SUICIDE IN THE CONSTRUCTION INDUSTRY: A CROSS-SECTIONAL ANALYSIS

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ABSTRACT

Suicide is a silent killer in the Australian construction industry with suicide rates significantly higher than the all-industry average. These statistics are mirrored in many countries, yet there has been very little research into suicide in construction, compared to other causes of fatalities such as falls and vehicle accidents. This paper uses psychological theories of suicide as a lens to conceptualise, for the first time, the causes of suicide in the construction industry. The conceptual model provides the basis for future research in this area and suggests that poor psychosocial work conditions, bullying and work-family conflicts are the major root causes of suicidal ideation among construction operatives. Lack of access to psychosocial support and counselling, resorting to alcohol and drugs for comfort and pre-existing psychiatric conditions are among other the key factors that translate ideation into suicidal behaviour.

Keywords: The construction industry, work health and safety, operatives, psychological well-being, suicide.

INTRODUCTION

Evidence suggests that suicide rates vary across industry and occupational groups (Lester et al. 2014) with the highest levels of suicide occurring in agricultural, transport and construction industries (Anderson et al. 2010). Anderson et al. (2010) found that suicide rates for construction workers occurred at a rate of 40.3 per 100,000 workers per year, which is significantly above the overall national rate for males at 16.8 per 100,000. Similarly, Doran et al. (2015) found that in 2012, a total of 169 construction workers committed suicide in the Australian construction industry and that for every suicide there were 15 attempts with 3 (17%) resulting in full incapacity and 12 (83%) resulting in absence from work. This situation has persisted for over two decades with Gullestrup et al. (2011) reporting elevated rates of suicide for Australian construction workers compared to the general male population between 1990 and 2006. Notkola et al. (1993), Stack (1995, 1999) and deLooper and Magnus (2005) also showed increased rates of suicide for tradesmen and construction workers compared to the general male working population. And the Cole Royal Commission into the Building and Construction Industry found that 41 percent of all death claims made on

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behalf of Queensland construction workers over a four month period were attributed to suicide (Cole 2003). These are statistics mirrored elsewhere in the world; i.e., it was reported in the UK that every two days, a construction worker commits suicide – a higher figure than any other professional sector (Pearson and Broughton 2003).

Despite these disturbing statistics, the problem of suicide has not gained as much attention from construction safety researchers compared to other causes of fatalities such as motor vehicles, cranes, excavation collapse (Emuze and Smallwood 2013; Flynn and Sampson 2012; Gharai et al. 2015). Furthermore, it is not known how many suicides are related to work-related factors in the construction industry, compared to other factors which might arise out of the work context. To address this gap in knowledge, the aim of this paper is, for the first time, to bring the literature on suicide in construction together with the theory of suicide behavior to build a conceptual model which can inform future research. There is a critical need to do this given the disturbing statistics above and the fact that there has been very little empirical research in this area. For example, of the 7500 papers listed in the ARCOM database of past papers and thesis over 35 years, there is surprisingly not one reference to suicide in construction (http://www.arcom.ac.uk/abstracts-results.php).

METHOD

The research adopted a critical review of academic literatures and research reports to create the conceptual framework, which does not currently exist, to inform future research in this area. The literature review was conducted in two different dimensions. First, psychological theories of suicides were reviewed. The second dimension of literature review was conducted using a critical analysis of research reports and articles written on suicides in the construction industry which were chosen using a number of key criteria which included: peer-review; produced by commercial publishers; official government reports and statistics. Then the findings from the review of construction-related suicide were analysed in light of the psychological theories of suicide and a conceptual framework was consolidated for guiding future research.

PSYCHOLOGY OF SUICIDE

Numerous theories have been suggested in the last twenty-five years to explain why and how suicidal thoughts and behaviours emerge in people. Psychology theorists conceptualised this phenomenon in different ways, giving emphasis to personality and individual differences, social aspects, cognition or negative life events. Summaries of dominant theories and their propositions about suicidal behaviour are presented below.

Psychache theory (Schneidman 1996)

Psychache theory argues that suicide is the result of psychological pain caused by deprivation of vital needs; e.g. achievement, dominance, harm avoidance, understanding, autonomy, etc. The deprivation of any one of these needs causes the development of a psychache which when reaches a high threshold, causes an individual to engage in suicidal behaviour as a way of escaping this state of mind.

Stress-diathesis theory of suicide (Mann et al. 1999)

According to this theory, negative life events lead to feelings of hopelessness, depression, psychosis and suicidal ideation, which in-turn lead to suicidal planning.
The key element in the transition from suicidal planning to suicidal acts is impulsivity, which itself is a result of several factors such as low serotonergic activity, alcoholism, smoking, substance abuse and head injury.

**Schematic appraisal theory of suicide (Johnson et al. 2008)**

According to this theory, negative social appraisals of certain life events result in suicidality; when stressful life circumstances are perceived as defeating, humiliating and entrapment, the possibility of suicide is increased. On the other hand, positive appraisal of the events or not allowing negative life events to control the cognition and emotion excessively can help develop resilience. Several external influences as well as intrapersonal qualities can help develop such positive appraisal; for example, having confidence that one can overcome the situation soon, feeling that family and friends are supportive, having knowledge of worse life circumstances that exist elsewhere or suffered by others, and being spiritually committed and strongly adhering to positive social values.

**Differential activation theory of suicidality (Williams et al. 2008)**

According to this theory, suicidal ideation emerge first as negative cognition at early incidents of depression and an association between the depressed mood and suicidal ideation is formed, but not acted on. However, future episodes of depression will move the suicidal ideation towards behaviour.

**The interpersonal theory of suicide (Van Orden et al. 2010)**

Suicidal desire is caused by the co-existence of perceived burdensome (I am a burden to others), thwarted belongingness (I am alone or do not belong) and being hopeless that the situation will not change. When a person with a higher suicidal desire acquires the capability (reduced fear of death and increased tolerance for physical pain), then a suicidal attempt will occur.

**Integrated motivational-volitional (IMV) theory (O’conner 2011)**

Suicidal behaviour is the result of an individual forming an intention to engage in it. The intention is determined by feelings of being trapped in defeat and humiliation for which suicide is considered as the solution. This sense of defeat and humiliation is often caused by background factors and triggering life events (biosocial context), which exert chronic or acute stress. The transitions from the defeat/humiliation stage to entrapment and so forth are controlled by stage-specific moderators, which either facilitate or obstruct movements between the stages.

**The three-step theory of suicide (Klonsky and May 2015)**

First, suicide ideation is a result of suffering psychological pain and hopelessness. Second, connectedness is a vital protector against escalating suicidal ideation among those experience both pain and hopelessness. Third, advancement from ideation to action is determined by the capacity to attempt suicide, which is dictated by dispositional, acquired and practical contributors.

**COHORTS OF SUICIDE IN CONSTRUCTION**

Although it has been found that being employed is generally associated with a reduced risk of suicide, evidence suggests that most suicides occur among working people and suicide rates vary across industry and occupational groups (Lester et al. 2014).
Research has shown that the spread of suicide among different age and worker groups is as follows:

- Stewart (2014) found that apprentices and young workers aged between 15 and 24 are 10 times more likely to commit suicide than die from an accident on a building site.
- A meta-analysis across 34 studies conducted by Milner et al. (2013) found that the risk of suicide among unskilled construction labourers is almost twice the rate found in the general working population.
- In a more recent study Milner et al. (2014) found that the suicide rate among unskilled construction workers such as labourers was significantly greater than the suicide rate of skilled tradesmen between 2001 and 2010.
- Roberts et al. (2013) showed an increasing divergence in the suicide rates of manual workers compared to higher skilled jobs between 1979 to 2005 with suicide rates among labourers rising significantly over this period, while rates in the highest skilled occupations stayed the same. Research into job stress shows that these differential rates of suicide might be to do with relative levels of control over work and stability and certainty of income (Bonde 2008; Stansfeld and Candy 2006; Milner et al. 2013).

CAUSES OF SUICIDE

There are a range of possible causes of suicides which emerge within the literature which can be used to explain why the rate of suicide in the construction industry is so high. These are discussed below.

Poor psychosocial work conditions

The types of poor psychosocial working conditions found in the construction industry, including high demand, low job control or autonomy, job insecurity and poor workplace support have been found to be associated with poorer mental health and higher levels of suicide (Gullestrup et al. 2011; Heller et al. 2007).

Work-home stressors

Higher rates of suicide in the construction industry may be linked to work-home stressors, mental health problems (Stack 2001), long work hours and heavy workloads (Amagasa et al. 2005). It has been reported that construction workers commonly work six days a week, and up to 80 hours each week to meet increasingly demanding project deadlines (Heller et al. 2007) which cannot only impact on mental health (Tennant 2001) but also contribute to marital dissatisfaction and problems at home (Amagasa et al. 2005), straining relationships and families which may lead to separation or divorce, which has been recognised as a risk factor for suicide, particularly among males (Kposowa 2000). Investigations of suicides in construction have revealed that victims were often separated or divorced or had serious relationship problems preceding their death. The loss of a spouse through separation may exacerbate an already stressful work life, diminish social support networks and increase financial strain (Heller et al. 2007).

Bullying
Higher rates of suicide in younger construction workers may be due to pressure associated with joining a ‘masculine’ industry where there is a considerable amount of bullying especially towards young apprentices (Heller et al. 2007). Bullying in the workplace has been found to be prevalent in blue-collar working environments such as construction (Agervold and Mikkelsen 2004) and has been linked to suicide in the UK and Norway (Rayner et al. 2002).

**Alcohol and drug use**

Alcohol and drug use has been shown to be a common problem among construction industry workers and psychological autopsies have linked such abuse to increased risk of suicide behaviours (Heller et al. 2007). Anderson et al (2010) confirmed that compared to other industries, construction workers were significantly more likely to have consumed alcohol and to have experienced relationship problems and multiple stressful life events in the months prior to suicide.

**Lack of help seeking**

Failure to seek or accept help for mental health issues has also been identified as a key risk factor for young males in the construction industry (Heller et al. 2007). Help seeking rates for mental health problems are consistently lower among males than females due to social masculised stigmas around help-seeking behaviour (Oliver et al. 2005; Milner et al. 2015). Barriers to receiving help are also associated with the geographic isolation of many construction projects from suicide help and advice services (River 2014).

**Familial suicide behaviour (Genetic Influences)**

There is evidence that a suicide is partially genetically determined and that the genetic contribution to suicide risk is between 30% and 50% (Joiner et al. 2005).

**Untreated psychiatric conditions**

Construction workers who committed suicide have been found to be significantly more likely than non-construction workers to show evidence of untreated psychiatric conditions preceding death (Agerbo et al 2007).

**Unemployment**

Males employed in the construction industry are likely to experience periods of unemployment than those in other industries (Australian Bureau of Statistics, 2015). This is a significant risk factor as studies have consistently shown that unemployment is associated with an increased risk of mental health problems (McKee-Ryan et al. 2005) and suicidal behaviour (Milner et al. 2014).

**Social isolation**

Research also shows that loneliness and social isolation can increase the likelihood of suicide and that conversely a strong support network can help buffer against suicide (Joiner et al. 2005).

**Bio/psycho/social traits**

Research shows that certain biological and psychological are associated with a heightened risk of suicide and that these may be triggered under the pressure of certain stressors, such as joblessness, physical marital rancor, or the death of a loved one (Rivlin et al 2013).

**Mental disorders**
Mental disorders are present in approximately 90% of those who attempt suicide (Joiner et al. 2005).

**DISCUSSION**

Figure 1 maps-out the causes of suicide discussed above. The conceptual map posits that when construction workers face poor psychosocial work conditions, bullying, work-home conflicts and/or unemployment episodes, they are at risk of feeling defeated and humiliated which could make them experience acute psychache and depression. The presence of help-seeking behaviour, support systems and social/family networks and connectedness help develop in them resilience. However, the absence of the above culminates in negative self-appraisal/cognition such as helplessness, hopelessness and entrapment, which overtime translate into suicidal ideation. Suicidal ideation alone does not result in suicidal behaviour. When the capacity and impulsivity for suicide is acquired, the ideation is activated as suicidal behaviour. Alcoholism, substance abuse, untreated psychiatric conditions, genes, biopsychosocial traits and low serotonergic activity play a major role in transforming suicidal ideation into action.

The concept map vividly identifies issues in two key phases that need to be addressed to minimise suicide in construction, viz.:

- An established, wide-spread system for the construction industry that identifies workers, who experience feelings of depression, humiliation, defeat and psychache and provide them with regular, organised psychological support.
- Mentoring and educational programs to reduce the stigma of suicidal help seeking behaviour.
Remove the possibilities of workers falling into social isolation and remoteness from family and relations through social networks and counselling programs.

Developing systems/programs to detect workers who suffer from the many potential causes of suicide such as: alcoholism, divorce, substance use, untreated psychiatric conditions, familial history of suicide and low serotonergic activity and provide support to overcome these.

CONCLUSIONS
This exploratory study set out to understand the nature of suicide among construction operatives. It is discernible that poor psychosocial work conditions, bullying and work-family conflicts are the major root causes of suicidal ideation among construction operatives. Lack of access to psychosocial support and counselling, resorting to alcohol and drugs for comfort and pre-existing psychiatric conditions are among the key factors that translate ideation into suicidal behaviour. Attention should be paid to both levels of factors in order to minimise suicide related fatalities in the construction industry. The following suggestions are made, based on the research findings, which are practical implications of this exploratory study:

- Work health and safety authorities such as WorkCover and Safe Work Australia establish mechanisms and systems to regularly monitor, assess and control the psychosocial work conditions, bullying and work factors that exert pressure on family life of workers in construction projects.
- Construction organisations set up programs that identify workers with suicidal ideation, alcoholism, drug use and untreated psychiatric conditions, and counsel and treat them.

The theoretical contribution of this paper lies in the identification of gaps for future research in this important area. Hence, the following topics are suggested for research in the near future to minimise suicide in construction:

- Impacts of psychosocial work conditions in the construction industry on suicidal ideation among construction operatives
- Bullying in the construction industry and suicide
- Developing diagnosis methods for psychological injuries among construction operatives
- Developing positive stress coping mechanisms for construction operatives

REFERENCES


