ARE WE THERE YET?

The battle against propofol abuse within the medical profession

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[1,2]

Introduction

Although propofol only attracted public attention after its implication in the 2009 death of Michael Jackson, it had gained the attention of the medical community well before this. With its widespread acceptance as an anaesthetic agent in the mid-1980s began its concomitant abuse, mostly by those in the medical profession. Since the first report of propofol abuse was made in 1992,[3] it has been increasingly recognised for its addictive potential.

Following on from the 2016 essay "Milk of Amnesia – are we forgetting something?" this paper will revisit the battle against propofol abuse within the medical profession, examining whether we are adequately implementing proven protocols for reducing substance abuse.

Discussion

Recognising that propofol abuse amongst anaesthetic staff is an issue of increasing concern, in 2015 a retrospective study encompassing the years 2004 to 2013 was undertaken throughout Australia and New Zealand to look at substance abuse. Although the study only looked at anaesthetists, the results could reasonably be extrapolated to anaesthetic assistant staff. Importantly, propofol was the most commonly abused substance accounting for 41% of drug abuse cases, and was associated with multiple negative outcomes including effects on employment, with only 28% of anaesthetists abusing propofol able to continue in their career. Rates of injury and mortality were high due to the narrow margin of safety of propofol, made worse as escalation of abuse is common. Quick onset of action often leads to injuries through falls, typically resulting in facial injuries. Motor vehicle accidents are also a common presentation.[4] All deaths in the study – whether identified as suicide or accidental overdose – involved propofol, with mortality rates of up to 45% mirroring those reported in other studies.[5,6] Notably, death is often the first indication of propofol abuse.[5,7]

In 2013 a Coroner's Inquest was held into the death of an RPH theatre nurse, who had died due to a self-administered propofol overdose. Investigations revealed evidence of ongoing abuse of propofol and other drugs that appeared to have been taken from a hospital. Subsequently recommendations were made to create measures to restrict the unauthorised use of propofol[8] and these were introduced in 2014.[9] The Inquest also referenced a 2010 report tabled in Parliament by the Corruption and Crime Commission, which looked at drug misconduct handling procedures within the public health sector. Of note, in the section titled "Misconduct Risk" issues such as the potential for drugs to be sold on the street, risks to patient safety and delivery of services in the clinical setting, and the negative impact financially to WA Health were highlighted. Glaringly obvious throughout the 137 pages of the report was the absence of any mention of staff wellbeing or prevention of addiction, something also lacking in the Coroner's Inquest.[10] The only mention of staff related to the provision of education on the ethics of misconduct and how to handle misconduct, with a focus on management issues rather than protecting staff. If the goal is to reduce abuse of propofol, an approach focussed on restricting access and punitive measures for those who succumb has a low likelihood of success, with research showing that "increased restriction of access to medications has been reported to have no impact on the incidence of abuse, while potentially increasing the risk of a fatal outcome."[5] As current protocols have singularly

focussed on restricting access, this is unlikely to succeed in eliminating drug addiction in the absence of a strong education campaign. This is nowhere more apparent than in the approaches used in Australia to successfully reduce rates of smoking.

The past 60 years have seen Australia go from smoking rates of approximately 50% of the population down to 13.3% in 2013.[11-13] Although measures to restrict access to cigarettes assisted in this reduction, targeted education campaigns have been a key component of Australia's success in curtailing smoking rates, and have been copied throughout the world.[14] Key to the efficacy of these campaigns has been their ongoing nature, with the need for ongoing smoking education underscored by a 1995 Australian study into smoking trends. It identified that per capita spending on antismoking campaigns was inversely related to smoking levels, with decreased smoking levels corresponding to increased funding, and a levelling off of this effect with decreased expenditure.[15] This has been reinforced by further research which has shown that in order to be effective, education on the issue needs to be frequent and ongoing.[16,17] This is in spite of pre-existing knowledge about risks from smoking. In response to this, strengthening mass media campaigns is a key component of the National Tobacco Strategy to decrease rates of smoking in Australia.[18] If we apply this wealth of information on effective strategies to decrease adoption of addictive behaviours, it should be clear that education of anaesthetic staff on propofol abuse must be prioritised. So what is currently being done to educate anaesthetic assistant staff on the risks of propofol abuse?

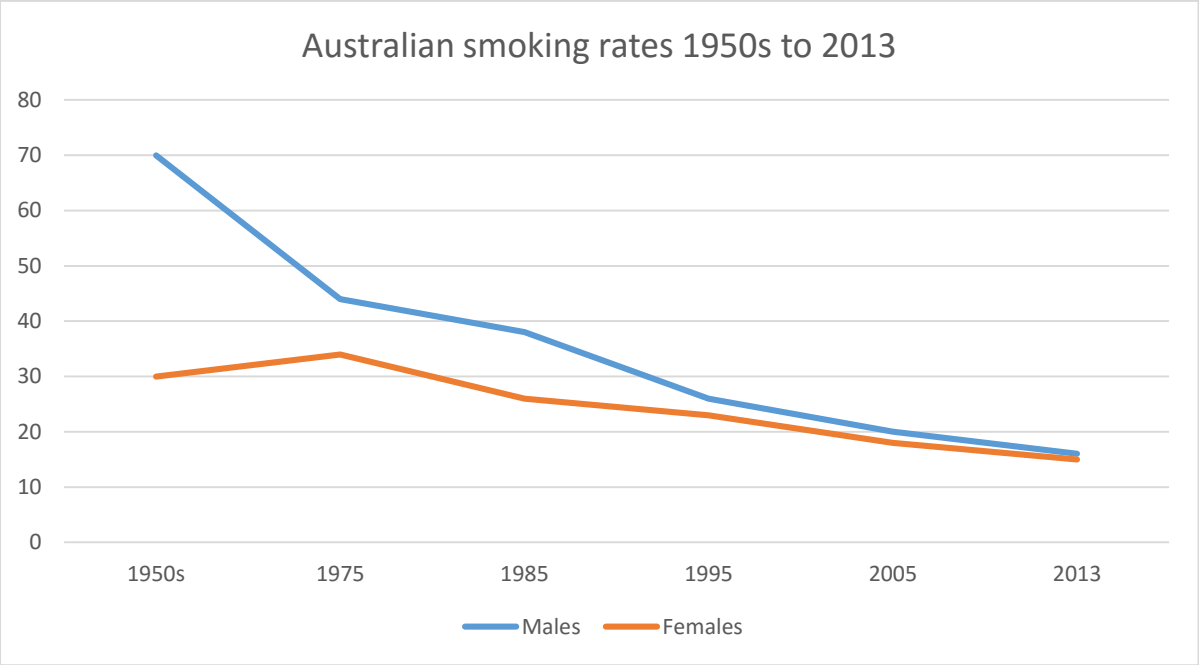


Figure 1: adapted from information from AIHW and Tobacco in Australia[12,13]

In July and August of 2017, an online survey of anaesthetic assistants throughout Australia and New Zealand was undertaken in order to get an indication of knowledge regarding propofol risks, and to assess the degree of education being provided to those most at risk of propofol abuse (see Appendix 1). The results of this survey indicated there are high levels of understanding of the risks of propofol abuse, with most respondents reporting that they were aware of the potential effects on career, and risks of injury and death. However, the questions regarding education returned very different results, with 73% of respondents

reporting that they had received *no* education on propofol abuse during their training, and 80% indicating that they had received none since commencing their careers. Considering that 75% of respondents have been working for longer than 5 years, and that ongoing and regular education is a proven key in drug abuse avoidance and minimisation, this is an appalling indictment of an industry failing to adequately care for its employees. Clearly this needs to change, and it is a change that would be best led from within the industry.

Approaches to address propofol abuse need to target two distinct groups: those who have never abused propofol, and those who are already abusing. Additionally, the focus needs to be preventive and reparative rather than punitive, as fear of negative consequences factors in to staff reluctance to both report substance abuse in others, and to seek help for themselves.[10] As stated by the Welfare of Anaesthetists Special Interest Group, substance misuse by anaesthetic team members "is primarily a health and ethical issue; it should involve therapeutic strategies, rather than employment, disciplinary, or criminal processes."[7]

The prime group to target, are those who have never abused propofol, making prevention the first objective. As noted by the National Institute on Drug Abuse, "if we can prevent…people from experimenting with drugs, we can prevent drug addiction."[19] This would require education on propofol abuse to be introduced as a fundamental component of all training programmes, addressed before students have even entered the operating theatre environment. Once students have graduated, this needs to be reinforced through regular re-education on propofol abuse, in line with the focus given to areas of patient care such as malignant hyperthermia and anaphylaxis.

The second objective should be detection of those already misusing. To achieve this, ongoing training on the risks of propofol abuse should also include education on how to recognise abuse in others, and the reporting protocols to for staff follow if abuse in a colleague is suspected. The aim of this education would be to increase the likelihood of early interventions, which have been demonstrated to facilitate staff recovery.[7] Staff should be reassured about the confidentiality of reports, and that appropriate action would be taken, as these are the two main reasons staff reported they would not report misconduct if they witnessed it in the workplace.[7,10]

The third objective would be to develop a response plan. This would include protocols on how to conduct an investigation into suspected abuse, how to report any abuse subsequently discovered, and how to conduct an intervention. As managers often have personal relationships with their staff that extend outside of the work environment, this can create a conflict of interest that may seriously impede an objective investigation. These additional difficulties should be recognised, and training in their management given to management staff.[10]

Interventions need to be carefully planned, and should not be attempted without sufficient evidence as individuals will frequently deny abuse. Recognising that suicide risk is high after an intervention, careful monitoring and follow-up should be provided, potentially including psychiatric evaluation, and suicide risk assessment.[7] Treatment options should be considered in advance, and may require either voluntary or involuntary admission to a detoxification

facility immediately after the intervention. A report to police may also need to be made. As these are decisions that would need to be made quickly, and potentially under significant duress, it becomes important that there are clearly defined protocols to be followed by management, and clear pathways for accessing resources provided.

As these issues would be dealt with by management and involve many complex issues, training should be provided to managers on how to respond to substance abuse, with clear pathways and accessible resources provided. This is particularly important given the findings of the Corruption and Crime Commission, which indicated that often management staff come from a clinical background and have no formalised training in management. Many reported to the Commission that they often felt uncertain of how to deal with instances of staff misconduct in the workplace.[10] Additionally, in line with recommendations made by the Welfare of Anaesthetists Special Interest Group, treatment options including plans to potentially manage return to work should be developed, so that staff members who are already abusing are able to be offered targeted rehabilitation.[7]

Conclusion

Propofol abuse is a significant problem with multiple serious potential consequences. The protocols introduced in 2014 to address propofol abuse must only be considered a first and partial step towards reducing rates of propofol abuse. Further actions should include development of protocols for the recognition of propofol abuse, along with clear response guidelines. This should include the establishment of standardised treatment protocols along with return to work guidelines and long-term follow-up with compulsory testing to confirm ongoing abstinence in those identified as already abusing. However, more importantly we should work towards prevention of abuse initiation with improved awareness of the risks of propofol abuse through "ongoing education, appropriate policies and mentoring in all anaesthetic departments."[5] In line with methods proven to decrease smoking initiation, this would be the measure most likely to reduce rates of propofol abuse amongst anaesthetic assistant staff.

Appendix 1: Survey on propofol abuse, July/August 2017

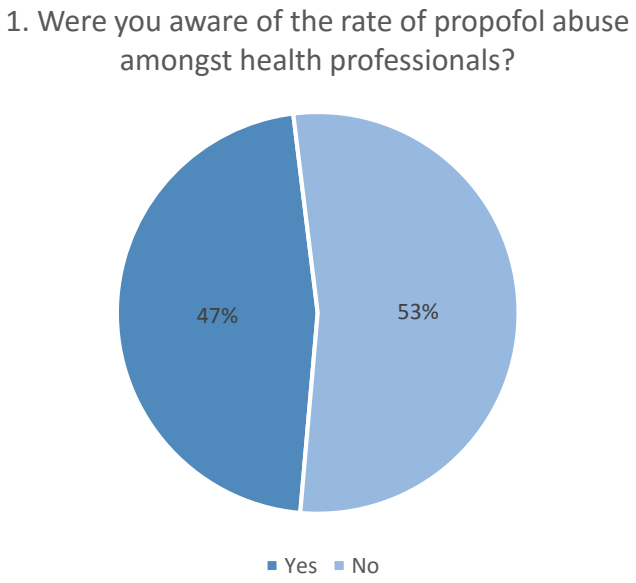
Please read the following information, and then answer the questions. Rates of propofol misuse/abuse are increasing, mostly by those who work in anaesthetics. The main reasons given are:

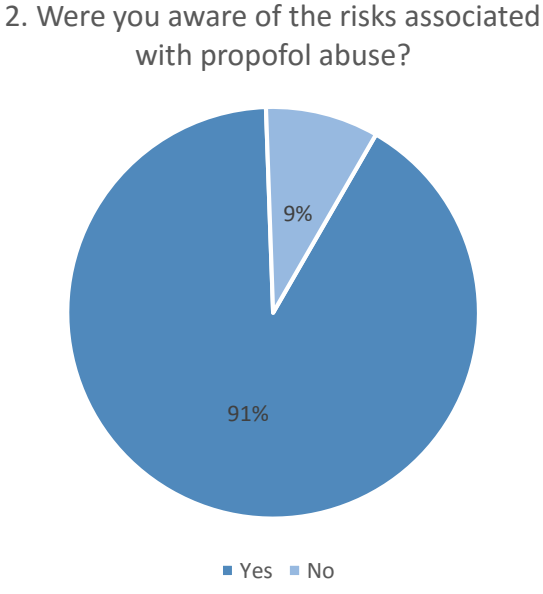
- Sleep - 41%
- Anxiety - 27%
- Euphoria - 18%

The risks are significant.

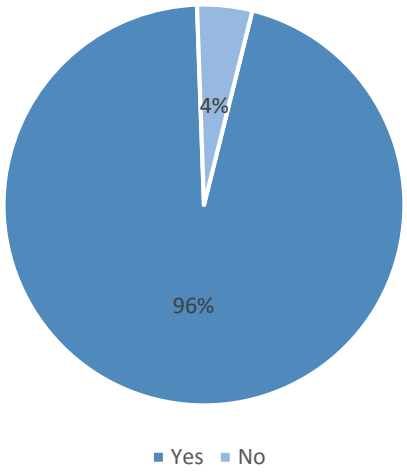
- Injury mostly from motor vehicle accidents and falls
- Ending of careers
- Death rates as high as 45%

Prior to reading the above information:

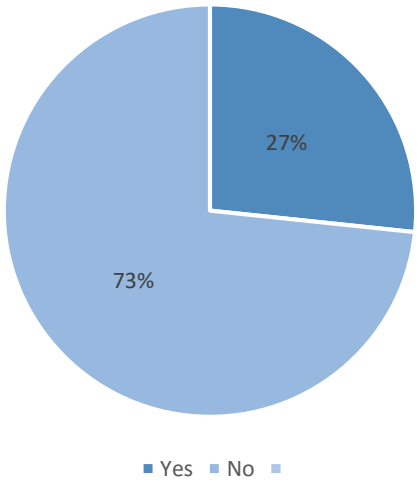




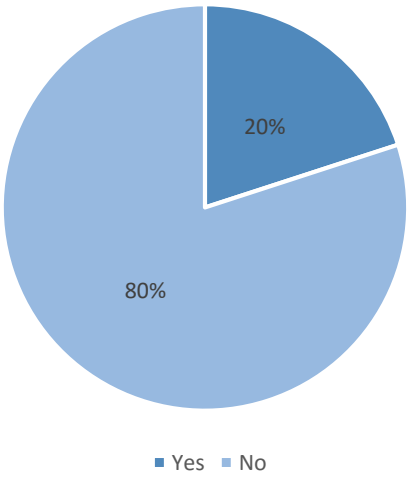
3. Were you aware of the potential effects on career?



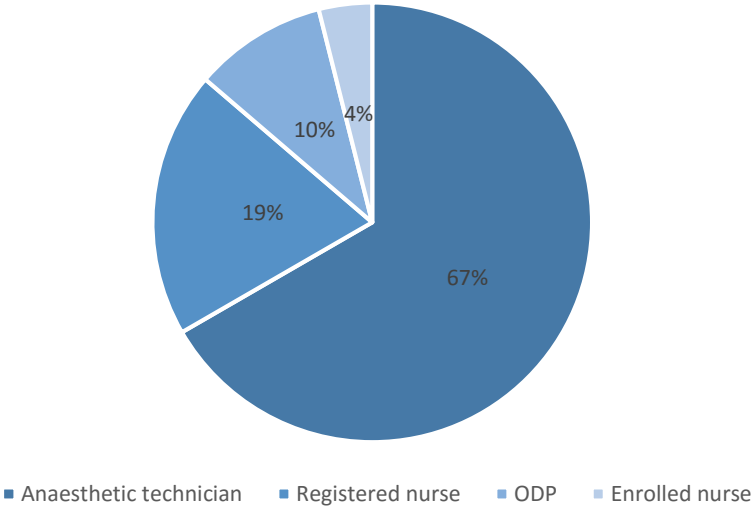
4. Did you receive education regarding the risks of propofol abuse/misuse during your training?



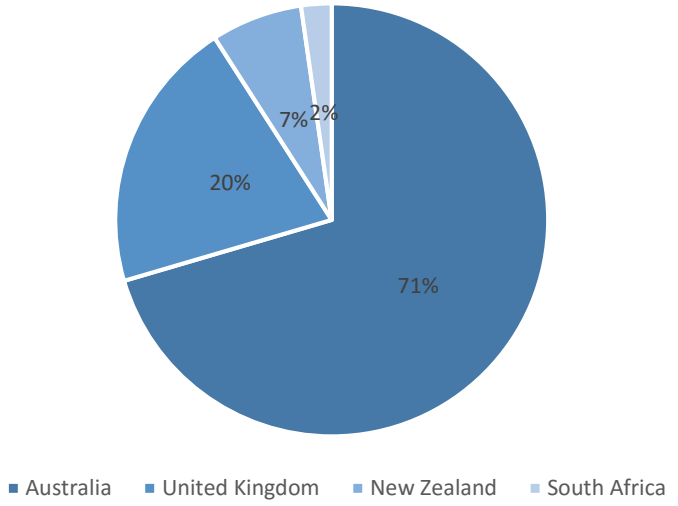
5. Have you received education regarding propofol abuse/misuse since qualifying?



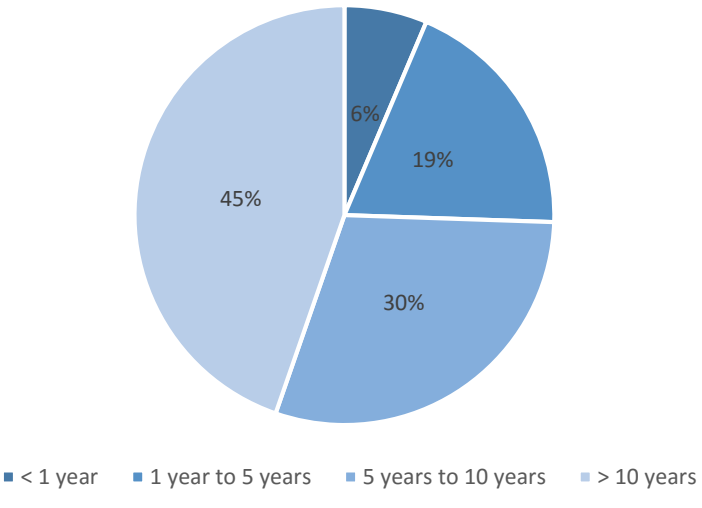
6. What is your qualification?



7. What country were you trained in?



8. How long have you been working in anaesthetics?



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