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Prevalence and correlates of smoking status among Veterans Affairs primary care patients with probable Major Depressive Disorder

Anayansi Lombardero [a,*], Duncan G. Campbell [a], Kari J. Harris [b], Edmund F. Chaney [c,d], Andrew B. Lanto [e], Lisa V. Rubenstein [e,f]

[a] Department of Psychology, The University of Montana, 32 Campus Drive, Missoula, MT 59812, United States
[b] School of Public and Community Health Sciences, The University of Montana, 32 Campus Drive, Missoula, MT 59812, United States
[c] VA Puget Sound Healthcare System, 1660 S Columbian Way, Seattle, WA 98108, United States
[d] University of Washington School of Medicine, Warren G. Magnuson Health Sciences Center, Box 356340, 1925 N.E. Pacific Street Seattle, WA 98195-6340, United States
[e] VA Greater Los Angeles Healthcare System, 11301 Wilshire Blvd #6005, Los Angeles, CA 90073, United States
[f] RAND Health Program, 1776 Main Street, P.O. Box 2138, Santa Monica, CA 90407, United States

HIGHLIGHTS

- We examine differences between depressed smokers and nonsmokers in VA primary care.
- Smoking prevalence is high among depressed primary care patients.
- Depressed smokers report more complicated psychosocial characteristics.
- These characteristics can complicate systems-level smoking cessation interventions.

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ABSTRACT

In an attempt to guide planning and optimize outcomes for population-specific smoking cessation efforts, the present study examined smoking prevalence and the demographic, clinical and psychosocial characteristics associated with smoking among a sample of Veterans Affairs primary care patients with probable major depression. Survey data were collected between 2003 and 2004 from 761 patients with probable major depression who attended one of 10 geographically dispersed VA primary care clinics. Current smoking prevalence was 39.8%. Relative to nonsmokers with probable major depression, bivariate comparisons revealed that current smokers had higher depression severity, drank more heavily, and were more likely to have comorbid PTSD. Smokers with probable major depression were also more likely than nonsmokers with probable major depression to have missed a health care appointment and to have missed medication doses in the previous 5 months. Smokers were more amenable than non-smokers to depression treatment and diagnosis, and they reported more frequent visits to a mental health specialist and less social support. Alcohol abuse and low levels of social support were significant concurrent predictors of smoking status in controlled multivariable logistic regression. In conclusion, smoking prevalence was high among primary care patients with probable major depression, and these smokers reported a range of psychiatric and psychosocial characteristics with potential to complicate systems-level smoking cessation interventions.

1. Introduction

Cigarette smoking is the leading preventable cause of morbidity and mortality in the US (Centers for Disease Control, Prevention [CDC], 2004). Roughly 45% of the 443,000 annual deaths attributed to smoking are accounted for by persons with mental illness and substance abuse disorders (Centers for Disease Control and Prevention, 2008a, 2008b; Mauer, 2006). Indeed, tobacco use is the most significant contributor to premature mortality among people with chronic mental illness, who tend to die an average of 25 years earlier (Schroeder & Morris, 2010) and are nearly twice as likely to smoke (41% versus 23%) as those in the general population (Lasser et al., 2000, Rohde, Lewinsohn, Brown, Gau, & Kahler, 2003). These statistics highlight the importance of examining factors with potential to maintain smoking behavior or frustrate attempts at quitting among individuals with mental health conditions who present for treatment in a variety of care settings. Research indicates that smoking status evinces a relationship with common clinical concerns in primary care (PC), including depression, posttraumatic stress disorder (PTSD), and alcohol abuse, and that

* Corresponding author. Tel.: +1 406 243 4521; fax: +1 406 243 6366.
E-mail address: anayansilombardero@gmail.com (A. Lombardero).

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these concerns are often accompanied and complicated by low social support and less than optimal care engagement (e.g., Hefner & Eisenberg, 2009; Vik et al., 2006). In order to promote the ultimate goal of reducing the public health burden associated with smoking among those with mental health conditions, the current study examined relationships among smoking status and varied mental health and psychosocial characteristics in a sample of Veterans Affairs (VA) PC patients with probable major depression.

1.1. Depression and suicidal ideation

Links exist between smoking and multiple mental health conditions, including depression and suicidality, PTSD, and alcohol abuse (Degenhardt & Hall, 2001; Fu et al., 2007; Kendler et al., 1993; Torabi, Bailey, & Jabbari, 1993; Wetzels, Kremers, Vitória, & de Vries, 2003). In the general population, for example, smokers are more likely to report symptoms of depression compared to nonsmokers (Kinnunen et al., 2006), and research among Veterans observes a positive association between smoking and depressive symptomatology and a negative association between depression and short-term smoking cessation treatment outcomes (Rausch, Nichinson, Lamke, & Matloff, 1990; Whitlock, Ferry, Burchette, & Abbey, 1995).

Thoughts about death and self-harm are prevalent symptoms among those with depression (Bryan & Corso, 2011; Gensichen, Teising, König, Gerlach, & Petersen, 2010; ten Have et al., 2009). Interestingly, the literature presents equivocal findings regarding the suicidal ideation–smoking relationship. Some studies indicate a positive association between suicidal ideation and smoking behavior (Almeida et al., 2012; Bronisch, Hofler, & Lieb, 2008; Goodwin et al., 2013). Smokers evidence increased risk for suicidal behavior (Hemmingsson & Kriebel, 2003; Iwasaki, Akechi, Uchitomi, & Tsugane, 2005; Moriya & Hashimoto, 2005; Riala, Alaraisanen, Taanila, Timonen, & Rasanen, 2007b), for example, and the risk associated with smoking may exist beyond risks conferred by other depressive experiences. In a study of current, former, and never smokers, Clarke et al. (2010) found that current smokers had an elevated risk for suicidal ideation, after accounting for general depression symptoms, anxiety, and substance abuse. In contrast, other studies regarding suicide and smoking have less robust smoking–suicidal ideation relationships. Kessler et al. (2007) noted that a link between smoking behavior and suicidal behaviors was reduced to nonsignificance when presence of DSM-IV psychological disorders was controlled. Similarly, Boden, Fergusson, & Horwood (2008) found that cigarette smoking frequency and suicidal ideation and attempts were not statistically significant when potential confounding factors were controlled.

At present, because no definitive causal model exists linking depression, its symptoms, and smoking, different researchers have proposed and tested different potential pathways (Ziedonis, Hitsman, Beckham, et al., 2008). For example, whereas some have argued that negative depressive affect is alleviated through smoking (Baker, Piper, McCarthy, Majeskie, & Fiore, 2004), others have maintained that smoking causes depression (Choi, Patten, Gillin, Kaplan, & Pierce, 1997; Klungsoyr, Nygard, Sorensen, & Sandanger, 2006; Steuber & Danner, 2006) or that smoking and depression influence each other in a reciprocal fashion (Breslau, Peterson, Schultz, Chilcoat, & Andreski, 1998; Brown, Lewinsohn, Seeley, & Wagner, 1996; Windle & Windle, 2001; Ziedonis et al., 2008). Recent research by Leventhal, Zvolensky, and Schmidt (2011) examined the role of dysphoria, an experience which has potential to contribute to smoking across a range of mental health conditions, including depression and anxiety. As described by Watson et al. (2007), dysphoria is a constellation of negatively-valenced experiences (e.g., sadness, worry, cognitive disturbance) that are present in but nonspecific to depression. Leventhal et al. found that dysphoria was the only significant predictor of smoking in a multiple regression model that included multiple depressive symptoms.

1.2. PTSD

Considering smoking and anxiety, links exist between PTSD, an anxiety disorder, and depression (Bryan & Corso, 2011; Cook, McFall, Calhoun, & Beckham, 2007; Thorndike, Wernicke, Pearlman, & Haaga, 2006) and between PTSD and smoking (Durai et al., 2011; Koenen et al., 2006). In the general population, PTSD is associated with decreased likelihood of quitting smoking (Lasser et al., 2000) and with a higher likelihood of smoking relapse after quitting (Zvolensky et al., 2008). Among Veterans in PTSD treatment settings, smoking rates exceed 50% (Beckham et al., 1997), and PTSD symptomatology demonstrates a positive association with smoking intensity (Cook, Jakupcak, Rosenheck, Fontana, & McFall, 2009).

As noted previously, multiple explanations exist for the causal links between depression and smoking. A similar case exists for the PTSD–smoking relationship. Mirroring the affective regulation role that smoking may play in depression, people may smoke to manage PTSD symptoms. In a study of help-seeking Veterans with PTSD, for example, Cook et al. found that heavy smoking varies with higher overall PTSD symptomatology. Because the relationship appeared to be driven by PTSD emotional numbing symptoms, Cook et al. speculated that smoking may represent a strategy to overcome PTSD-related emotional blunting. Considering the reverse causal pathway, van der Velden, Kleber, & Koenen (2008) found that smoking during the weeks shortly after trauma exposure predicted PTSD symptomatology 18 months later. Ultimately, like the relationship between smoking and depression, PTSD and smoking are clearly linked, and the link is likely to be bidirectional (Fu et al., 2007). Further research regarding the PTSD–smoking link is needed, particularly because, like depression, PTSD demonstrates independent associations with poor health (Ahmadi et al., 2011; Aversa et al., 2012; Durai et al., 2011) and increased mortality (Ahmadi et al., 2011).

1.3. Alcohol use

Many recent studies document associations between alcohol use and smoking (Falk, Yi, & Hiller-Sturmhofel, 2006; Harrison & McKee, 2011; McKee, Falba, O'Malley, Sindelar, & O'Connor, 2007; Zhang et al., 2012), alcohol use and depression (Bulloch, Lavorato, Williams, & Patten, 2012), and among all three (Carmody et al., 2012; Holt, Litt, & Cooney, 2012; Kodl et al., 2008). Indeed, the National Epidemiologic Survey on Alcoholism and Related Conditions (NESARC: Hasin, Goodwin, Stinson, & Grant, 2005) found that in the US, 40% of patients with Major Depressive Disorder had a lifetime diagnosis of an alcohol use disorder. Other research indicates that approximately 60% of those with an alcohol use disorder smoke cigarettes (Falk et al., 2006). Heavy drinking and smoking is a particularly problematic combination of health-demoting behaviors, one that confers greater risk than drinking or smoking alone for specific types of cancer and cardiovascular problems (Schlecht et al., 1999). For example, Castellsague et al. (1999) found that drinking and smoking jointly increased the esophageal cancer risk 12 to 19 fold compared to the same amounts of drinking alone or smoking alone.

Similar to the previous discussions regarding causal paths linking depression, PTSD, and smoking, multiple causal possibilities exist with alcohol use and smoking. These possibilities include evidence of genetic predispositions for both smoking and drinking (Zhang et al., 2012) as well as evidence that smoking predicts problematic alcohol use prospectively among young adults (Harrison & McKee, 2011). Given the elevated risk for hazardous alcohol use among smokers, smoking status has been suggested as a clinical indicator for alcohol use screening (McKee et al., 2007). As for the link between depression and alcohol use, some maintain that alcohol misuse increases the risk for depression (Boden & Ferguson, 2011), while others assert a bidirectional relationship (Bulloch et al., 2012). Regardless, alcohol consumption is a significant barrier to quitting smoking (Kahler et al., 2009), and major