australian male workers are well over two times more likely to take their own lives than other young Australian men (Kinchin and Doran, 2017). There has been an increase in mental health and suicide prevention programs specific to the construction industry in the last five years or so in the United States. On World Suicide Prevention Day in 2015, the Carson J Spencer Foundation in partnership with the National Action Alliance for Suicide Prevention and RK (a Denver, Colorado-based construction company) published the first Construction Industry Blueprint: Suicide Prevention in the Workplace. The Construction Financial Management Association (CFMA) in Phoenix, Arizona hosted the first construction industry suicide prevention regional summit in the United States in 2016. While endeavours to improve mental health in the construction industry is noted, the United States is in its infancy in this work and the lives of many are at stake.

## **METHODOLOGY**

This paper first analysed the literature to investigate the existing state of worker mental health and suicide prevention programs within the United States construction industry. A thorough review of the high-risk suicide factors for construction workers and current mental health and suicide prevention programs instituted in recent years was utilized for survey development.

After completion of the literature review, the data collection phase commenced. A survey was employed to collect data from construction industry professionals relative to the prevalence and effectiveness of mental health and suicide prevention programs within the construction industry in the United States. The survey questionnaire was divided into the following blocks for analysis: (1) General Information and

Demographics, (2) Mental Health and Suicide Awareness, (3) Effectiveness of Mental Health and Suicide Awareness/Prevention Programs, and (4) Impact of Mental Health and Suicide in the Industry. The survey sought to determine awareness of mental health and suicide in the construction industry, if organizations have instituted specific mental health and suicide awareness/prevention programs, and how they promote such programs to field employees. The survey was distributed to approximately 1,500 contractors, professional organizations, labour unions, and trade organizations throughout the United States via Qualtrics survey software.

## RESULTS AND ANALYSIS

### Response Rate and Demographics

A total of 103 respondents completed the survey. The survey respondents were 72% male and 28% female. Additionally, 49% of survey respondents worked for a large business (greater than \$50M in annual revenue) while 51% worked for a small business (less than \$50M in annual revenue). Table 1 contains further demographic results from the respondents.

*Table: Survey respondents' demographic distribution by organization and position in industry*

Organization Affiliation	%	Role / Position in Industry	%
Labor Union/ Trade Organization	14%	Management & Administrative	78%
Professional Organization	12%	Safety Professional	13%
Subcontractor	19%	Field employee	6%
General Contractor/ Const. Manger	53%	Other	3%
Other	2%		

### Awareness of the Crisis of Mental Health and Suicide

Questions were formulated on a Likert scale for the survey questions regarding awareness of mental health and suicide as problems in the construction industry. The response options ranged from 1 - Strongly Disagree to 7-Strongly Agree. For MH awareness, the male respondents averaged at 5.8, whereas female respondents averaged at 6.1. For suicide awareness, male respondents averaged at 5.1, while female respondents were averaged at 5.6. When comparing the data of awareness based on gender, the data indicated female respondents show stronger agreement that both mental health (0.3 delta) and suicide (0.5 delta) are problems in the construction industry than males.

When studying the level of agreement that mental health and suicide are critical problems facing the construction industry based on the position in industry, it was not surprising that Safety Professionals demonstrated the strongest awareness level (6.2 / 5.5). Fig 1 illustrates the results of the variation in agreement of these problems based on the position in the organization the respondent identified. The lowest awareness of suicide as a problem was among field employees.

Survey respondents were asked to rank five industries in order from highest suicide rate to lowest suicide rate. The data indicates that the survey respondents accurately identified construction as having one of second highest suicide rates when compared to other industries.

The final question regarding mental health and suicide awareness asked the respondents to rank the risk factors inherent to the construction industry on a scale of

0 (no impact) to 10 (high impact) with respect to their impact on construction worker suicide (Fig 2).

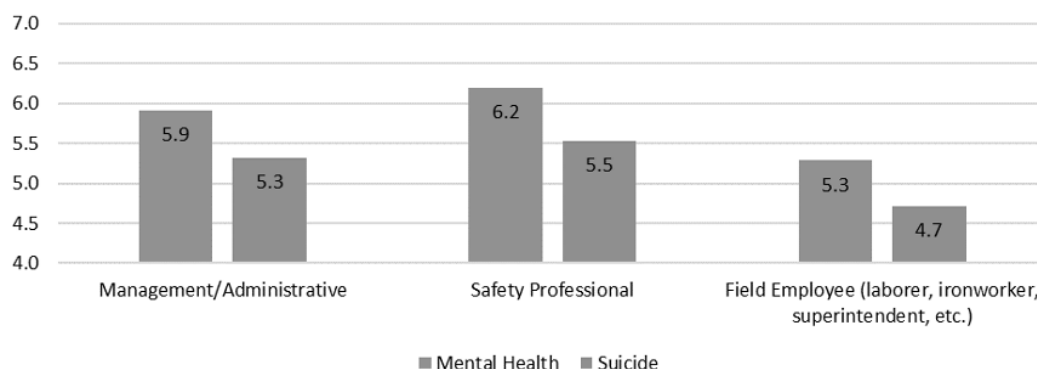


Fig 1: Level of agreement of per respondent's role in the organization

### Suicide Risk Factor Ranking

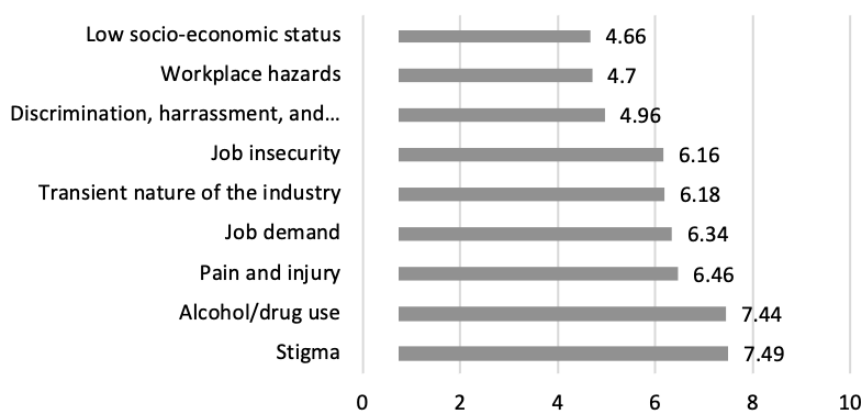


Fig 2: Suicide risk factor ranking per respondents

The top four suicide risk factors as identified by the survey respondents are Stigma (7.49), Alcohol/Drug Abuse (7.44), Pain and Injury (6.46), and Job Demand (6.34). Previous research identifies these factors as the leading risk factors for suicide indicating that the survey respondents are aware of the leading risk factors in the construction industry (Bachman, 2018).

### Mental Health and Suicide Awareness/Prevention Programs

Survey respondents were asked if their organization offers mental health treatment, including alcohol/drug abuse programs, for field employees. Possible answer choices were: 1) Yes, as part of their health care program, 2) Yes, as part of a separate Employee Assistance Program (EAP), 3) No, our field employees are offered these programs through their labour/trade union, and 4) No, we do not offer these programs to our field employees. The responses were bucketed into a Yes and No bucket to evaluate the data.

As illustrated in Fig 3, General Contractors, Professional Organizations, and Labour/Trade Organizations offer these programs often. Interestingly, the organizations classified as Subcontractors or Specialty Contractors only offer these programs in less than half of the organizations.

In this study, small businesses were classified in alignment with the United States Small and Midsize Business (SMB) definition as an organization with an annual revenue less than \$50M, and large businesses were classified as annual revenue more than \$50M. Data regarding the mental health and suicide awareness/prevention programs offered by organization when analysed by size in revenue (Fig 4) revealed that larger organizations offer more mental health and suicide awareness/prevention programs when compared to smaller organizations.

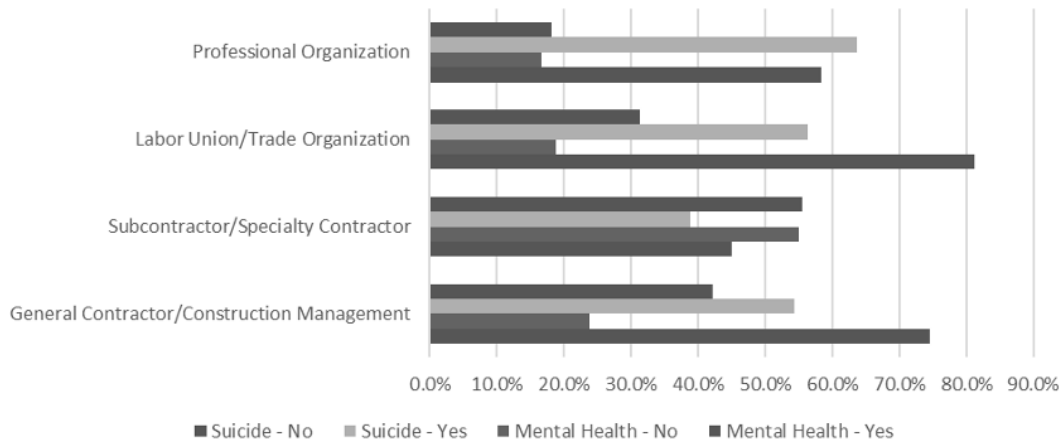


Fig 3: Offered programs by organization type

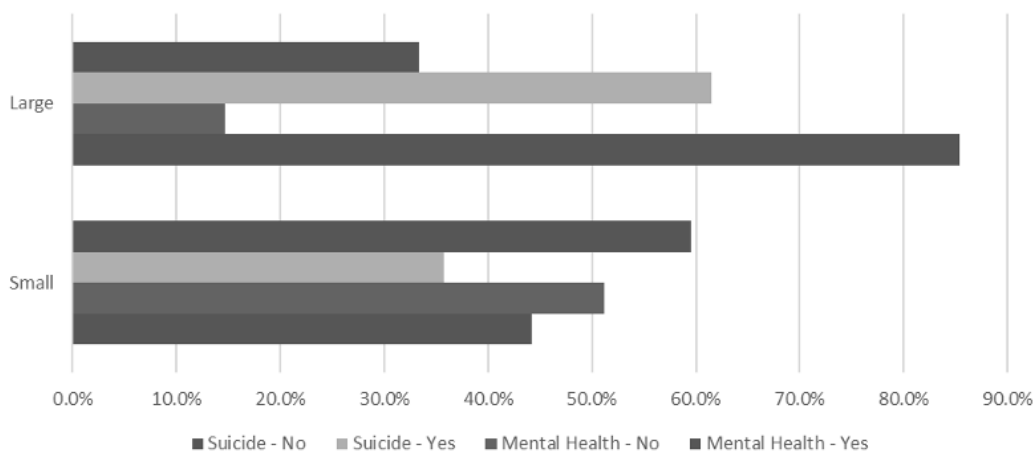


Fig 4: Offered programs by organization revenue size

Survey respondents were asked if they considered the mental health and suicide awareness/prevention programs offered by their organization effective. Respondents rated the effectiveness of their organization’s programs on a Likert scale of 0 - Not Effective to 4 - Extremely Effective. The rate of effectiveness was averaged at 2.3 amongst all respondents. Subcontractors reported the lowest effectiveness rate at 1.8 out of 4. Field employees rated the effectiveness of their organization’s suicide awareness/prevention programs lower than any other role (see Table 1 for role types in this study).

How organizations promote the use of their mental health and suicide awareness/prevention programs (Table 2) was also important in understanding effectiveness. Survey respondents were asked to select the methods their organization uses to promote the use of these programs.

Toolbox talks and jobsite posters/materials were by far the most popular method used to promote mental health and suicide awareness/prevention programs to field employees. Over 50% of organizations utilize these methods. Interestingly, less than 1 in 5 organizations use mandatory training for field employees as a method to increase awareness.

Table 2. Promotional methods for mental health awareness and suicide prevention

Mental Health	%	Suicide	%
Jobsite materials	27%	Jobsite materials	28%
Toolbox talks (safety meetings)	30%	Toolbox talks (safety meetings)	31%
Email/ Text	20%	Email/ Text	21%
Mandatory Training	13%	Mandatory Training	17%
Other	10%	Other	3%

## CONCLUSIONS

Measuring general awareness with respect to mental health and suicide prevention in the construction industry was captured through this study. Female respondents showed a higher awareness to the issue compared to males, which aligned with the findings of Kotera *et al.*, (2019) but demonstrates issues due to the high male population in the U.S. construction industry currently. Both male and female respondents correctly indicated that the construction industry ranked second of all industries with respect to suicide rate. However, correctly stating the rank of the industry compared to other industries may not equate to knowing the actual number of suicides within the industry. This was not addressed in this research, and further research towards understanding if people within the industry know the actual numbers of suicides could be beneficial. The survey respondents also demonstrated awareness of the risk factors affecting the mental health and suicide of construction workers (Stone *et al.*, 2018) which indicates one promising indicator as a result of this study. Those top four risk factors identified were Stigma, Alcohol/Drug Abuse, Pain and Injury, and Job Demand. This illustrates study participants are aware of the top risk factors facing the industry.

Field employees showed the lowest awareness of mental health issues and suicide within the construction industry. Overwhelmingly, jobsite posters/materials and toolbox talks are the preferred method to raise awareness of mental health and suicide to construction field employees. Increasing mandatory training for field employees may raise awareness and serve as a positive intervention tool to combat the prevalence of suicide and mental illness in the U.S. construction industry. Currently, only 12% of organizations provide mental health mandatory training and 17% provide suicide awareness/prevention mandatory training.

The effectiveness and adequacy of mental health and suicide awareness/prevention programs was rated higher at U.S. construction organizations with higher revenue. This suggests that more efforts need to be placed at construction organizations with lower revenue. Furthermore, subcontractors and specialty contractors rated both effectiveness and adequacy of their programs lower than all other organization types. Additional efforts to establish programs at subcontractor and specialty contractor organizations would likely increase effectiveness and adequacy. Safety professionals rated mental health and suicide awareness/prevention program adequacies lower than all other roles/positions within organizations. As safety professionals are typically the individuals responsible for instituting these programs in their organization, it is

concerning that they feel the programs are not fully adequate to deal with the issues. Additional resources provided to safety professionals would likely improve adequacy of these programs.

Higher revenue organizations agree more than lower revenue firms regarding the benefits of such efforts outweighing the expense costs. This may be related to the resources available to higher revenue organizations to institute mental health and suicide prevention programs to educate and raise greater awareness. Not surprisingly, field employees and labor/trade organizations scored higher than other roles and organizations when asked about the benefits outweighing the costs. Field employees and the labor/trade organizations that represent those positions are most at risk with regards to mental health issues and suicide, and it is understandable that they would see the benefits of instituting these programs, regardless of the cost. Additional research is needed to quantitatively determine the benefits of instituting programs versus the cost of programs. No previous studies of this nature, specific to the U.S. construction industry, were found during the literature review. As more data on industry-specific suicides becomes available from the CDC, an assessment on the cost-benefit of mental health and suicide awareness/prevention programs should be conducted.

The research was limited by the low volume of survey responses. While over 1500 survey requests were distributed, only 103 (6.8%) responses were received. The research indicates that more efforts are needed to raise awareness of mental health and suicide in the construction industry, especially to subcontractor/specialty contractor organizations and lower revenue construction companies. Existing efforts to raise awareness may not be as effective at increasing awareness as believed. Industry organizations should consider jobsite engagement programs that are currently in use in other countries to promote mental health and suicide awareness/prevention. Further research should be considered when updated data on industry suicides is released from the CDC. The research should compare future data to the 2016 industry data and again look at ongoing awareness and effectiveness of existing programs.

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