Preventive Medicine 105 (2017) 332–336

Contents lists available at ScienceDirect

Preventive Medicine

journal homepage: www.elsevier.com/locate/ypmed

Offering smoking treatment to primary care patients in two Wisconsin healthcare systems: Who chooses smoking reduction versus cessation?

Angela Petersen[a,b,*], Robin Mermelstein[c], Kristin M. Berg[d], Timothy B. Baker[d], Stevens S. Smith[d], Doug Jorenby[d], Megan E. Piper[d], Tanya R. Schlam[d], Jessica W. Cook[d,e]

[a] VA San Diego Healthcare System, 8950 Villa La Jolla Dr. Ste B109, La Jolla, CA 92037, United States
[b] University of California, San Diego, La Jolla, CA 92093, United States
[c] University of Illinois at Chicago, Institute for Health Research and Policy, 544 Westside Research Office Bldg., 1747 West Roosevelt Rd., Chicago, IL 60608, United States
[d] Center for Tobacco Research and Intervention, Division of General Internal Medicine, Department of Medicine, School of Medicine and Public Health, University of Wisconsin-Madison, and William S. Middleton Memorial Veterans Hospital, Madison, WI 53792, United States
[e] William S. Middleton Memorial Veterans Hospital, 2500 Overlook Way, Madison, WI 53792, United States

ABSTRACT

Smokers unwilling to make a quit attempt can still benefit from smoking intervention. However, it is unclear what proportion of smokers will enter such a Motivation phase intervention, and whether such an intervention attracts different types of smokers than does abstinence oriented treatment. We conducted a study from June 2010 to October 2013 based on a chronic care model of tobacco treatment among study eligible primary care patients (N = 1579; 58% women, 89% White) presenting for regular health care visits in southern Wisconsin, U.S. Medical assistants, prompted via the electronic health record (EHR), invited smokers (n = 10,242) to learn more about treatment options to help them either reduce their smoking or quit. Of those invited to learn more who were then reached by study staff, 10.2% (n = 1046) reported interest in reduction treatment and 24% (n = 2465) reported interest in cessation treatment. Patients who selected and ultimately entered reduction (n = 492) versus cessation (n = 1087) were more likely to report: older age; a history of anxiety; lower motivation to quit; lower primary dependence motives; more close friends or family who smoke; and a greater interval since their last quit attempt. Results suggest that Motivation phase treatment aimed at smoking reduction may increase the proportion and range of smokers inducted into tobacco treatment.

Tobacco dependence is a chronic disease, and as such, typically requires repeated intervention over time (Adsit et al., 2014). The Phase-Based Model(Baker, 2017) identifies phases of the cessation process that offer different mixes of opportunities and challenges (e.g., the Motivation, Preparation, Cessation, and Maintenance phases). Most research has focused primarily on treating smokers who are already motivated to make aided quit attempts (i.e., who are in the Preparation and/or Cessation phases). However, at any point in time, the great majority of smokers are unwilling to make a quit attempt (Baker et al., 2011; Bolt et al., 2009; Bray et al., 2016; Burris et al., 2013; Campion et al., 2008; Centers for Disease Control and Prevention, 2011). Thus, most smokers leave health care visits without treatment for tobacco dependence (Centers for Disease Control and Prevention, 2011; Cook et al., 2012; Cook et al., 2016).

Although many smokers attending health care visits are unwilling to make an aided quit attempt, some are likely to be willing to reduce their smoking as part of a Motivation phase treatment strategy. Reduction could have several benefits. Smoking reduction treatment can increase rates of quit attempts, amount of smoking reduction, use of evidence-based cessation treatment, and attainment of long-term abstinence among those who initially decline cessation treatment (Adsit et al., 2014; Baker et al., 2011; IBM Corporation, 2013). In addition, the offer of Motivation phase treatment aimed at smoking reduction might increase the proportion of smokers inducted into treatment, and perhaps also increase the *breadth or range* of the smoking population inducted into treatment. That is, it might recruit smokers who are otherwise unlikely to enter evidence-based treatment; and it might serve those who would be underserved if only cessation treatment was offered. Thus, it is important to determine if the availability of reduction treatment appeals to types of smokers who typically avoid smoking cessation treatment. It is also important to determine if reduction treatment attracts types of smokers who tend to do poorly when only cessation treatment is offered. If so, reduction treatment may provide such smokers the additional preparation they need to be successful

* Corresponding author at: VA San Diego Healthcare System, 8950 Villa La Jolla Dr. Ste B109, La Jolla, CA 92037, United States.
E-mail address: aap048@ucsd.edu (A. Petersen).

http://dx.doi.org/10.1016/j.ypmed.2017.10.015
Received 12 April 2017; Received in revised form 3 October 2017; Accepted 4 October 2017
Available online 06 October 2017
0091-7435/ Published by Elsevier Inc.

when they do make quit attempts.

Cook et al. (Baker et al., 2011) recently conducted an experiment in which medical assistants were prompted by the electronic health record (EHR) to ask smokers presenting for primary health care visits if they were interested in receiving either smoking cessation treatment or treatment with a smoking reduction goal. Interested individuals were then electronically referred to study personnel for treatment screening and enrollment (see screening criteria in Methods). Reduction-goal treatment was described to patients as treatment that was intended to help them reduce their smoking. If participants selected and entered reduction-goal treatment, they entered a factorial experiment in which they were randomly assigned to one level of each of four treatment factors: nicotine patch vs. no patch, nicotine gum vs. no gum, behavioral (smoking) reduction counseling vs. no reduction counseling, and motivational interviewing vs. no motivational interviewing. Thus, the current research occurred within the effectiveness context; it recruited from among smokers in primary care and tabulated both those choosing a reduction treatment goal, and those choosing a cessation goal. This approach contrasts with much of the prior efficacy research on Motivation phase or reduction-goal treatment, which focused only on smokers volunteering for reduction-goal treatment (IBM Corporation, 2013). Such research does not allow one to determine the proportion of the smoker population that chooses entry into each type of smoking treatment. The present study, on the other hand, allows us to examine the extent to which the availability of reduction-goal treatment may have increased the proportion of smokers who entered evidence-based treatment, as well as whether this treatment option attracted different types of smokers than did cessation treatment.

The Cook et al. (Baker et al., 2011) report showed that both smoking reduction counseling and nicotine gum use tended to produce positive effects on smoking reduction and ultimately, cessation. The present research uses data from the Cook et al.,(Baker et al., 2011) experiment to address the question of whether the availability of a reduction-goal treatment attracted different types of smokers than did cessation treatment. If it did so, then offering such treatment should be an effective strategy for engaging and treating a broader range of smokers who would be underserved if only cessation treatment were available.

1. Methods

1.1. Procedure

This is a secondary data analysis of smokers who participated in three factorial screening experiments that assessed the effectiveness of intervention components aimed at either smoking reduction or cessation goals (Baker et al., 2011; Cunningham et al., 2016; Etter et al., 2004). Participants (N = 1579; 58% women, 88% White) (Fiore et al., 2008) were recruited from June 2010 through October 2013 during regular primary care clinic visits at 11 primary care clinics located in southern Wisconsin, U.S., with clinics from two different healthcare systems. Smokers who were identified via a pre-existing EHR tobacco assessment were invited by medical assistants to participate in a research program to help them either quit or reduce their smoking. Interested patients were electronically referred to the research office.

Upon initial phone contact with a referred smoker, study assignment to either reduction or to cessation treatment was completed by stating, “Our research program has two tracks – one for smokers who are ready to quit in the next month and one for smokers who want to cut down on their smoking. Which track would you be interested in?” (This study included only participants who were simultaneously presented reduction or cessation treatment options [n = 1579). It did not include the initial 120 participants who enrolled in the study and were asked “Would you like to try to quit smoking in the next 30 days”; if these initial participants said no, only then were they offered reduction treatment. Therefore, they were not included in the present analysis sample.) Once potential participants selected and entered either cessation or reduction, they were informed of the treatments and study requirements. Interested candidates were assessed for eligibility. The inclusion criteria were: ≥ 18 years old; ≥ 5 cigarettes/day for the previous 6 months; no interest in quitting in the next 30 days but willing to cut down (for the reduction treatment only); interested in quitting in the next 30 days (for the cessation treatment only); able to read, write, and speak English; agreeing to complete assessments; planning to remain in the area for at least 6 months; not currently taking bupropion or varenicline; agreeing to use only study smoking medication during the study if reporting current cessation medication use; no medical contraindications to using nicotine replacement therapy; and, for women of childbearing potential, agreeing to use an approved birth control method. Individuals were excluded from the experiment if they did not meet these criteria.

1.2. Assessments

After providing informed consent for either cessation or reduction treatment, participants completed baseline assessments. The baseline characteristics analyzed for this study include: demographics (gender, race, education); self-reported history of being diagnosed with and/or treated for anxiety or depression; alcohol frequency and quantity; smoking history (time since most recent quit attempt, number of serious quit attempts, cigarettes smoked per day, home smoking ban, number of close friends or family who smoke); motivation to quit (“How motivated are you to quit smoking [1-10 scale]”); and tobacco dependence (Fagerström Test of Nicotine Dependence [FTND](Fiore et al., 2008); Wisconsin Inventory of Smoking Dependence Motives [WISDM](Garvey et al., 1992)). The WISDM comprises two broad dimensions: Primary Dependence Motives (PDM; core dependence marked by tolerance, craving) and Secondary Dependence Motives (SDM; smoking for instrumental reasons or when exposed to smoking cues) (Heatherton et al., 1991). In addition, the ratio of the PDM score to the SDM score (PDS/SDM ratio) was used to assess the relative dominance of primary versus secondary dependence motives within smokers. Finally, alcohol use frequency patterns were classified as: frequent (daily to 3 times/week), occasional (2 times/week to 3 times/year), or never/rare (1 time/year or never). Alcohol quantity patterns were classified as: heavy (7–25 drinks per occasion), moderate (3–6 drinks per occasion), or light/none (0–2 drinks per occasion).

1.3. Analytic plan

Analyses were conducted using SPSS (Hitchman et al., 2014). First, we examined the proportion of smokers who expressed interest during the initial phone contact with study staff in learning more about reduction-goal versus cessation treatment (out of all smokers who were invited to learn about smoking treatment options at a healthcare visit). Next, we used univariate logistic regression analysis to identify variables that were significantly associated with treatment entry (quitting [0] vs. reduction (Fiore et al., 2008)). Multivariable logistic regression analysis was used to identify a best-fitting model predicting treatment selection. Using a classical model building procedure, all univariate predictors with a $p < 0.25$ were initially included in the model, then non-significant terms were removed from the model via backward elimination and the model was re-fit to determine the best fitting model (Hosmer and Lemeshow, 2000).

2. Results

Of those who were asked by clinic staff during a health care clinic visit whether they would like to learn more about smoking treatment options (n = 10,242), 10.2% (n = 1046) chose to learn about reduction-goal treatment when they were contacted by study staff, whereas 24.1% (n = 2465) chose to learn about cessation treatment when contacted by study staff. Of the 1046 interested in reduction-goal