E-cigarettes: Effective Smoking Cessation Aids?
Casey Lawrence, BSN Student

Introduction

E-cigarettes
• Battery-powered devices that deliver a low concentration of nicotine without exposing users to tobacco smoke
  • When users inhale, liquid heats up to create a visible vapor, without smoke or flames
  • Liquid mixture is primarily composed of propylene glycol and/or glycerol
  • Liquid may also include flavorings (e.g. chocolate, vanilla)

Exclusion Criteria
• After introduction to the U.S. in 2007, use among adults has greatly increased (Tseng et al., 2016)

Inclusion Criteria
• Most reported reason for use: smoking cessation (Harrell et al., 2014)
• Not FDA approved as cessation devices
• Will be subject to FDA regulation starting August 2016

Purpose

To review current literature to determine whether or not e-cigarettes are a safe and effective tool for promoting smoking cessation among adult tobacco smokers

Methods

Databases
• PubMed, Cochrane Library, Joanna Briggs Institute Library, PsycNET, Ovid Medline

Keywords
• E-cigarettes, electronic cigarettes, smoking cessation, smokers, safe

Inclusion criteria
• Current tobacco smokers, adults, meta-analyses, systematic reviews, randomized controlled trials, articles published within the past 10 years, articles published in English

Exclusion criteria
• Subjects with illnesses/diseases/cancer, hospitalized patients

Results

Focus of Articles

Safety
• E-cigarettes are of unknown safety due to lack of FDA regulation (prior to August 2016) (Harrell et al., 2014; Bhatnagar et al., 2014)
  • Although they contain toxic chemicals, compared to conventional cigarettes, e-cigarettes are much lower in toxic content, cytotoxicity, adverse effects, and secondhand toxicity exposure (Harrell et al., 2014)
  • E-cigarettes are associated with few adverse events (Bullen et al., 2013)

Effectiveness
• To date, there are no published studies evaluating the long-term health effects of e-cigarettes (Mcgraw, 2014)

Safety & Effectiveness

Conclusions

E-cigarettes
• Efficacy as a smoking cessation aid has not been established

• Not proven to be better than other cessation methods

• Largest RCT to date found that e-cigarettes were modestly effective at helping smokers quit, with or without nicotine (Bhatnagar et al., 2014)

• Much less harmful alternative to smoking cigarettes

• More large, controlled clinical trials are needed to assess safety and effectiveness as a smoking cessation aid

• Not yet enough evidence for clinicians to counsel patients to use e-cigarettes as a primary cessation aid (Bhatnagar et al., 2014)

• E-cigarette use should be included in tobacco screening questions

• If a patient has failed initial treatment, or has been intolerant to or refused to use a conventional smoking cessation medication, it is reasonable for a clinician to support their request to use e-cigarettes (Bhatnagar et al., 2014)

• Clinicians should remind patients that e-cigarettes are unregulated (prior to August 2016), have not been proven as cessation devices, and may contain toxic chemicals (Bhatnagar et al., 2014)

• No evidence that e-cigarettes are counterproductive for smoking abstinence (Khoudigian et al., 2016)

• E-cigarettes have the potential to improve population health since they have far greater reach and higher acceptability among smokers than nicotine replacement therapy (Bullen et al., 2013)