

An Examination of Factors Associated with Tobacco Smoking Amongst Patients Presenting  
with Deliberate Self-Poisoning.

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### **Declarations**

This thesis contains no material which has been accepted for the award of any other degree or diploma in any university or other tertiary institution and, to the best of my knowledge and belief, contains no material previously published or written by another person, except where due reference has been made in the text. I give consent to this copy of my thesis, when deposited in the University Library\*\*, being made available for loan and photocopying subject to the provisions of the Copyright Act 1968. \*\*

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### **Acknowledgment of Authorship**

I hereby certify that the work embodied in this thesis contains a manuscript of which I am a joint author. I have included as part of the thesis a written statement, endorsed by my supervisor, attesting to my contribution to the joint manuscript:

I, Edward Murray, attest that I was primarily responsible for the review of literature and the writing of the literature review, data analysis, and writing of the manuscript contained within this thesis. My work was forwarded to supervisors Billie Bonevski, Geoff Isbister, Sean Halpin and researcher Sam McCrabb for review, and amendments were made based on their feedback. I am the primary author of the work contained herein.

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The conduct of this report was approved by the Hunter New England Human Research Ethics Committee. Approval number: 15/02/18/5.04.

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### **Structured Abstract**

#### **Scope**

This thesis comprises firstly of a critical literature review exploring the relationship between tobacco use, suicide, self-harm, mental illness, and substance use. Secondly a manuscript of the current study is presented.

A clear relationship exists between tobacco use and suicide/self-harm (Hughes, 2008). Tobacco smoking and suicide share numerous risk factors across various domains. Demographic factors include: age, sex, substance use, education, income, location and marital status. Elevated rates of tobacco smoking are found among people with mental health diagnoses such as depression, anxiety, bipolar affective disorder, schizophrenia, post-traumatic stress disorder, and substance use disorders (Bonhert et al., 2014). Physical illness is also a common risk factor between tobacco smoking and suicide (Hughes, 2008).

Several theories have been proposed to explain the association between tobacco smoking and suicide/self-harm behaviour. It has been proposed that smoking is a non-causal marker for suicide (Hughes, 2008). It has also been proposed that smoking tobacco can increase the risk of suicide as it is a physical toxin (Hughes, 2008). The self-medication hypothesis which states those with a mental illness smoke to ease mental health symptoms has also been proposed as a possible explanation for the higher rates of suicide and self-harm among smokers (Peckham, Bradshaw, Brabyn, Knowles, & Gilbody, 2015).

Alcohol use has consistently been associated with tobacco smoking (Twyman et al., 2016). Smoking rates are remaining stable in those presenting with alcohol use disorders while smoking rates are reducing in the general population (Hufnagel, Frick, Ridinger, & Wodarz, 2017). Alcohol addiction and abuse has also been correlated with suicide and self-harm (Hawton, 2012).

## **Purpose**

The purpose of this study was to explore the relationship between tobacco use with mental health diagnoses and alcohol dependency in a sample of overdose admissions.

## **Methodology**

This study was a secondary analysis of an existing health service data base. Prospectively collected data from 1997-2013 of 7,133 patients over the age of 18 years admitted to the Hunter Area Toxicology Service (HATS) for deliberate self-poisonings was investigated. A structured preformatted data collection form was used on admission by HATS to prospectively capture information on patient demographics (age, sex, postcode), drugs ingested (including doses), regular medications, use of drugs of abuse and management, and complications of poisoning. The Department of Consultation Liaison Psychiatry offered assessment for all deliberate self-poisoning patients. A weekly review of all cases and final psychiatric diagnoses were determined at the HATS multidisciplinary meeting. (Carter, Safranko, Whyte, & Bryant, 2006). Individual diagnoses were mapped onto the Diagnostic and Statistical Manual of Mental Disorders, 4th Edition (DSM-IV; American Psychiatric Association, 1994).

Of the existing data within the HATS database, the current study included: tobacco smoking status, psychiatric illness, substance use, repeat admission, sociodemographic variables (age, sex, marital status) and ethnicity. The data was analysed utilising a multiple logistic regression model.

## **Results**

Within a deliberate self-poisoning population, those diagnosed with: an amphetamine substance use disorder (OR = 1.84, CI = 1.41, 2.41,  $p < .001$ ), alcohol use disorder (OR = 1.68, CI = 1.49, 1.88,  $p < .001$ ), other substance use disorder (OR = 1.77, CI = 1.38, 2.28,  $p < .001$ ), psychotic diagnoses (OR = 1.17, CI = 1.01, 1.35,  $p = .032$ ), or had a history of self-

harm (OR = 1.15, CI = 1.03, 1.28,  $p = .011$ ) were more likely to smoke tobacco. Those who were older (OR = 0.99, CI, 0.986, 0.994,  $p < .001$ ) or diagnosed with a mood disorder (OR = 0.87, CI = 0.78, 0.98,  $p = .018$ ) were less likely to smoke tobacco.

### **General Conclusions and Implications**

The implications of concurrent tobacco smoking and self-harm are serious. Having a better understanding of this relationship will allow for targeted interventions. Our study found that those who were younger, diagnosed with an amphetamine use disorder, alcohol use disorder, other substance use disorder, or psychotic disorders were more likely to smoke tobacco. Smoking interventions that target these populations are required. Unexpectedly those with a mood disorder were less likely to smoke tobacco. Further research is required to understand the underlying mechanisms between the association between tobacco, smoking and suicide and self-harm.