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Factors associated with Quitline and pharmacotherapy utilisation among low-socioeconomic status smokers

Veronica C. Boland[a,*], Richard P. Mattick[a], Mohammad Siahpush[b], Daniel Barker[c], Christopher M. Doran[d], Kristy A. Martire[e], Billie Bonevski[c], Hayden McRobbie[f], Ron Borland[g], Michael Farrell[a], Robert West[h], Ryan J. Courtney[a]

[a] University of New South Wales (UNSW), National Drug and Alcohol Research Centre (NDARC), 22-32 King Street, Randwick, New South Wales 2031, Australia
[b] Department of Health Promotion, Social and Behavioral Health, University of Nebraska Medical Center, Omaha, NE, USA
[c] School of Medicine & Public Health, University of Newcastle, Newcastle, Australia
[d] Centre for Indigenous Health Equity Research, Central Queensland University, 160 Ann Street, Brisbane, Queensland 4000, Australia
[e] School of Psychology, The University of New South Wales, Sydney, Australia
[f] Wolfson Institute of Preventive Medicine, Queen Mary University of London, EC1M 6BQ, London, UK
[g] Centre for Behavioural Research in Cancer, Cancer Council Victoria, Melbourne, Australia
[h] Health Behaviour Research Centre, Department of Epidemiology and Public Health, University College London, United Kingdom

HIGHLIGHTS

- This study presents a world first evaluation of cessation treatment utilisation among community-based treatment-seeking low-SES smokers.
- Smokers with a mental health condition are less likely to have ever called the Quitline.
- Smokers who were unemployed were significantly less likely to have ever utilised pharmacotherapy treatments.
- Smokers reporting alcohol consumption at hazardous levels are less likely to have used NRT in the last 12-months.
- Smoking induced deprivation was associated with increased odds of using dual NRT products.

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ABSTRACT

Aims: To examine factors associated with Quitline and pharmacotherapy utilisation in low socioeconomic status (low-SES) smokers enrolled in a smoking cessation trial.
Methods: Baseline data was used from a large-scale smoking cessation randomised controlled trial (RCT). Logistic regression models were used to examine predictors of treatment utilisation prior to entering the RCT and perceived effectiveness of past and future use.
Results: A total of 1047 smokers consented and prior to enrolment 92% had previously tried to quit smoking, 86% had ever used quit support, 83% had used pharmacotherapy at least once and 38% had ever utilised Quitline. For those who had used pharmacotherapies, 71% used NRT, of which 21% had used dual NRT products. In the last 12-months, 27% utilised Quitline and 50% utilised NRT. Ever use of Quitline was negatively associated with self-efficacy to quit (OR: 0.80; 95% CI: 0.68, 0.94 $p < .01$) and positively associated with being diagnosed with a mental health condition (OR: 1.50; 95% CI: 1.01, 2.25 $p < .05$). Recent use of NRT was positively associated with mental health condition (OR: 1.39; 95% CI: 1.02, 1.90 $p < .05$) and negatively associated with alcohol consumption (OR: 0.69; 95% CI: 0.52, 0.92 $p < .01$).
Conclusion: Past use of Quitline and pharmacotherapy treatment was associated with self-efficacy to quit, sociodemographic variables, mental health conditions and alcohol consumption. Community-based strategies that target smoking, mental health and drug and alcohol problems may overcome some of the barriers that prevent low-SES populations from engaging with smoking cessation support.

* Corresponding author at: UNSW, NDARC, 22-32 King Street, Randwick 2031, Australia.
E-mail address: v.boland@unsw.edu.au (V.C. Boland).

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1. Introduction

Tobacco smoking remains the leading cause of preventable morbidity and premature death (Centers for Disease Control and Prevention, 2017). Although tobacco smoking rates have declined in high-income nations (Ng et al., 2014) rates are disproportionately higher among low-socioeconomic status (low-SES) populations (Brown et al., 2014; Hiscock et al., 2012). In the US, 26% of adults living below the poverty line are current smokers, and smoking rates are as high as 41% among those reporting serious psychological distress (Prevention, C.F.D.C.A, 2016; Hitchman et al., 2017). Australian data show persons from disadvantaged areas are more likely to smoke daily (20%) compared to those from the most advantaged areas (7%) (Australian Institute of Health and Welfare, n.d.).

Engaging in evidence-based treatment is recommended for all current smokers, but low-SES smokers are less likely to use these treatments compared to the general population of smokers (Hiscock et al., 2011). Evidenced-based treatment includes combined behavioural support and pharmacotherapy treatment. Despite the availability of population-level smoking cessation treatment and support, utilisation is sub-optimal (Clare et al., 2014). Treatment services such as the Quitline provide telephone-based smoking cessation counselling and behavioural support but mainly rely on proactive callers for recruitment (Piné-Abata et al., 2013) and while pharmacotherapies are effective they are unaffordable to low-SES smokers (Wilson et al., 2016). An Australian study assessing the use of smoking cessation aids at a population level found 3% of the sample called Quitline and 15% used NRT within the last 12 months (Clare et al., 2014). In the United States, the overall reach for state Quitlines in 2015 was reported to be as low as 0.90% with treatment reach among low-SES smokers even lower at 0.68% (North American Quitline Consortium, 2016). Further population level findings reflect these trends of poor treatment utilisation (Kotz et al., 2009).

Despite the efficacy of behavioural support and pharmacological treatment for smoking cessation, low-SES smokers are less likely to engage with and adhere to treatment (Hiscock et al., 2012). Premature discontinuation of behavioural support is linked to relapse, poor self-efficacy to quit, life stress, and reduced motivation to quit (Hiscock et al., 2012; Hiscock et al., 2011) and factors that contribute to low-SES smokers' low uptake of pharmacotherapies include poor access and misperceptions about effectiveness (Balmford et al., 2011; Shahab et al., 2014). Among smokers with mental health or substance use disorders, smoking cessation and substance use treatment initiation and engagement are impacted by substance use dependency, psychiatric symptoms, motivation and self-efficacy to quit, emotional distress, social support, and perceived effectiveness of smoking cessation treatments (Aschbrenner et al., 2015; Hom et al., 2015; Shim et al., 2017; Ibabe et al., 2014). Barriers to smoking cessation include economic instability, neighbourhood disadvantage and social context of smoking, parental and peer exposure, heavier nicotine dependence, financial stress, lack of social support for quitting, and poor treatment adherence (Hiscock et al., 2012; Cancer Council Victoria, 2013; Paul et al., 2010; Raupach et al., 2014; Kale et al., 2015). These factors may promote or prevent treatment utilisation among low-SES smokers who want to quit smoking, but further research is required to assess whether they are barriers to treatment utilisation.

While most of the data on Quitline and pharmacotherapy utilisation among low-SES smokers is derived from general population surveys, clinical trials offer the unique opportunity to explore patterns of use. Gaining a better understanding of the factors that drive treatment utilisation among "hard-to-reach" (Bonevski et al., 2014) low-SES smokers is needed to guide future targeted and tailored approaches aimed at improving treatment outcomes. While ever use captures a broader definition of treatment utilisation, assessing recent use captures treatment utilisation in a specified time period and may overcome recall bias (Althubaiti, 2016). However, it is not known if the factors associated with ever use are the same as recent use and these factors are important when designing and implementing strategies to increase uptake and reach of smoking cessation treatments and services.

This study uses data from the largest Australian community-based clinical trial offering free nicotine replacement therapy (NRT) and quit support ($n = 1047$) to examine utilisation of Quitline and pharmacotherapy treatment prior to study enrolment. Five categories of predictor variables were examined based on prior research (Vangeli et al., 2011; Martinez et al., 2010) (smoking related behaviours; sociodemographic characteristics; recruitment source; substance use or addiction; and psychosocial wellbeing) and associations of these predictor variables with prior treatment utilisation of Quitline or pharmacotherapy and recent utilisation (last 12 months) of either Quitline or NRT were evaluated.

2. Methods

2.1. Design and setting

Secondary analyses were conducted on the baseline data ($n = 1047$) of a two-group randomised controlled trial (RCT) aimed at testing the efficacy of a Financial Education and Support Program (FESP) with free NRT and Quitline support versus standard care control. The full trial protocol (Courtney et al., 2014) is available elsewhere and the trial was registered with the Australian and New Zealand Clinical Trials Registry (ACTRN12612000725864). Participants who had previously tried to quit smoking ($n = 968$) were included in analyses.

2.2. Participants

All participants provided verbal informed consent. Ethics approval was provided by the University of New South Wales Human Research Ethics Committee. The CONSORT Flow Diagram is provided (See Supplementary Fig. 1). Study inclusion criteria included: in receipt of a social security benefit (measure of low-SES); aged 18 years or over; able to read and speak English; contactable by telephone; smoking at least 10 cigarettes per day; willing to make a quit attempt in the next month; willing to receive telephone-based support and comply with study procedures; not currently using medications for smoking cessation; able to provide informed consent. Following completion of a baseline computer assisted telephone interview (CATI) eligible participants were mailed an 8-week supply of free combination NRT comprising 21 mg/24-h nicotine patches plus either 2 mg gum or lozenges and referred to Quitline services.

2.3. Procedure

Recruitment took place between April 2013 and September 2014. Three recruitment sources were used: 1) Quitline services 2) Department of Human Services Centrelink Customer Service Centres posters; and 3) newspaper advertisements. Participants were randomised to one of two conditions: either usual care (NRT with support from a Quitline telephone counselling service) or intervention (FESP via telephone in addition to the NRT and Quitline support). Staff located at UNSW conducted FESP sessions and control check-in calls, further details reported elsewhere (Courtney et al., 2014). Randomisation and data collection were conducted by an independent contracted research organisation (CRO) via CATI. Participants were allocated to treatment condition following completion of the baseline CATI with CRO staff blind to allocation.

2.4. Measures

2.4.1. Prior treatment utilisation

The main outcome of interest was prior treatment utilisation of quit support ascertained at baseline CATI by asking participants "*prior to*