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An appraisal of the use of cannabis on construction sites

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Abstract

There is increasing concern regarding the impact of the consumption of cannabis by construction site workers on workplace safety and performance. This preliminary study explores the use of cannabis as a psychotropic drug and its consequences and effects on construction workers, considering the decriminalisation of its private use and personal consumption in South Africa. These consequences and effects can be characterized as being behavioural, perceptual, physiological, emotional and cognitive. This study is a precursor for a more detailed ongoing study. The article was developed based on a review of empirical and theoretical studies previously published in a wide range of journals and commissioned reports. Literature relating to drug and substance use in the construction workplace was obtained from research databases. The keywords "cannabis" and "construction industry" were used to search the databases. Of the number of related articles found, a total of 41 articles and reports were cited in the study. The study reveals that cannabis use has short-term health effects such as acute mental illnesses, which could result in impaired reasoning and perceptions. Long-term effects of frequent and continuous cannabis use include respiratory infections and hyperactivity.

Furthermore, the after-effects of the use and abuse of cannabis by construction workers poses numerous threats to the workplace safety of the construction industry. The article identifies loss of concentration and low productivity on site, abnormal and irrational behaviour, absenteeism from work and poor work quality as impacts of cannabis use on construction sites. The article highlights the need for site supervisors and construction employers to introduce improvement mechanisms to control the use of cannabis on construction sites.

Keywords: Cannabis, construction site workers, health and safety, substance use, South Africa

Abstrak

Daar is toenemende besorgdheid oor die impak van die verbruik van cannabis deur konstruksiewereldwerkers op veiligheid en prestasie op die werkplek. Hierdie voorlopige studie ondersoek die gebruik van cannabis as 'n psigotropiese middel en die gevolge daarvan vir konstruksiewerkers in die lig van die dekriminalisering van sy private gebruik en persoonlike verbruik in Suid-Afrika. Hierdie gevolge kan gekenmerk word as gedrags-, perseptueel-, fisiologies-, emosioneel- en kognitief. Hierdie studie is 'n voorloper vir 'n meer gedetailleerde studie wat aan die gang is. Die artikel is ontwikkel op grond van 'n oorsig van empiriese en teoretiese studies wat voorheen in 'n wye verskeidenheid tydskrifte en opdragverslae gepubliseer is. Literatuur wat verband hou met dwelm- en substansgebruik in die konstruksiewerkplek is verkry uit navorsingsdatabasisse. Die sleutelwoorde "cannabis" en "konstruksiebedryf" is gebruik om die databasisse te soek. Van die aantal verwante artikels wat gevind is, is in totaal 41 artikels en verslae in die studie aangehaal. Die studie het aan die lig gebring dat die gebruik van cannabis korttermyn-gesondheidseffekte gehad het, soos akute geestesongesteldhede wat kan lei tot verswakte redenasie en persepsies. Langtermyn-effekte van gereelde en deurlopende gebruik van cannabis is gevind om respiratoriese infeksies en hiperaktiwiteit in te sluit. Die nadelige gevolge van die gebruik en misbruik van cannabis deur konstruksiewerkers stel talle bedreigings vir die veiligheid van die werkplek in die konstruksiebedryf. Die artikel het die verlies aan konsentrasie en lae produktiwiteit op die terrein geïdentifiseer, abnormale en irrasionele gedrag, afwesigheid van werk en swak werkgehalte as gevolg van die gebruik van cannabis op konstruksieterreine. Die studie beklemtoon die noodsaaklikheid vir die terrein toesighouers en konstruksiewerkgewers om verbeteringsmeganismes in te voer om die gebruik van cannabis op konstruksieterreine te beheer.

Sleutelwoorde: Beroepsgesondheid en -veiligheid, cannabis, konstruksiewerkers, middelgebruik, Suid-Afrika

1. Introduction

The construction industry is regarded as one of the most stressful industries to be working in. Emotional and physical responses to this stress occur when there is tension between the demands of work activities and the environment and the pressure on construction workers to satisfy these demands (Bowen, Edwards, Lingard & Cattell, 2014: 1). These consequences and effects have been characterised as being behavioural, perceptual, physiological, emotional and cognitive (Oraegbune, Adole & Adeyemo, 2017: 241).

To alleviate these effects, construction workers have been found to resort to the use of psychotropic drugs that act as psycho-stimulants such as cannabis (Oraegbune *et al.*, 2017: 241). Some of these effects include headaches, shortness of breath, dizziness, nausea, muscle tension, palpitations, loss of appetite, crying, smoking, overeating, lack of concentration, and inability to get work done (Oraegbune *et al.*, 2017: 241).

Cannabis is the most widely consumed illicit drug in the world. In 2014, some 183 million people globally were found to be users (UNODC, 2016: 43). Cannabis use in Africa is widespread across the continent and particularly high in countries of Western and Southern Africa (approximately 5 million in the latter) and is the main drug of concern (UNODC, 2004: 153). Men are three times more likely to use cannabis (UNODC, 2016: 46). The proportion of people in treatment for cannabis abuse in South Africa rose from approximately 5% in 1996 to roughly 20% in 2002 (UNODC, 2004: 153). A study conducted in the United States of America, reported in 2010, found that 12.3% of the construction workers between the ages of 18 years and 50 years admitted to using illicit psychotropic drugs (Golaik, 2010).

While a great deal is known about cannabis and its use, there is hardly any information about its prevalent use on construction sites in South Africa; the interpretation of the recent court ruling and its impact on its pervasiveness on construction sites in South Africa, knowledge of the actual implication of the court ruling; the management of its use in terms of labour relations and substance abuse policy; the effect of its use when viewed in the context of current construction OH&S regulations as legislative and other regulatory frameworks. This article seeks to explore the possible impact of cannabis use by construction workers in the industry, given the legitimisation of its use at home for personal use in South Africa, in particular, with a view to increasing awareness among construction employers. The article outlines both the short- and long-term effects of the use of cannabis and impacts on construction sites and makes recommendations for improved on site control.

2. Literature review

2.1 What is cannabis?

Cannabis refers to the tobacco-like greenish or brownish material made up of the dried leaves, flowers, stems and seeds of the *Cannabi sativa* or *indica* (hemp) plants (UNODC, 2007: 96). The

World Health Organization (WHO) also refers to it as a natural existing drug (UNODC, 2016: 43). Cannabis resin or “hash” is the dried black or brown secretion of the flowering tops of the cannabis plant, which is made into a powder or pressed into slabs or cakes (UNODC, 2007). Cannabis oil or “hash oil” is a liquid extracted from either the dried plant material or the resin (UNODC, 2007).

2.2 Legalization of cannabis

The legalisation of the personal use of cannabis, also known as weed or marijuana, in South Africa by the Constitutional Court on 18 September 2018 presents a challenge for the construction industry, where its use has been covert or clandestine and, in many instances, viewed as synonymous with high levels of productivity on sites. The ruling legitimises the possession, purchase and cultivation of cannabis, which is a psychotropic drug for personal use by an adult in a private dwelling (Nel, 2018). South Africa is not the first country in the world to have taken this step. Others include Canada and Portugal (Possi, 1996: 113), parts of the United States of America, Belize, Jamaica, Spain, Australia, Argentina, Uruguay, Cambodia, Belgium, The Netherlands, Switzerland, and the list is growing.

Several challenges, including what constitutes private use, arise from the court ruling in South Africa. Technically, if individuals in possession of cannabis step outside their home, retain the substance in their pocket, and it is for personal use, they have not broken the law. Possession in itself would no longer carry the previous legal censure. Further, allowing people to purchase marijuana would amount to the court sanctioning dealing in the substance. Should the users want to grow their own cannabis, they would have to purchase the seeds or small plants from another party who would be deemed to be a dealer in marijuana. This is still an illegal practice. The purchaser would be an accomplice to dealing in cannabis. The South African government would need to make a decision about what quantities are allowed per person strictly for personal use.

2.3 Common terms used for cannabis

In order to deal with cannabis on construction sites, it is necessary to know the terms that are frequently used by workers when they refer to the use of the substance or discuss its use among themselves. There are over 1,200 words used for cannabis worldwide (Ramo & Prochaska, 2015: 106). Some of the more common names used on construction sites include:

- Marijuana;
- Weed;
- Pot;
- Grass;
- Dagga;
- Ganga;
- Herb;
- Joint;
- Reefer;
- Pill;
- Boom, and
- Zol.

2.4 Health effects of cannabis

Cannabis is a psychotropic drug that affects and alters brain activities associated with mental processes, perception, and behaviour. Psychotropic drugs are also referred to as psychotherapeutic or psychoactive. More particularly, cannabis is a psychoactive drug. As such, it is a chemical substance that acts primarily upon the central nervous system where it alters brain function, resulting in temporary changes in perception, mood, consciousness, and behaviour (Kosen & O'Connor, 2003: 1788). Cannabis also acts as a psycho-stimulant: it elevates the mood, and produces feelings of excitement, alertness, attention, energy, and euphoria. This elevation is usually followed by a breakdown (EISOhly & Gul, 2014: 3).

What makes cannabis so appealing and of interest is the fact that there are 483 known compounds in the plant, including at least 65 other cannabinoids (Bowen *et al.*, 2014: 3). These cannabinoids form one of a class of diverse chemical compounds that act on cannabinoid receptors in cells that alter neurotransmitter release in the brain. In simple terms, cannabinoids slow down communication between cells in the body and the brain.

The chemical Delta-9-tetrahydrocannabinol (THC) is responsible for the way in which a user's brain and body react to cannabis (Bowen *et al.*, 2014: 3). It is argued that there are potential therapeutic benefits such as feeling relaxed and happy as well as health risks such as unpleasant, unwanted or negative effects on the brain and body that arise from the use of cannabis (Ratini, 2018).

2.4.1 Impact on the brain

Some short-term effects on the brain have been cited as:

- Confusion;
- Changes in mood;
- Fatigue or sleeplessness;
- Impaired ability to remember, concentrate or pay attention;
- Impaired body movement;
- Anxiety, fear or panic, and
- Reduced ability to react quickly (Leirer, Yesavage & Morrow, 1991: 221; Karschner, Swortwood, Hirvonen, Goodwin, Bosker, Ramaekers & Huestis, 2016: 684).

The use of cannabis is reported to possibly involve psychotic episodes (Meier, Caspi, Ambler, Harrington, Houts, Keefe, McDonald, Ward, Poulton & Moffitt, 2012: 2658). These are generally severe mental disorders that cause abnormal thinking and unrealistic perceptions. Consequently, people with psychoses lose touch with reality. When cannabis is taken in high doses, these psychotic episodes are characterised by, *inter alia*,

- Temporary paranoia;
- Delusions;
- Worsening schizophrenia;
- Disorganized thinking, and
- Temporary hallucinations (Wang, Derakhshandeh, Liu, Narayan, Nabavizadeh, Le, Danforth, Pinnamaneni, Rodriguez, Luu, Sievers, Schick, Glantz & Springer, 2016; Thomas, Kloner & Rezkalla, 2014: 188).

Cannabidiol (CBD) is one of the over 100 phytocannabinoids identified in *Cannabis sativa* (UNODC, 2004:128) and constitutes up to 40% of the plant's extract, being the second most abundant component (Grlc, 1976). It is possible for Cannabidiol, a chemical in cannabis itself, can possibly reduce some of the psychoactive effects of its use such as disturbances in mood, perception, and psychotic symptoms (Bhattacharyya, Morrison, Fusar-Poli, Martin-Santos, Borgwardt, Winton-Brown, Nosarti, O'Carroll, Seal, Allen, Mehta, Stone, Tunstall, Giampietro, Kapur, Murray, Zuardi, Crippa, Atakan & McGuire, 2010: 764).

Drugs taken together are known to have a cumulative or synergistic effect, thus increasing the overall psychoactive experience (UNODC, 2016: 48). There is evidence that, using cannabis, which

has 50% more tar than high-tar cigarettes (UNODC, 2007: 278), in combination with other substances such as tobacco in blunts and spliffs/mulled cigarettes or alcohol, may increase the severity of some psychoactive effects (Ramo & Prochaska, 2015: 291) and the risk of mental health outcomes (Schauer, Rosenberry & Peters, 2017: 364). The combined use of cannabis and tobacco presents a significant potential for nicotine exposure. This may lead to excessive tobacco-use patterns, nicotine addiction, and compounded health effects.

2.4.1 Impact on the body

The short-term effects on the body include:

- Damaged blood vessels caused by smoke;
- Decreased blood pressure, resulting in fainting or passing out;
- Intense nausea and vomiting;
- Chest pain;
- Increased heart rate, leading to increased risk of heart attack, especially in people with heart conditions, and
- Headaches (Wang *et al.*, 2016; Thomas *et al.*, 2014: 184; Galli, Sawaya & Friedenber, 2011: 242).

In terms of impairment, Delta-9-tetrahydrocannabinol (THC) affects:

- Coordination;
- Reaction time;
- Change in sense of time;
- Ability to pay attention;
- Decision-making abilities, and
- Ability to judge distances.

Impairment can last for over 24 hours after the use of cannabis which is long after the other effects have faded (Leirer, Yesavage & Morrow, 1991: 222). One of the consequences in regular users could be the difficulty with skills needed to drive safely for weeks after their last use, because cannabis smoking increases the risk of motor vehicle accidents (Karschner *et al.*, 2016: 685).

Long-term effects of the frequent use of cannabis that continue for weeks, months or years develop gradually over time (Meier *et al.*, 2012: 2657). Of concern is that these effects are found to last beyond when the use of cannabis has stopped and may not be fully reversible. Long-term effects on the brain that affect brain development include:

- Increased addiction;
- Damaged memory;
- Inability to concentrate;
- Reduced intelligence quotient (IQ); up to 8 IQ points between the ages of 13 years and 38 years (Jackson, Isen, Khoddam, Irons, Tuvblad, Iacono, McGue, Raine & Baker, 2016: 502), and
- Reduced ability to think and make decisions.

In addition, problems with child development during and post pregnancy have been found in several studies (National Academy of Sciences, Engineering and Medicine, 2017; Goldschmidt, Day & Richardson, 2000; Richardson, Ryan, Willford, Day & Goldschmidt, 2002; Perez-Reyes & Wall, 1982).

Long-term effects on the body have been found to include:

- Risk to lung function;
- Increased frequency of lung infections;
- Bronchitis;
- Chronic long-term cough;
- Increased mucus build-up in the throat;
- Cardiac arrest and strokes;
- Seizures, and
- Hyperactivity (National Academies of Sciences, Engineering, and Medicine, Health and Medicine Division, 2017).

The frequent use of cannabis has also been linked to an increased risk of suicide, depression and anxiety disorders. If a person smokes cannabis daily, the risk of addiction has been found to be between 25% and 50% (Volkow, Baler, Compton & Weiss, 2014: 2219). Cannabis addiction has been found to lead to, *inter alia*,

- Absenteeism and failing to execute major tasks and duties at work;
- Giving up important activities because of cannabis use;
- Unintentional increased frequency of use in larger doses, and
- Inability to reduce or control the use of cannabis (Zwerling, Ryan & Orav, 1990: 2640).

2.5 Ways of using cannabis

The main ways of using cannabis are by means of smoking (inhalation) or eating (ingestion). In the case of smoking, which includes vaping, cannabis begins to work fastest as THC is carried to the brain in the bloodstream and a user may start to feel 'high' within seconds or minutes. The amount of THC peaks in roughly 30 minutes and then fades after one to four hours. There are several ways in which cannabis can be smoked, including:

- Hand-rolled into a cigarette, known as a joint;
- In a pipe or water pipe, referred to as a bong;
- In a cigar that has been hollowed out and refilled with cannabis, called a blunt, and
- In the form of sticky resins drawn from the cannabis plant which have a higher concentration of THC.

When cannabis is consumed or ingested, the effects are slower than if smoked. Typical periods before the onset of the 'high' feeling are between 30 minutes and two hours. The after-effects last up to eight hours. Cannabis can be mixed, *inter alia*,

- In food such as brownies, cookies and candy;
- In teas in which it is brewed;
- In hash oil or honey oil, which is a sticky glue-like liquid;
- In wax or butter form, which is a soft texture-like lip balm;
- In vaporizer in liquid form;
- Shatter, which is a hard amber-coloured solid, or
- In tonics and tinctures.

2.6 Reported therapeutic benefits of using cannabis

Several therapeutic benefits for the use of cannabis for medicinal reasons have been reported. For example:

- Feeling of relaxed well-being and heightened senses, making colours appear brighter;
- Increased sociability;
- Muscle relaxant in the case of stiff muscles or muscle spasms from multiple sclerosis;
- Analgesic effect to relieve ongoing pain, which is the most common use for medical cannabis;
- Help with sleep problems in persons suffering from fibromyalgia and sleep apnoea;

- Appetite stimulation in cases where persons with AIDS suffer loss of appetite and weight loss;
- Anti-emetic effect, which prevents vomiting such as from chemotherapy;
- Anticonvulsant effect, and
- Lower intraocular pressure, namely pressure in the eye (Ratini, 2018).

2.7 Reasons for using cannabis

Several reasons have been posited for the use of cannabis as a drug on construction sites. These reasons directly or indirectly relate to the working conditions on job sites or the workers themselves (Mushi & Manege, 2018: 68).

Directly related reasons or coping strategies include the need to:

- Increase concentration;
- Increase self-confidence;
- Have more physical strength, and
- Reduce anxiety and tension.

Other non-work-related reasons include:

- Tradition and customs;
- Personal lifestyles, and
- Peer pressure (Kikwazi, 2015: 363; Laad, Abdul, Chaturveli & Shaikh, 2013: 281; Ntifi *et al.*, 2015: 49).

A study conducted in Nigeria found the following:

- 85% of the construction workers depend on psychotropic drugs for productivity;
- 90% of the construction workers claim that they cannot work for long periods at a time;
- 93% of the construction workers report that the quality of work deteriorated, and
- 73% reported that workers abused psychotropic drugs on site (Oraegbune *et al.*, 2017: 242).

2.8 Possible signs of having used cannabis

In order to control the use of cannabis, it is vital that management and site security are able to detect the symptoms of use. There are many tell-tale signs that could alert the use of cannabis by workers and them still being 'high.' However, these signs might also

be indicative of the use of other substances that include alcohol or strong medication. These signs include the worker having or demonstrating, *inter alia*,

- Glassy red eyes;
- Poor muscle and limb co-ordination;
- Delayed reaction times;
- Increased appetite;
- Sudden mood shifts, and
- Abrupt symptoms of anxiety, panic or hallucinations.

The most distinctive sign of cannabis use is its skunk-like smell or odour that generally permeates the clothes and body of the worker (Meier *et al.*, 2012: 70).

2.9 Paraphernalia and hideaway places

Cannabis users will be 'inventive' to conceal their cannabis-related activities on construction sites. For example, the following paraphernalia, *inter alia*, could be found on site:

- Rolling papers;
- Pipes such as glass top of bottles (darkened from burn residue);
- Cigar papers with their content emptied, and
- Edibles with a green hue.

Examples of places where cannabis users will hide cannabis on site include the following:

- In cavities and crevices;
- Carved out spaces at the top of doors;
- Over-the-counter medication packages to avoid detection;
- Soda or cooldrink cans;
- In drop or suspended ceiling spaces;
- In water bottles;
- In their clothing;
- In toolboxes;
- In hammer handles, and
- In spirit levels, to mention a few (Mushi & Manege, 2018: 69).

3. Research method

3.1 Literature search

Data for the study was obtained from papers related to cannabis and illicit drug use through multiple database searches up to 2018. Online-computerised search engines, including Elsevier (Science Direct), Taylor and Francis, Emerald Insight, ResearchGate and other internet sources covering the main peer-reviewed journals and conference proceedings in the field were selected. A systematic and extensive database search was conducted, using initial descriptors such as cannabis, health and safety, substance use, construction site workers, and South Africa. Other keywords related to advanced and emerging technologies such as 'drugs', 'substance-related disorders', 'psychotropic drugs', 'workplace safety', and so on were identified. Articles reviewed and cited in this study include those published in reputable scholarly journals and reports. Two rounds of searches were conducted and the results were exported into Endnote X8. After excluding duplicates, a total of 128 publications were found.

3.2 Literature review selection

Despite strict specifications, papers within the research theme may have been missed. Possibly, papers that did not match the research theme, but matched the research topic were included. Therefore, the total literature had to be further filtered. At this stage, a two-round selection was conducted. First, the types of publications were considered and fact sheets, summaries, videotapes, portable guides, patents and bulletins were excluded. A total of 76 publications remained after filtering. In the second selection phase, the abstract and keywords of the 76 publications were reviewed and unsuitable papers were eliminated, leaving the number of relevant publications at 41.

4. Discussion

4.1 Threats to the construction industry

The effect of cannabis is felt within seconds of smoking and can last up to six hours. On the other hand, after eating or ingestion, the effects are felt within 30 minutes and last for up to 12 hours (Bhattacharyya *et al.*, 2010: 764).

Given that the after-effects of the use of cannabis last for many hours, it is likely that construction workers who used cannabis at home or off site could come to work feeling high. Consequently, they place not only themselves, but also their fellow workers at risk on construction sites. There is emerging research into the effects of second-hand exposure from a cannabis smoker, for example, in close proximity (Herrmann, Cone, Mitchell, Bigelow, LoDico, Flegel & Vandrey, 2015: 194; Cone, Bigelow, Herrmann, Mitchell, LoDico, Flegel & Vandrey, 2015: 1). In South Africa, as the overarching piece of legislation in the country, the Constitution stipulates that employees are entitled to a working environment that does not present a threat to their health and safety. This entitlement is captured in the Occupational Health and Safety Act of 1993 as amended, in terms of which employers must ensure a working environment for all their workers that does not present a threat to their health and safety. The Construction Regulations of 2014 requires the development, implementation, monitoring and review of the site- and project-specific health and safety plan to manage the health and safety aspects of the construction project. This plan would incorporate the provisions of several policies that should include a policy on substance abuse. This policy should ideally be a 'zero tolerance' one, with clear censures for non-compliance with its provisions.

4.2 Impact on construction sites

The use and abuse of cannabis by construction workers, given the likelihood that its use will be more visible and brazenly open, particularly in South Africa after the court ruling, will lead to several impacts on construction projects. The construction sector will also be affected, unless its use on site or after-effects from use at home or off site are controlled on site in the workplace. These include:

- High rates of absenteeism by workers who use cannabis and have after-effects from use before coming to work;
- Loss of productivity on site because of the lasting effects of use off site;
- Violent and unpredictable behaviour that could even include petty crimes such as theft and pilfering to fund the cannabis habit;
- Steadily decreasing work quality, resulting in unnecessary rework;
- Increasing inability to pay attention and concentrate for any length of time;

- Needless risk-taking, threatening workplace safety and the safety of fellow workers on site, and
- High labour turnover with the associated recruitment costs (Laad *et al.*, 2013: 281; Ntili *et al.*, 2015: 54; Biggs & Williamson, 2012: 451; Pidd, Roche & Buisman-Pijlman, 2011: 1627; Pidd, Roche & White, 2011), especially since the industry suffers from a chronic skills shortage.

According to a recent study, 15.1% of the construction workers used drugs. Another study of 150 construction workers between the ages of 20 years and 40 years found the widespread use of cannabis, because it was inexpensive and easily obtainable (Mushi & Manege, 2018: 66).

5. Recommendations for on-site control

Construction sites have been found to be the most susceptible and vulnerable workplaces for cannabis use (Pidd, Shtangey & Roche, 2008: 63; Frone, 2006a: 4; Frone, 2006b: 857). A study found that third parties such as women as food vendors were used to smuggle in cannabis under the guise of bringing or selling food to workers. Security guards were paid to turn a blind eye (Mushi & Manege, 2018: 69).

Suggestions to improve the control of the use of cannabis itself on site or to reduce the likelihood of construction workers coming on to the site with the effects of cannabis use off site include:

- The need for management including foremen, site supervisors and site security personnel to be knowledgeable, aware and vigilant (Bowen *et al.*, 2014: 10);
- Create behavioural change in the workplace through the combined use of the traditional extrinsic pathway governed by systems and rules with rewards and punishments and the intrinsic pathway which establishes voluntary compliance via individual commitment to health and safety (Biggs & Williamson, 2012: 451);
- Development of intensive awareness programmes presented using multiple media as part of toolbox talk programmes;
- Implementation of peer interventions and support initiatives, since workers are more likely to respond to their peers than to their supervisors;
- Development and communication with the involvement of trade unions and health and safety representatives of a

'no or zero tolerance' substance abuse policy that includes regular random testing (Bowen *et al.*, 2014: 11);

- Disciplinary action where the substance abuse policy has been breached;
- Improving access and egress control of construction sites that may include random physical body searches and restriction of worker exits during working hours;
- Conducting frequent routine inspections of workplaces and ablution facilities;
- Setting up an anonymous helpline for workers to report use and to seek counselling if addicted to cannabis;
- Consideration for a strict no smoking policy or provision of designated smoking areas that are properly monitored;
- Reducing workplace stressors that include adjusting workloads and improving workplace culture and controls through holistic wellness programmes (Bowen *et al.*, 2014: 11), and
- Provision of lockers on site for workers in properly monitored areas.

6. Conclusion

It is likely that at least 15% of the construction workers, irrespective of trades, levels of skills and experience, are cannabis users. Management and supervisors need to know their workers well enough to detect sudden changes and symptoms of possible cannabis use. Younger male workers are most likely to use cannabis on site. Appropriate policies with support and involvement of worker representatives are necessary. Access control and regular inspections are required to prevent the smuggling of cannabis onto construction sites, with particular emphasis on items usually allowed on site. Further study is necessary to determine the impact of the recent court ruling on the use of cannabis on construction sites in South Africa as well as the challenges it presents to construction health and safety and its management. An amendment to the current construction health and safety legislation and regulations might be needed that specifically requires a substance abuse policy to be provided and implemented on all construction sites.

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