



A systematic review and meta-evaluation of adolescent smoking cessation interventions that utilized nicotine replacement therapy



Jessica L. King ^{a,*}, Jamie L. Pomeranz ^a, Julie W. Merten ^b

^a Department of Behavioral Science and Community Health, PO Box 100175, Gainesville, FL 32610, United States

^b Department of Public Health, 1 UNF Drive, Jacksonville, FL 32224, United States

HIGHLIGHTS

- We review 8 studies testing the effectiveness of over the counter NRT for adolescents.
- All studies were rated moderately high or high quality.
- Areas for methodological improvement include sample size and representativeness.

ARTICLE INFO

Article history:

Received 24 February 2015

Received in revised form 6 July 2015

Accepted 21 August 2015

Available online 1 September 2015

Keywords:

Nicotine replacement therapy

Smoking cessation

Tobacco use

Adolescents

Contents

1. Introduction	40
2. Method	40
3. Results	41
3.1. Intervention characteristics	43
3.2. Quality ratings	43
4. Discussion	43
5. Conclusions	44
Funding	44
Declaration of interests	44
Role of funding sources	44
Contributors	44
Conflict of interest	44
Acknowledgments	44
References	44

* Corresponding author.
E-mail address: jessking@ufl.edu (J.L. King).

1. Introduction

Smoking remains the leading preventable cause of disease and death, both in the United States (US) and worldwide (US National Center for Chronic Disease Prevention and Health Promotion, 2014). Despite decades of tobacco prevention initiatives, youth continue to initiate smoking. Adolescents try smoking for a number of reasons including familial influence, peer influence, weight control, curiosity, advertising, media, and movies (Dalton, Sargent, Beach, et al., 2003). Adolescence remains the period for smoking uptake, with 80% of smokers beginning before age 18 and 99% beginning before age 26 (US National Center for Chronic Disease Prevention and Health Promotion, 2012). Adolescents typically are more sporadic in their smoking patterns than adults with teens often smoking only on the weekends or a few times a week. Despite this, a handful of studies identified dependence among youth. DiFranza, Savageau, Fletcher, et al. (2007) found that among sixth-grade students, 10% lost autonomy over smoking within two days of initiation, and over half had lost control by the time they were smoking seven cigarettes per month. Similarly, O'Loughlin, DiFranza, Tyndale, et al. (2003) research challenged the long-held belief that dependence develops over years of daily smoking. These authors found that among seventh-graders, 65.9% of weekly and daily smokers were tobacco-dependent. These findings provide support for the finding that nicotine contained within tobacco products is highly addictive, more so among adolescents whose brains are still developing (US National Center for Chronic Disease Prevention and Health Promotion, 2012).

Because the effects of smoking generally occur later in life, adolescents may have a low perceived susceptibility to harm. However, research indicates that bodily harm can occur even with minimal smoking among adolescents (US National Center for Chronic Disease Prevention and Health Promotion, 2012). Additionally, adolescents often believe that they will not become addicted and will be able to quit at any time. In a study among 580 smokers between 14 and 17 years old, (Hollis, Polen, Lichtenstein, & Whitlock, 2003) found that 77% of current smokers had made a serious quit attempt in the previous year. However, Engels, Knibbe, de Vries, and Drop (1998) and (Zhu, Sun, Billings, Choi, and Malarcher (1999) reported that only about 4% of smokers between ages 12 and 19 successfully quit smoking each year.

To our knowledge, no best practice for helping adolescents quit smoking exists. Nicotine Replacement Therapy (NRT) is widely recommended for adult cessation as these medications can improve the odds of successfully quitting by 50% (Robles, Singh-Franco, & Ghin, 2008; Stead, Perera, Bullen, Mant, & Lancaster, 2008). NRTs are available in the forms of gum, inhaler, nasal spray, transdermal patch, and tablet/lozenge, all of which have been proven to increase tobacco abstinence rates. Although NRT has been found safe for adolescent use, such therapy is not yet recommended for this population (Fiore, 2008). According to CDC's clinical practice guideline (Fiore, 2008), evidence on the effectiveness of NRT to widely recommend its use is lacking. However, since the time of the previous review, additional trials have been conducted.

Systematic reviews have assessed the effectiveness of NRT for adolescent cessation. In assessing pharmacological and behavioral interventions for adolescent cessation, Schepis and Rao (2008) identified seven pharmacological studies. In their assessment of both NRT and bupropion, they found that NRT alone was not enough for adolescents to maintain smoking abstinence. Kim, Myung, Jeon, et al. (2011) conducted a meta-analysis of six randomized controlled trials to evaluate the effectiveness of NRT for adolescent cessation. In addition to the meta-analysis, Kim et al. (2011) assessed study design quality using the Jadad scale, a five-point measure on randomization, double blinding, masking, and follow-up reporting. However, they found no significant increase in abstinence in short-term cessation or follow-up (Kim et al., 2011). Finally, Bailey et al. (2012) systematically reviewed the efficacy of pharmacotherapy studies, including 13 studies on the nicotine

patch, gum, spray, or bupropion, and found none of the treatments to be efficacious long-term. In contrast to these reviews, in this analysis, only studies that included over-the-counter NRT were reviewed. Access to cessation resources such as bupropion, varenicline, nicotine nasal spray, or nicotine inhalers requires a prescription. Alternatively, the nicotine patch, nicotine gum, and nicotine lozenge are readily available. It is important to note that despite NRT being restricted within the US to individuals over the age of 17, tobacco itself bears an age limit. Additionally, studies have shown that adolescents do have access to and use these materials for personal use (Johnson, Klesges, Simes, Coday, & DeBon, 2004; Klesges, Johnson, Simes, Zbikowski, & Robinson, 2003). When considering real word use, access is important. It is likely over-the-counter NRT even if restricted, are more readily available to adolescents who might be interested in quitting smoking.

As the literature expands, a critical review of completed intervention studies is essential to improve the health education science and practice base in adolescent smoking cessation. While previous reviews have analyzed and compared the results of previous studies, they have been limited in their evaluations of the actual interventions. Therefore, a meta-evaluation is included as part of this review. A meta-evaluation is defined as "the systematic review of experimental or quasi-experimental research using a standardized set of methodological criteria to assess the degree of internal validity – efficacy or effectiveness – of evaluations of health education intervention methods" (Windsor, 2003).

Specifically, these authors' papers sought to address three questions: (1) what can be determined about the overall quality of smoking cessation interventions using NRT for adolescents? (2) On which methodological quality aspects do the interventions excel? (3) Where does the greatest opportunities for improvement lie? Additionally, data regarding NRT compliance and safety were reviewed.

2. Method

The authors conducted a systematic review and meta-evaluation to evaluate the methodological quality of interventions using NRT for adolescent smoking cessation. A systematic review was selected as it provides a systematic way to search for, appraise, and synthesize what remains unknown as well as recommendations for practice (Grant & Booth, 2009). This review was conducted using the matrix method (Garrard, 2010), originally designed for reviews of health science literature. This structure and process for systematic reviews consists of abstracting data from individual articles, organizing the data into a matrix, and interpreting patterns among the findings.

Methodological quality was assessed using five criteria suggested by Windsor (2003): (1) type of intervention design; (2) sample size and sample representativeness; (3) specification of population characteristics; (4) measurement validity and reliability; and (5) appropriateness and replicability of intervention methods (Table 1). Criterion 1, research design, refers to whether the intervention was a true randomized controlled trial or a non-experimental study and considers equivalence of groups at baseline. Criterion 2 contains both representativeness, including an assessment of inclusion/exclusion criteria, and an assessment of sample size/power estimate. Criterion 3 assesses the reporting of population characteristics while Criterion 4 rates the quality of measurement used, in this case for smoking cessation. Criterion 5 contains both appropriateness and replicability of the intervention. These criteria were used to evaluate the methodological quality of NRT interventions for adolescent smoking cessation. Ratings were applied to the quality of research, based on reported information, for each of the five dimensions.

Literature was gathered from EBSCOhost, ERIC, ProQuest, and PubMed electronic databases. These databases were selected because they are known for either health or educational interventions. Each database was searched using the following string of terms to search within the abstract: (adolescents OR teens OR "young adults" OR students OR youth) AND (smoking OR cigarettes OR tobacco OR

Download English Version:

<https://daneshyari.com/en/article/898608>

Download Persian Version:

<https://daneshyari.com/article/898608>

[Daneshyari.com](https://daneshyari.com)