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An Empirical Evaluation of Suicide in the Construction Industry

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Abstract

Suicide in the construction industry is a critical issue that has not received sufficient attention from scholars. While mental health problems have prompted preventive and remedial actions in various industries, the response to this existing issue in construction remains disproportionate. Various sources report the suicide rate in construction to be up to three times greater than in other industries. In addition to such comparative rates, the magnitude and scope of construction projects, which involve a wide range of construction professionals and workers, highlight the importance of addressing mental health and suicide as subjects of concern. To explore this issue and understand construction professionals' perceptions about suicide, a quantitative research study was conducted using a survey to obtain data. The first phase of the study took place in the spring of 2024, with 73 participants from different companies responding to a series of questions delivered through an online platform. Data was obtained, modeled, and analyzed using statistical software. The descriptive analysis indicated that the prevalence and effects of the suicide problem are underestimated. Additionally, the results revealed gaps in diagnosis and preventive plans within organizational routines in construction. The findings of this study urge construction and psychology scholars to develop synergetic plans and programs to mitigate the suicide problem.

Keywords

Suicide, Mental Health, Psychology, Construction.

1. Introduction

The construction industry is one of the most complex and multi-sectored industries. Construction workers make up a large portion of the labor force, and the industry accounts for trillions of dollars' worth of work every year. While this industry is booming, it also has one of the highest suicide rates for its workers among any industry or occupation. The dangerously high rate of suicide has caught the attention of researchers and owners alike due to its pervasive nature. While there are many different causes and consequences of suicide in the construction industry, a few have emerged as more prominent than others. According to prior studies, relationship breakdown, child custody issues, and long work hours seem to contribute to the suicide rate in construction more than other factors. The level of skill required for occupations within the industry is also worth examining. Occupations such as laborers and masons have a much higher suicide rate than project managers. While these deaths are tragic and cause grief and stress, they also result in millions of dollars in economic losses. When a worker in the construction industry takes their own life, it means they have forfeited potentially many years of work. Another worker will have to be trained to take their place. This costs time and money for everyone involved. Suicide prevention programs in construction are trying to address this problem by implementing both formal and informal initiatives that aim to help workers by reducing the stigma around mental health and seeking help. After examining all the different aspects of suicide in the construction industry, it is clear that this problem requires more time and resources to address effectively. This paper reports on the first phase of a study investigating construction professionals' perceptions of different aspects of suicide. The findings of this paper provide preliminary data for further and more comprehensive studies to tackle the issue from different perspectives and at various levels. This paper contributes to the body of knowledge by addressing different aspects of this complex problem and shedding light on some potential contributing factors.

2. Background

The construction industry has one of the highest suicide rates among all industries. As of 2021, working-age males in the United States who are in the construction industry had a suicide rate of around 56 people out of every 100,000 workers (Peterson, et al., 2020). The construction labor sectors in Australia and the United Kingdom displayed suicide rates 2 and 3.7 times higher than their respective national averages between 2001 and 2014. This attracted the attention of both researchers and employers in the construction industry (Chan et al., 2020). Such a high suicide rate indicated an urgent need to tackle the pervasiveness of suicide in the industry and discover the drivers of construction worker-related suicide. Despite the alarming statistics, there are very few studies that try to address this problem (Tijani et al., 2021). Suicide rates in construction are caused by a variety of factors that affect every worker differently. Relationship breakdown and child custody issues are prominent factors in many construction worker suicides (Milner, 2017). Also, separated or divorced men with young children seemed to have issues negotiating time to visit their children. Long work hours have also emerged as a frequent driver in multiple construction worker suicides. Heller et al. (2007) addresses the relevance of long work hours through qualitative methods, showing that long work hours take away from time with family and time for recreational activities, subsequently decreasing mental health and increasing suicide risk (Tyler et al., 2022). Occupational skill level between workers has been identified as a driver as well. Tyler (2022) stated that unskilled workers may be at a higher suicide risk due to being primarily made up of young males who have a lower socioeconomic status. Although the construction industry has a high suicide rate, some occupations within the industry have warranted closer examination.

Construction suicide rates reached an all-time high in the United Kingdom in 2021. The rate was 33.82 people per 100,000. All other occupations were at 9.14 per 100,000. (Hare et al., 2023) While taking this into account, not all sectors in the construction industry require the same amount of time, effort, or skill. There are hundreds of thousands of laborers who work up to 80 hours every week, and there are others who go home and spend time with their families after a 40-hour week. As previously stated, these long hours can lead not only to higher suicide rates overall but also to differences in suicide rates between various sectors. Jobs such as steel and iron workers have a staggering rate of 79 suicides per 100,000 workers. Comparatively, roofers, masons, and rebar workers have a rate of around 65 per 100,000 workers. (Peterson et al., 2020) Both job types require strenuous manual labor and excessive overtime hours. When compared to the suicide rate of construction managers, it is observed that there are around 45.7 suicides per 100,000 workers. (Peterson et al., 2020) This issue can be broken down even further into the skill level within each occupation and the suicide rates they have. Milner (2014) conducted a study that examined variation in suicide deaths by occupational skill level and the changes in the rate of suicide over time. The study discovered that those employed as laborers and machine operators had a rate of 18 suicides per 100,000 workers. Those employed in skilled trades such as electricians had a rate of around 13 suicides per 100,000 workers. The rate of suicide between skilled workers and laborers was observed from 2001-2010, and the laborers had a higher suicide rate every year. Ross (2022) states that construction apprentices are at risk for suicide as well and are particularly vulnerable. Nearly one-third of the apprentices interviewed in the study experienced suicidal thoughts in the past year. Suicidal ideation is very common among construction apprentices and was found to be associated with poorer overall mental health, knowing others who have attempted suicide, and substance abuse (Ross et al., 2022). The high suicide rates in construction cause not only labor shortage issues but also a massive financial burden.

The economy is significantly influenced by the construction industry, as the workforce within it is responsible for creating essential structures and infrastructure. This industry, encompassing the construction of homes, office buildings, roads, and highways, plays a crucial role in contributing to the United States' economic vitality. Employing over 7 million individuals and generating an annual value of nearly $1.3 trillion in structures, the construction industry is a major driver of economic activity in the United States (Gomez & Safa, 2021). Due to the construction industry's high suicide rate, suicide also represents a heavy financial burden on the industry. The construction industry is the fourth major contributor to Australia's economy, generating around $100 billion each year. In 2012 alone, a total of 169 male construction workers lost their lives in the Australian construction industry due to suicide, with an average age of around 37 (Doran et al., 2016). Through analysis, it has been quantified that each construction worker's death costs around $2.14 million. This is calculated by assuming the average construction worker is losing 27.3 years of work and 42 years of potential life. When considering all the lives lost in 2010 in New South Wales alone, around $527 million was lost (Doran et al., 2015). This issue is not limited to Australia but is also prevalent in the United States. The cost of suicides and attempts in 2013 in the United States was around $58 billion (Shepard et al., 2015). Suicides do not only cause grief and pain but also represent a massive financial hurdle globally. Programs such as MATES in Construction are working to decrease the number of suicides in construction and foster an environment of self-care.

The prevention of suicide has not been adequately addressed in the workforce and is a major problem in construction. The topic is seen as taboo and is not discussed at all in many societies (Kinchin & Doran, 2017). However, there is an Australian program named MATES in Construction that is trying to combat this issue. The MATES in Construction program is a workplace-based suicide prevention program designed for and by people in the construction industry. Studies suggest that there is evidence of the effectiveness of the MATES program in aiding mental health and suicide prevention, improving intentions among workers, and reducing stigma (Gullestrup et al., 2023). The MATES program offers a GAT (General Awareness Training) program and a MAT (MATES Awareness Training) that are both offered to Australian construction workers free of charge. GAT is a more formal training that is an hour long, and MAT is a more informal training that is around 15 minutes long (Ross et al., 2020). Ross et al. (2019) conducted a study in Australia that used connectors (workers who are trained to identify and engage with workers who are at risk of suicide) to report the results of the MATES training. The connectors participated in focus groups that were aimed at seeing how MATES was working within the industry. Connectors explained that becoming aware of the issue of suicide within the construction industry, acquiring the skills to address it, and gaining confidence in communicating with someone at risk had inspired them to support their colleagues (Ross, et al., 2019). The MATES program has had very positive effects on construction in Australia and is continuing its work. The stigma around mental health in construction is a wall that needs to be broken down with the help of programs like MATES in Construction.

3. Methodology

The main research question in this study was how construction professionals and managers perceived factors related to suicide. The study strove to explore how different factors, contextual characteristics, and industry-based identifiers are perceived as relevant in construction. The first stage was reviewing the literature to prepare a framework and provide a list of pre-defined factors. To reach the research objective, a quantitative methodology was determined to be appropriate. In the next step, a series of questions was defined and then evaluated by professional experts. To ensure an ethical and standard procedure in data collection and analysis, IRB approval was obtained. Potential respondents in different companies were identified through the construction program industry advisory board, and a link to the online survey on the Qualtrics platform was sent to them. Data collected within a one-week timeframe were modeled, cleaned, and analyzed using statistical software. Finally, a total of 64 responses out of 72 initial ones were specified as acceptable. To examine the reliability of responses, a Cronbach's alpha of .91 for the non-demographic section was obtained, which indicated a very good level. The results of the descriptive analysis are provided in the next section.

4. Results

The first section of the survey covered demographic information, including gender, age, construction work experience, company size (number of employees), and participants' positions in their companies. Following the gender ratios in the construction industry, the majority of participants (83%) were male, and the rest were identified as female. Also, the age categories had close percentages. In addition, the majority of participants (54%) reported 25 years or more of construction work experience. Companies with 51-200 employees had the highest representation with 55%. Additionally, the majority of participants (55%) reported their positions as high-level management, including chairman, president, CEO, etc. The percentage of each level in each demographic question is shown in Table 1.

In the next section, participants responded to a series of questions based on their perceptions. In the first question, participants were asked to compare the suicide rate in the construction industry with other industries, and five levels of comparisons were provided, including Lowest among all industries, Lower than the majority of industries, Around the mid-point among industries, Higher than the majority of industries, and Highest among all industries. A vast majority of respondents (65%) believed that the suicide rate is not higher than in other industries. In addition, only 5% believed that the construction industry's rate is the highest among all industries.

Table 1. Demographic Information

	Level				
Gender	Male	Female			
Percentage	83	17			
Age	21 - 30 Years	31 - 40 Years	41 - 50 Years	51 - 60 Years	60+ Years
Percentage	5	20	27	28	20
Work Experience	<3 Years	3-6 Years	7-14 Years	15-24 Years	25+ Years
Percentage	2	6	16	22	54
Company Size	Less than 20	20-50	51-200	200-500	+500
Percentage	6	17	55	9	13
Position	High-level Management	Office Engineer/Designer	Project Manager	Superintendent	
Percentage	55	8	24	13	

In the next questions, participants were asked to express their opinions about two statements using a five-level Likert scale: first, to what extent they thought suicide prevention was a priority in their companies compared with other factors (e.g., time, cost, etc.), and second, to what extent they thought talking about suicide was a taboo. The percentage of each level in response to both questions is shown in Table 2.

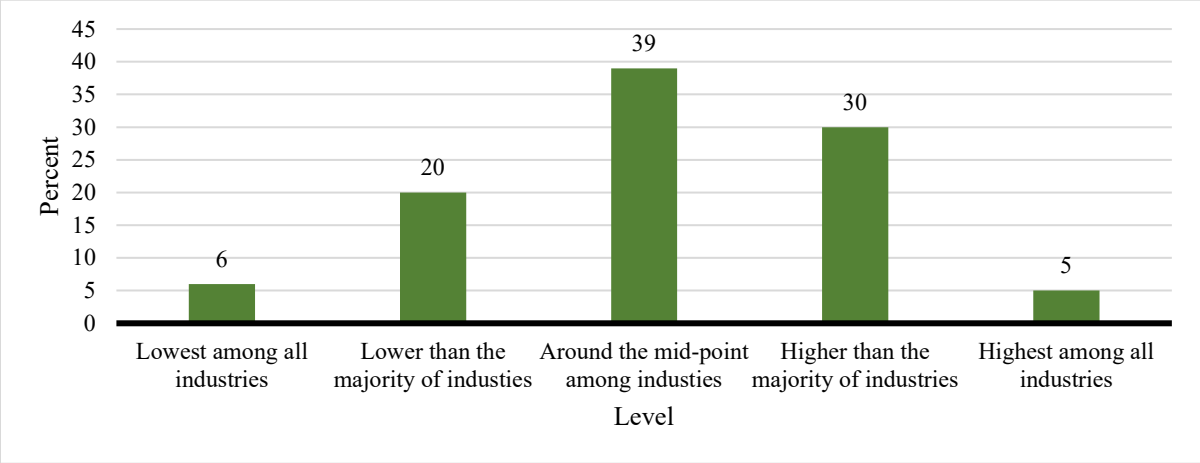

Fig. 1. Comparison of suicide rate in construction with other industries

Table. 2. Suicide in construction companies

	Level				
	Very Low	Low	Moderate	High	Very High
Being Priority	17	30	39	9	5
Being Taboo	13	28	40	14	5

In the next section, participants responded to two questions: 1) if they knew anyone in the construction industry who had successfully attempted suicide, and 2) if they knew anyone in their companies who had attempted suicide. The percentage of each category for both questions is shown in Figure 2.

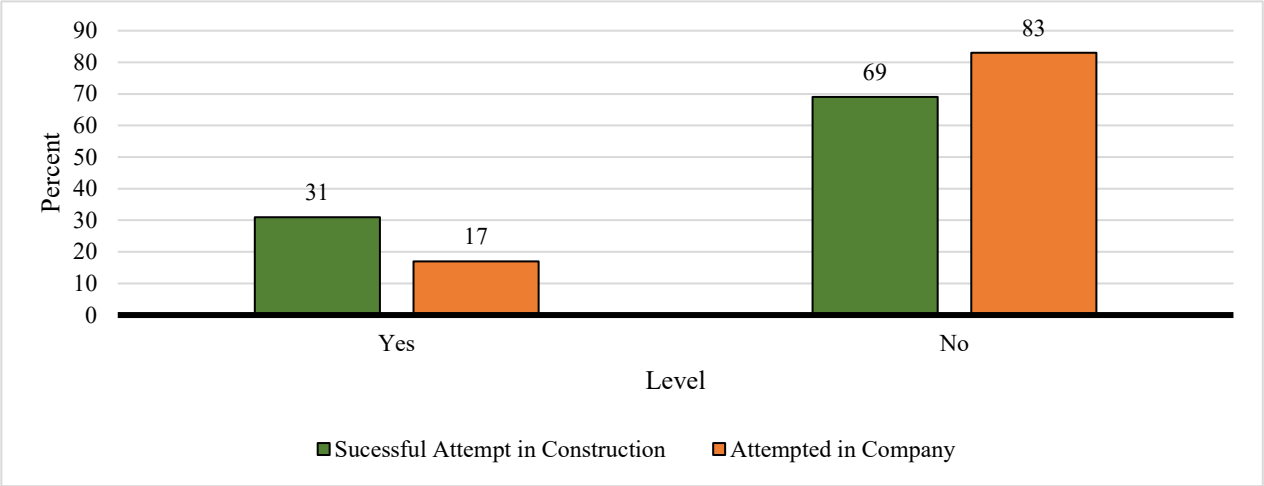

Fig. 2. Suicide attempt in construction and participants' companies

In the next question, participants were asked how they knew if someone in their companies or families was struggling with mental health. Five prespecified responses were provided: conversation with the individual, direct observation of behavior/action/condition, hearing from colleagues and coworkers, report from supervisor, and safety/wellbeing briefings. Figure 3 shows the percentage of each response as an information channel.

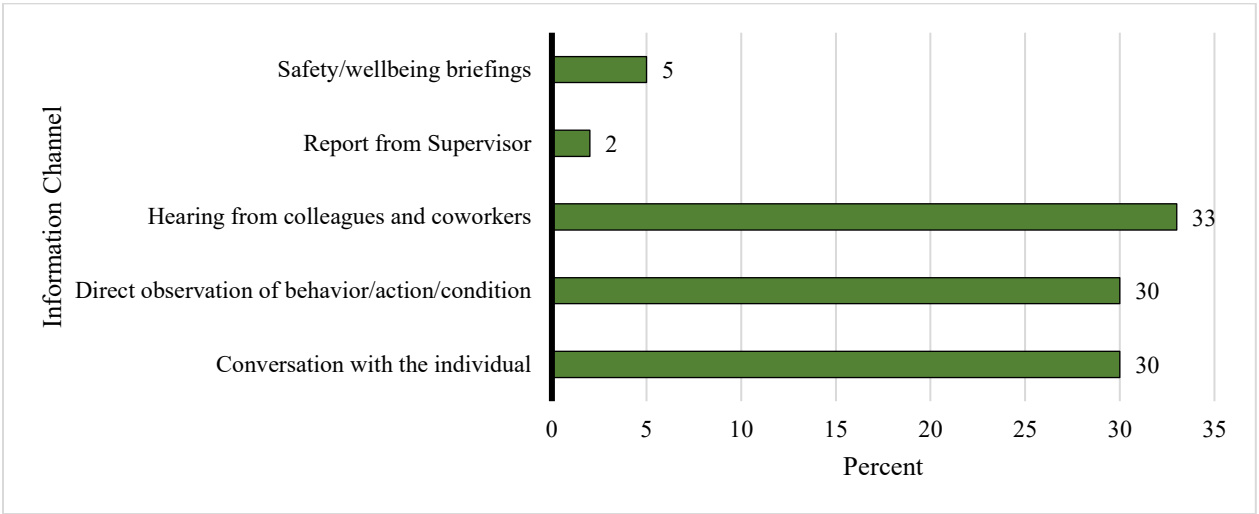

Fig. 3. Information channel

In the next section, participants were asked to rate the usefulness of various predefined tools for sharing with or providing to employees regarding suicide. A five-level Likert scale was provided (1: Very Low, 5: Very High) to assess each tool's usefulness, and the average score for each tool was calculated (out of 5). Figure 4 shows the average score for each tool.

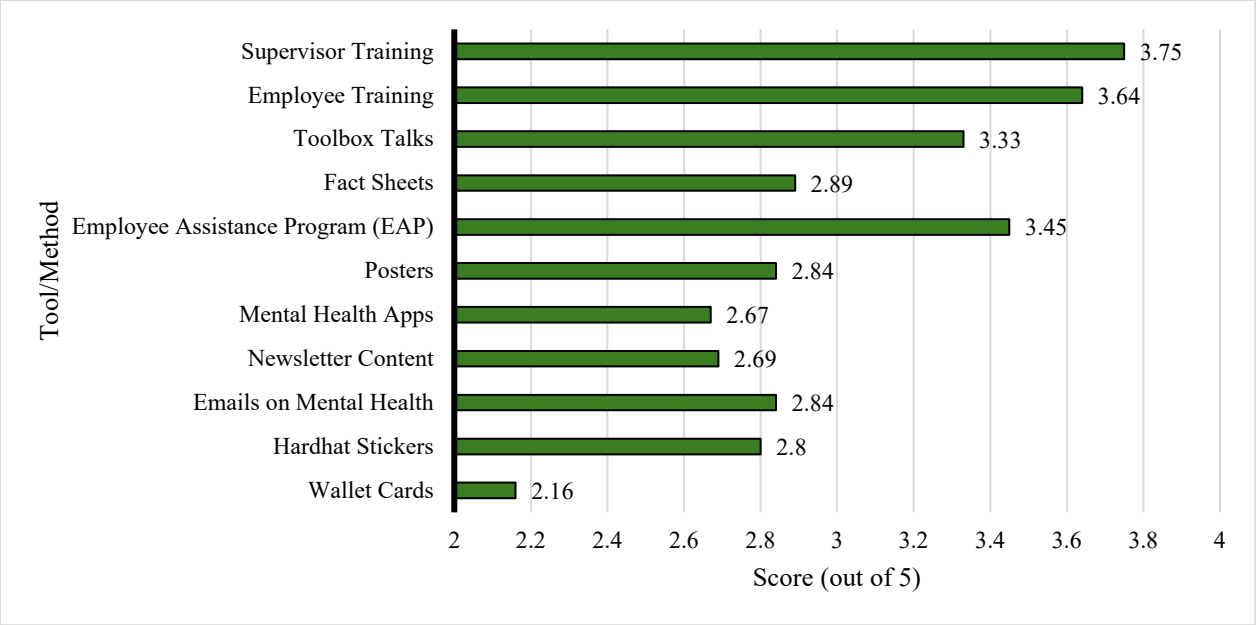

Fig. 4. Average score of suicide mitigation tool

Finally, participants were asked to select the main reason why workers needing help with mental health or substance misuse conditions may not seek care when needed, and four potential reasons were provided. The percentages of responses are provided in Table 3, which indicates that shame and stigma are the main reasons that hinder people from reaching out and getting help from available sources.

Table 3. Obstacle to seek out help

Factor	Percentage
Don't know how to access care	6
Fear of judgement by peers	30
Fear of negative job consequences	23
Shame and stigma	41

5. Discussion

Suicide is a complex and multifaceted problem that is still not adequately discussed and investigated. A review of prior research shows that the problem is sometimes underestimated and not recognized as a serious or current issue in the construction industry. The first step to tackle this problem is to understand it comprehensively. Exploring how professionals and managers involved perceive this problem is one way to investigate it. Through this exploration, gaps and shortfalls are highlighted, which can become subjects for mitigative or remedial actions. Although the sample collected in this study was relatively small, several points were identified and highlighted through analysis, which are elaborated in the next section.

The first point derived from the analysis is the general awareness of construction professionals about the severity of the suicide problem in the construction industry. As shown in Figure 1, participants expressed different levels of perception about the problem. However, 65% of participants stated that the severity of the problem or suicide rate in construction is lower than or the same as in other industries, which contradicts factual data in published documents. Only 5% of participants expressed opinions consistent with reality. This is an important point that warrants further investigation. The awareness level of professionals is considerably lower than what actual data suggests. When

this fact, as the foundation for subsequent actions, is not acknowledged, it becomes difficult to convince professionals and managers to take appropriate action.

The next point is the perception of participants about suicide as an impacting factor. Only 14% of participants stated that the suicide problem is a priority. The low percentage emphasizes the necessity of discussing the problem in a way that makes such discussions and explorations a priority for upper management in construction companies. In addition, 41% believed that discussing suicide is not a taboo (Very Low and Low), which indicates that the topic can still be publicly debated and discussed.

Another highlighted point in the results is the knowledge of professionals about any successful suicide attempts in the construction industry, in general, and particularly in their own companies. In both categories, the "Yes" answer was relatively low. Contrasting these percentages with factual data (Fig. 2) shows that the general knowledge of professionals about suicide-related news and discussions is not at the expected level.

Another critical aspect highlighted in the data is the communication channels about the diagnosis of mental health issues. It is essential to devise or consider various ways to recognize colleagues who struggle with mental health. Such diagnoses are a critical step for any preventive or remedial activities. As shown in Figure 3, the vast majority of respondents chose conversation with the individual, direct observation of behavior/action/condition, and hearing from colleagues and coworkers as the main ways to recognize struggling situations. These methods are all informal and may be neglected or underestimated in coping with mental health management. However, it is essential that upper administration exploit such informal methods as appropriate.

Finally, the last point derived from the analysis is the usefulness of various tools to prevent or mitigate suicide problems. As shown in Figure 4, training is considered the most effective way to tackle suicide issues. The training programs include both supervisors and employees. Such training sessions should be held continuously and consistently.

6. Conclusion

This paper presents the results of the first phase of a research project focusing on suicide and mental health problems in the construction industry. While this subject should logically have the highest priority in the construction industry, it is often neglected or underestimated in both practical and research domains. This study aims to shed light on various aspects of this multifaceted problem to reveal pitfalls, gaps, and deficiencies, which can be the first step toward finding solutions to mitigate the frequency and intensity of suicide-related issues. The findings of a quantitative survey from a relatively small group of construction professionals indicated that there is a gap between professionals' perceptions and factual data. The results showed that construction professionals had limited knowledge about suicide diagnosis, attempted cases, and the status of their industry compared to others. Such gaps emphasized the need for a holistic approach to accept the reality, discuss problem roots, propose potential solutions, and implement preventive and remedial programs. While the sample used in the first phase was statistically acceptable, the generalization of the results is not warranted. A larger sample from different geographical areas can enhance the study's reliability. Additionally, categorizing construction professionals based on their sectors, age, job experience, or personal life can reveal common or differential aspects. Furthermore, a complementary qualitative study on construction professionals who have first-hand experience with suicide can greatly improve the validity of the study.

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