ABSTRACT

Introduction  People with disabilities have a higher prevalence of cigarette smoking than people without disabilities. However, little information exists on smoking cessation interventions tailored to address the unique needs of people with disabilities. This paper describes a systematic review protocol to identify and evaluate tobacco smoking cessation interventions designed to improve outcomes for people with disabilities.

Methods and analysis  We will conduct a systematic review of the literature using the procedures outlined by Cochrane. We will search four electronic databases (CINAHL Plus (EBSCO), Embase (Ovid), Medline (Ovid) and PsycINFO (Ovid)) with no date restriction to identify tobacco cessation interventions tailored to meet the needs of people with disabilities. We will extract data and assess risk of bias using the RoB2 and ROBINS-I for included studies using Covidence systematic review software. Quantitative and qualitative syntheses will summarise key study characteristics and outcomes with text, tables and forest plots; a meta-analysis will be conducted, if appropriate.

Ethics and dissemination  Ethical approval is not required as there are no primary data associated with the study. Data will be disseminated through a peer-reviewed articles and conference presentations.

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INTRODUCTION

Cigarette smoking has decreased over the past decade; however, smoking continues to be the leading cause of preventable disease and death in the USA.\(^1\) Disability is defined by the interaction between someone’s health condition and personal and environmental factors that limit community participation and functioning.\(^2\) Adults with disabilities (ie, people who self-report limitations in domains including cognition, daily living, hearing, mobility or vision) have a higher prevalence of current cigarette use (23.3% vs 16.7%) and nicotine dependence (14.6% vs 8.0%) compared with those without a disability,\(^3\) as well as a greater odds of current cigarette, pipe and smokeless tobacco users than adults without disabilities (adjusted odds ratio [AOR]=1.32, 1.85, 1.57, respectively).\(^4\) Additionally, US adults with a cognitive (AOR=0.79), independent living (AOR=0.84), self-care (AOR=0.81) or vision disability (AOR=0.78) have a lower odds of former smoking.\(^5\) Quitting tobacco use can increase life expectancy\(^6\) and is critical to improve health, especially for people with disabilities as this population has higher rates of various chronic disease (eg, diabetes, asthma, stroke).\(^7\) Additionally, quitting cigarettes can result in improvements in mental and general health in people with disabilities.\(^7\)

Although there are many smoking cessation interventions (eg, nicotine replacement therapy, counselling, text message programmes, contingency management), few studies have specifically examined the effects of these interventions on people with disabilities. Previous reviews on smoking cessation indicate that a combination of behavioural support and pharmacotherapy can increase the likelihood of quitting smoking in adult tobacco users.\(^8\) Additional reviews investigating cessation interventions tailored to specific populations have included people with severe mental illness,\(^9-11\) people with chronic disease,\(^12\) people with medical conditions,\(^13,14\) people with substance use disorders,\(^15\) adolescents,\(^16\) young adults\(^17,18\) and people with mild or moderate intellectual
disabilities. However, no expansive review on tobacco cessation interventions has covered a range of disabilities rather than limiting to specific disability types.

Reviews of smoking cessation interventions for those with disabilities are especially important because current cessation strategies that do not consider the unique needs of people with disabilities could prove to be ineffective. For example, some interventions encourage strategies that do not accommodate the needs of people with various disabilities (eg, encouraging walks or deep breathing exercises) and fail to account for personal care attendants that also may smoke. Additionally, current tobacco cessation programmes may lack cultural competency and therefore be inappropriate for people with communication or linguistic barriers, including people who are deaf. It is possible that the inaccessibility of current cessation programmes extends to other disabilities (eg, cognitive, visual) if materials are not provided in plain language, in braille or accessible by screen reader. Finally, as compared with the general population, people with disabilities are more likely to encounter other barriers related to social determinants of health, including less access to health resources, less likely to work, live in poverty and experience discrimination, all factors that can influence their access to tobacco cessation interventions.

Due to the unique barriers encountered by individuals with disabilities, and the higher prevalence of cigarette use among this population, there is a need to identify interventions that have been tailored to people with various disabilities and examine if these interventions were successful in promoting smoking cessation. The purpose of this manuscript is to describe a protocol for a systematic literature review on tobacco cessation interventions for people with disabilities. The results of the review will be synthesised to identify and assess the evidence of available interventions for this population.

METHODS AND ANALYSIS

Design
A systematic review of empirical research will be conducted with the objective of (1) identifying tobacco cessation interventions for people with disabilities and (2) assessing the evidence of the interventions. Any amendments made to this protocol during the systematic review process will be documented during the dissemination of the results.

Eligibility criteria
Study design
Eligible studies will be behavioural or pharmacological interventions at the individual or group level. Studies will provide empirical data on tobacco cessation using a range of study designs, including randomised controlled trials, cluster-randomised controlled trials, quasi-experimental studies, single-subject design studies and cohort studies. Control conditions in studies will include no intervention; delayed intervention beginning after follow-up; treatment-as-usual; or general tobacco, smoking cessation, or health education provided to all participants. Other potential studies will be retrieved by reviewing the references of included articles and contacting experts. Qualitative studies, formative research without outcome data on smoking behaviour, interventions focusing on prevention rather than smoking cessation, and studies with no control or comparators will be excluded.

Participants
Participants in the studies must be aged 18 or above and living in the USA. Participants must be living with a disability (eg, cognitive, communication, hearing, independent living, intellectual/developmental, visual). Interventions focusing on tobacco cessation for people with psychiatric disabilities will be excluded as reviews on this population already exist. Additionally, interventions tailored towards people with primarily medical conditions or chronic conditions (eg, chronic obstructive pulmonary disease, acute coronary syndrome, HIV, rheumatoid arthritis) will be excluded as reviews exist on these populations as well. Studies will be limited to the USA due to varying healthcare contexts that may affect the interventions offered or access to tobacco cessation interventions (eg, through free national public healthcare).

Outcome measures
Eligible outcome measures include change in smoking behaviour (eg, cigarettes per day) and smoking cessation or abstinence. Examples of outcomes include 7-day point prevalence abstinence, self-reported quitting or biological measures (eg, exhaled carbon monoxide, cotinine). The primary outcome will be smoking status at 6 months follow-up in line with reporting recommendations. Secondary outcomes will include adverse outcomes (eg, psychological distress), social validity outcomes and quality of life outcomes. Studies must measure a change from baseline to follow-up in every study group. Secondary outcomes will include adverse outcomes (eg, psychological distress), social validity outcomes and quality of life outcomes.

Search methods
Similar terms to search for articles in CINAHL Plus (EBSCO), Embase (Ovid), Medline (Ovid) and PsycINFO (Ovid) were developed with a university librarian (GSA) and were applied with no date restriction (online supplemental table 1). The reference list of all full-text records assessed for eligibility will be screened, experts in the field will be contacted and conference abstracts (eg, Society for Research on Nicotine and Tobacco, American Public Health Association) from the January 2017 to December 2022 will be reviewed to identify potential additional
Two reviewers will assess risk of bias in all studies. For non-randomised studies, the ROBINS-I tool will be used. Two reviewers will assess risk of bias in all studies. Any disagreements in risk of bias will first be discussed between the two reviewers completing the tool; arbitration by a third reviewer will be used, if necessary. A sensitivity analysis will be conducted to analyse separately studies that are determined to have a high risk or unclear risk of bias. Studies will be assessed for selective reporting by verifying that all outcomes noted in the methods section are reported on. Additionally, publication bias across studies will be considered through funnel plots, if there are sufficient numbers of included studies.

### Data extraction

Data related to general study information (eg, title, authors, funding), methods (eg, study design, intervention characteristics, setting, participants, outcomes, mode of delivery, smoking duration) and conclusions will be extracted using a data extraction template in Covidence (Veritas Health Innovation, Melbourne, Australia; see online supplemental table 2). Categories will be revised and added as necessary during the process. Two reviewers will extract data (JAS and TGE) from all records and extracted data will be checked for consensus. Disagreements on extracted data will first be discussed between the two extracting reviewers and arbitrated by a third researcher, if necessary.

### Data analysis

Data elements to be extracted include general study characteristics (eg, study design, setting, participant characteristics, theoretical basis), intervention type (eg, counselling, pharmacological) and components (ie, characteristics that might modify intervention effectiveness), mode of delivery, outcome measures, time points of data collection, measurement method and disability domain (eg, cognitive, mobility, hearing). General study characteristics will provide an overview of what tobacco cessation interventions exist in the literature and for whom. These data will be presented in summary tables and graphs related to key outcomes and study characteristics. Data will be synthesised with a narrative summary of the evidence using text, tables, and forest plots and the certainty of evidence will be assessed following the GRADE approach. Potential subgroup analyses will be considered for studies that address the same disability domain using a...
similar intervention type with the same outcome. We will determine the appropriate methods of synthesis after extracting study characteristics of each record to identify what studies are similar enough to be grouped together. If possible and appropriate, a meta-analysis will be undertaken. Summary statistics will be calculated for each study, with a risk ratio being calculated for dichotomous variables and a difference between means for continuous variables. An effect size will be calculated using Hedge’s g. A combined effect size will be calculated using a random-effects meta-analysis or a fixed-effect meta-analysis and a forest plot will be used to illustrate effect estimates with CIs. Heterogeneity will be tested for using a $\chi^2$ and I$^2$ test.

Patient and public involvement
No patient involved.

ETHICS AND DISSEMINATION
There are no primary data associated with this study and the review only covers published literature. Therefore, we will not seek ethical approval as it will not be required. We intend to disseminate findings from this systematic review in peer-reviewed journal articles and in conference presentations.

Strengths and limitations
This will be the first systematic review to identify tobacco cessation interventions for people across a range of disability domains. Although one previous review has analysed the literature for tobacco cessation interventions for people with intellectual disabilities,19 this review was limited to those with mild or moderate intellectual disabilities and is nearly a decade old. Findings from this review will identify gaps in the tobacco cessation literature and provide recommendations on future research that will also inform policy and programmatic changes to improve tobacco treatment in people with disabilities.

Limitations of this study include limiting the search to English and interventions implemented in the USA. Additionally, although we have used recommended search terms for disability and used broad search terms in an attempt to capture all people living with disabilities, it is possible that some disability types will be missed due to varying definitions of disability.

Contributors JAS and ACV conceived and originally designed the systematic review. GSA and JAS developed the search strategy. SDR, TEG, LM and AN provided critical appraisal, feedback and recommendations on the design of the review. JAS wrote the original protocol draft. All authors provided comments on the draft and approved the final version of the protocol.

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Competing interests None declared.

Patient and public involvement Patients and/or the public were not involved in the design, conduct, or reporting, or dissemination plans of this research.

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REFERENCES

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