
Smoking Cessation
Leadership Center



University of California
San Francisco

The Epidemiology and Treatment of Smoking in People with Mental Illness

Gemma Taylor, PhD, Reader at University of Bath, UK

September 8, 2022

Moderator

Catherine Bonniot

Deputy Director

Smoking Cessation Leadership Center
University of California, San Francisco

A National Center of Excellence for Tobacco-
Free Recovery

Catherine.Bonniot@ucsf.edu



Disclosures

This UCSF CME activity was planned and developed to uphold academic standards to ensure balance, independence, objectivity, and scientific rigor; adhere to requirements to protect health information under the Health Insurance Portability and Accountability Act of 1996 (HIPAA); and include a mechanism to inform learners when unapproved or unlabeled uses of therapeutic products or agents are discussed or referenced.

All speakers, planning committee members and reviewers have disclosed they have no relevant financial relationships to disclose with ineligible companies whose primary business is producing, marketing, selling, re-selling, or distributing healthcare products used by or on patients.

Catherine Bonniot Saucedo, Anita Browning, Christine Cheng, Brian Clark, Pamela Ling, MPH, MD, Jennifer Matekuare, Ma Krisanta Pamatmat, MPH, Jessica Safier, MA, Gemma Taylor, PhD, and Aria Yow, MA.

Thank you to our funders



September: National Recovery Month



<https://www.samhsa.gov/recovery-month>

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- All participants will be in **listen only mode** and **the audio will be streaming via your computers**.
- Please **make sure your computer speakers are on** and adjust the volume accordingly.
- If you do not have speakers, please click on the link, **'Listen by Phone'** listed on the left side of your screen, for the dial-in number.
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- Use the **'ASK A QUESTION' box** to send questions at any time to the presenter.

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THE FUTURE LOOKS **BRIGHT**

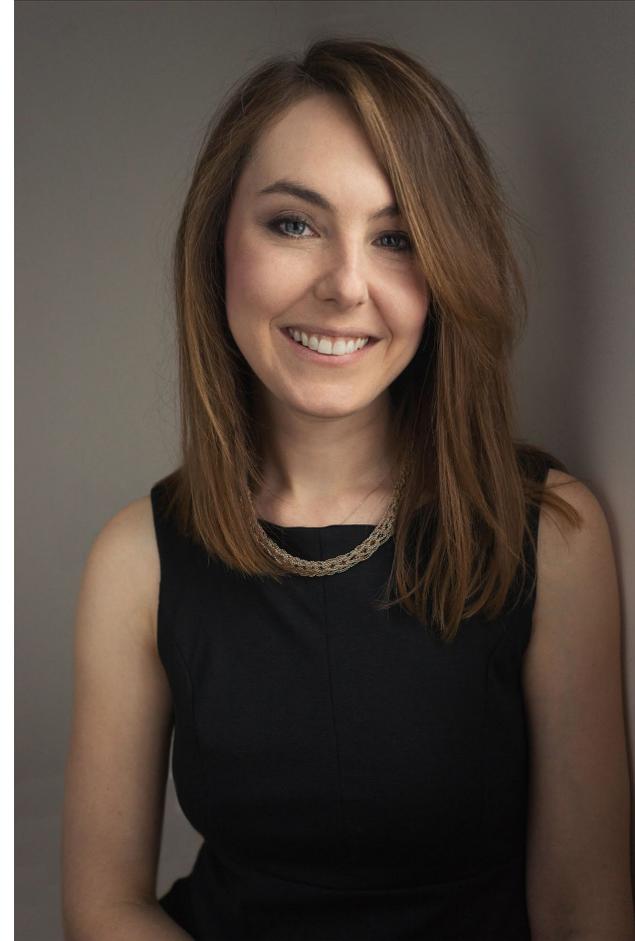
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Today's Presenter

Gemma Taylor, PhD

Reader

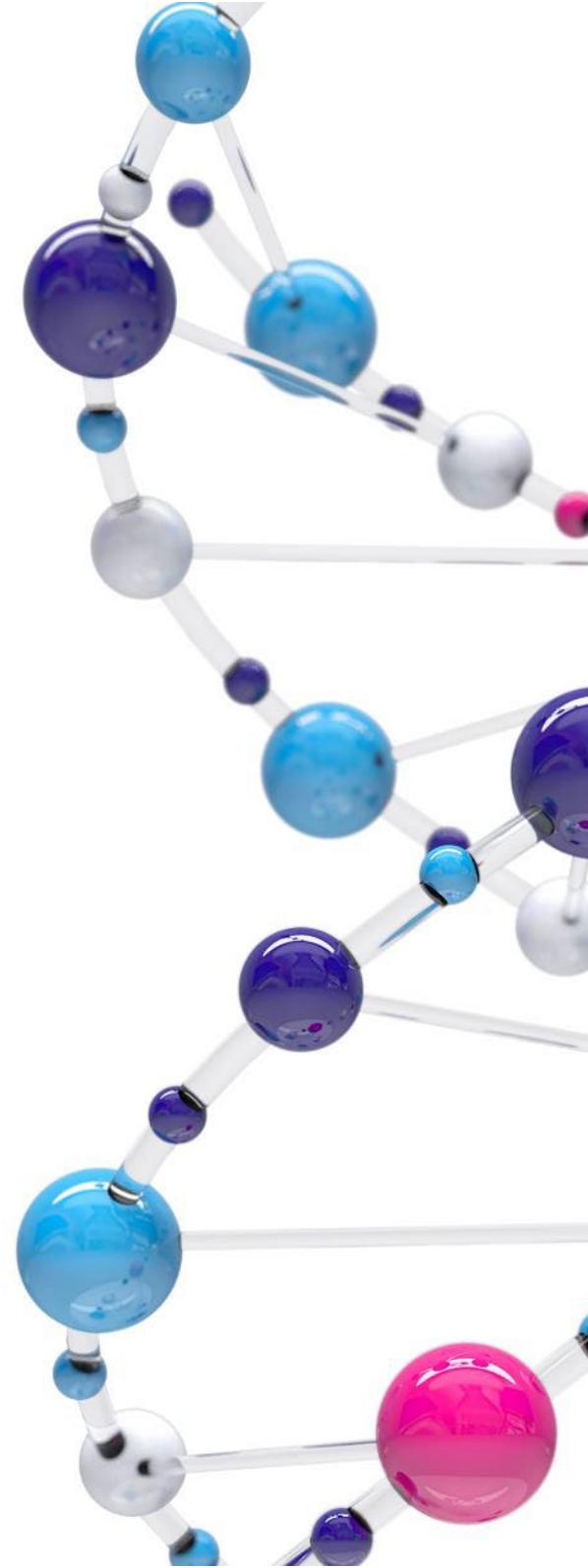
University of Bath



THE EPIDEMIOLOGY AND TREATMENT OF SMOKING IN PEOPLE WITH MENTAL ILLNESS

DR GEMMA TAYLOR, PHD

 @GemmaMJTaylor



DISCLOSURES AND FUNDING

- This work was partially supported by the National Institute for Health Research (NIHR), via Cochrane Infrastructure funding to the Tobacco Addiction Group.
- I receive funding from a Cancer Research UK Population Researcher Postdoctoral Fellowship award (reference: C56067/A21330) and Cancer Research UK project award (reference: PPRCPJT\100023).
- I report previous funding from Pfizer (GRAND scheme) for an unrelated project.
- I am employed by a scientific consulting company (HEOR) doing work unrelated to this project.

OVERVIEW

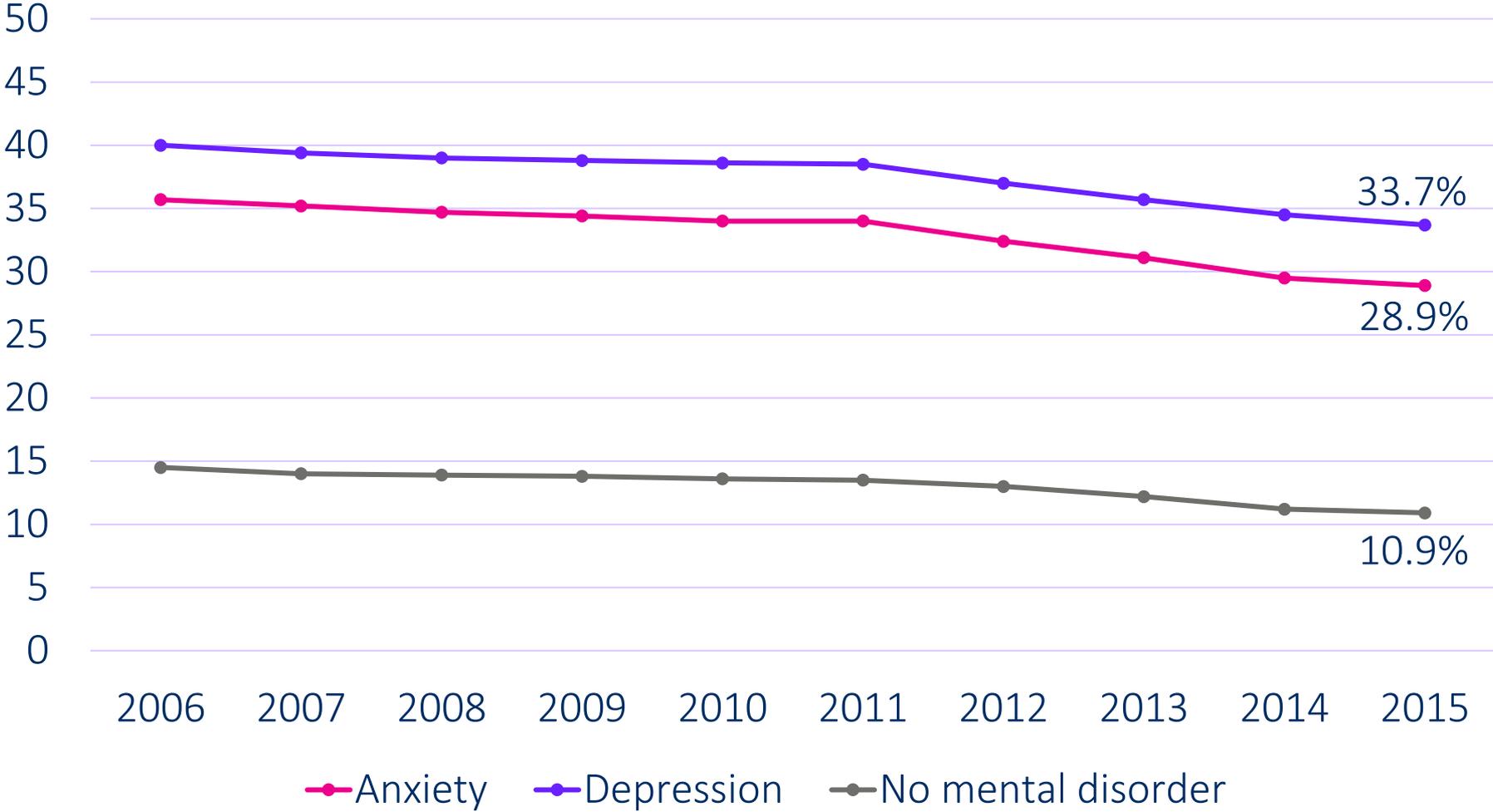
- 1) Why is this an important research area?
- 2) A Cochrane systematic review about the association between quitting smoking and mental ill-health.
- 3) The ESCAPE pilot trial – intEgrating Smoking Cessation treatment As part of usual Psychological care for dEpression and anxiety.

QR codes throughout – scan with phone camera!

“I was signed off work with depression. I was asked if I smoked and I was encouraged not to try and quit... I was given anti-depressants instead.”

- Smoker with depression, male, aged 37

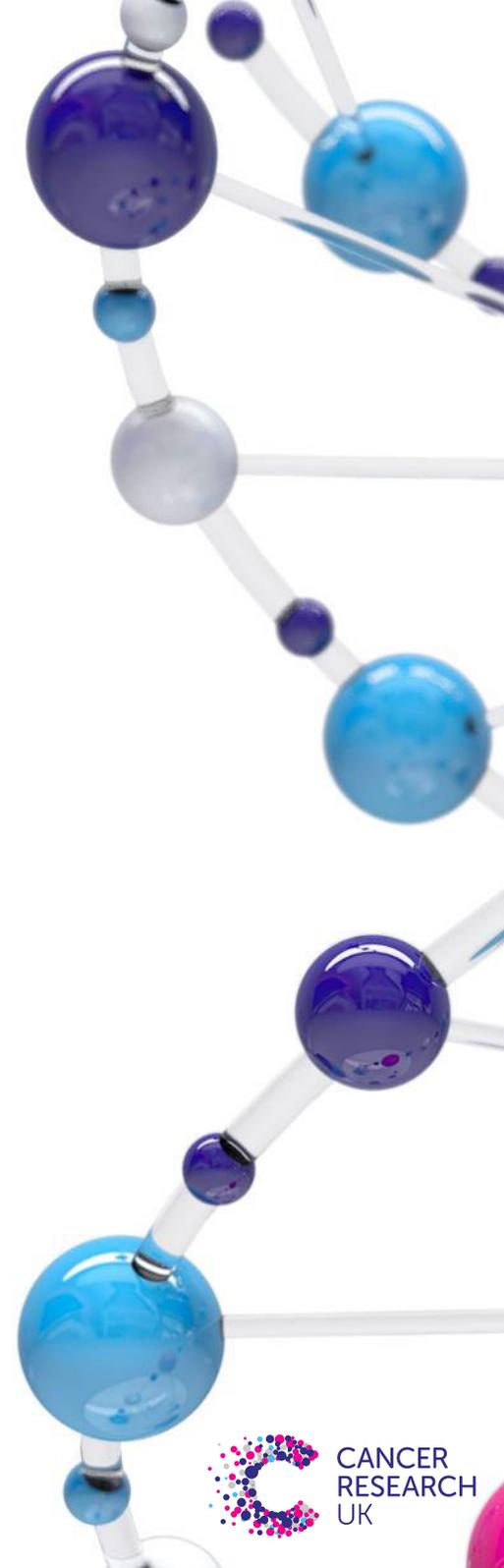
UK SMOKING PREVALENCE IN PEOPLE WITH AND WITHOUT ANXIETY AND DEPRESSION, 2006-2015



RATIONALE

People with mental illness:

- Smoke more, are more heavily addicted, and suffer from worse withdrawal
- Less responsive to standard treatments
- Experience a reduction in life expectancy up to 17.5 years
- They are as motivated to quit as the general population



RATIONALE

- A common perception that smoking helps people to manage stress and may be a form of 'self-medication'.
- However, there are biologically plausible reasons why smoking may worsen mental health through neuroadaptations arising from chronic smoking, leading to frequent nicotine withdrawal symptoms (e.g., anxiety, low mood, irritability).
- Therefore, quitting smoking may help to improve rather than worsen mental health.



Cochrane
Library

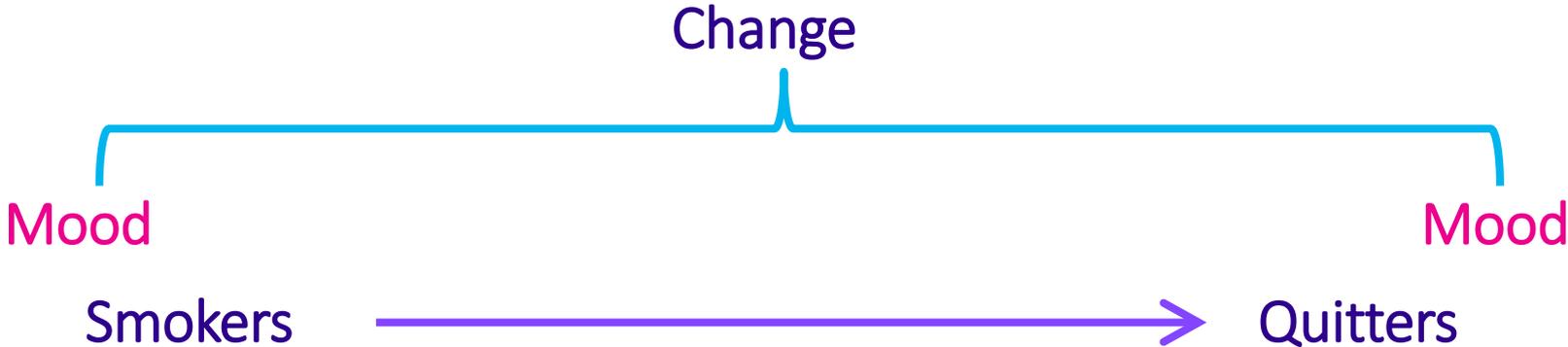
Cochrane Database of Systematic Reviews



Smoking cessation for improving mental health (Review)

Taylor GMJ, Lindson N, Farley A, Leinberger-Jabari A, Sawyer K, te Water Naudé R, Theodoulou A, King N, Burke C, Aveyard P

OBJECTIVES



—————→
Baseline to follow-up (6 weeks>)

METHODS

STUDIES:

- Controlled before-after studies
- RCTs analysed by smoking status at follow-up
- Longitudinal cohort studies
- At least 6 weeks follow-up

PARTICIPANTS:

- Adults who smoked tobacco (using studies own definition)
- No restrictions by population type, or comorbidities

METHODS

EXPOSURE:

- Quitting smoking (any definition, e.g., self report, bio-validated, preference for most stringent definition)

CONTROL:

- Continued smoking

METHODS - OUTCOMES

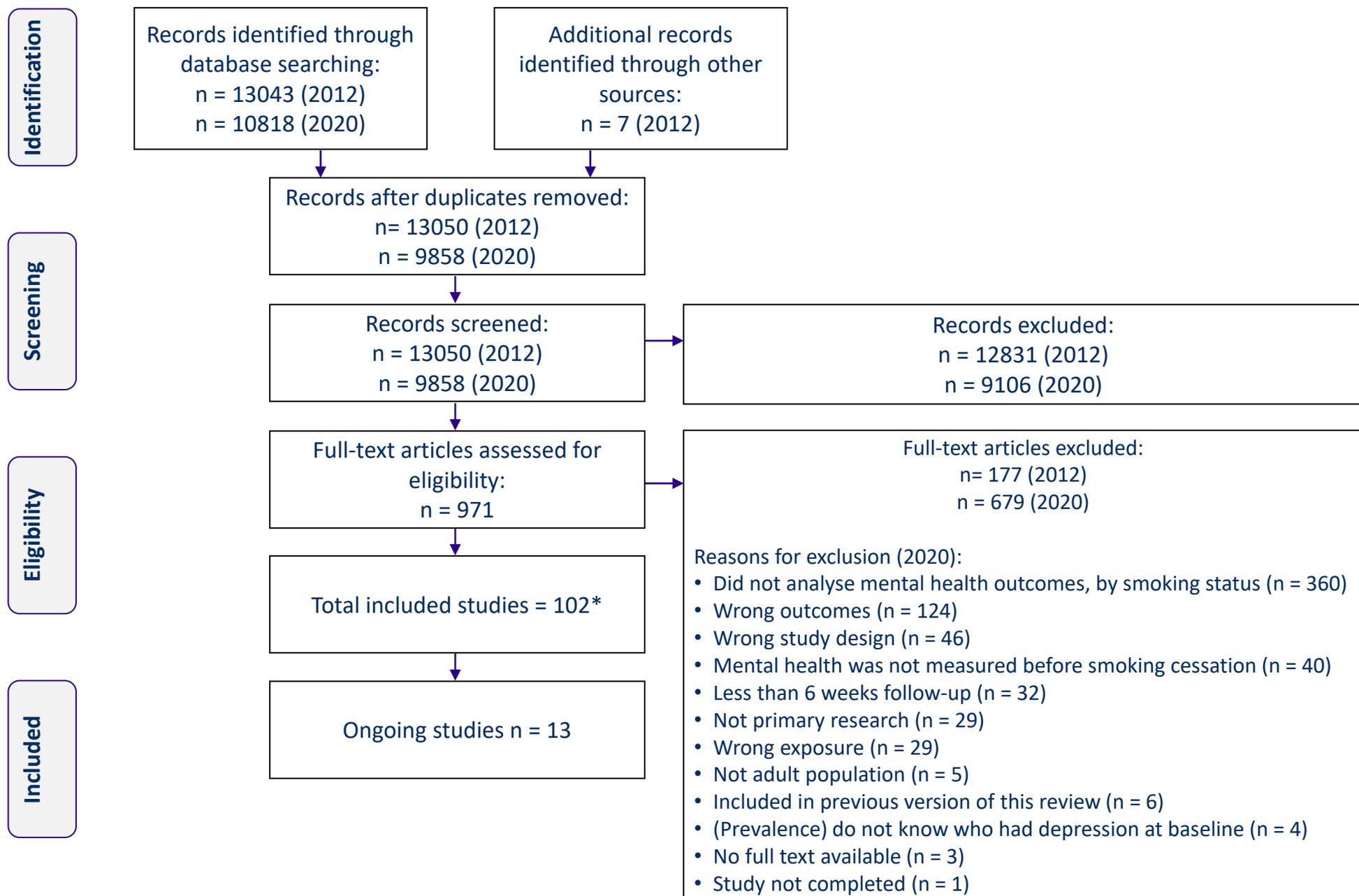
CHANGE IN SYMPTOMS OF:

- Anxiety
- Depression
- Stress
- Psychological QOL
- Positive affect
- Mixed anxiety and depression
- Social QOL

METHODS - SEARCHES

- Updated our previous review, inception to April 12 2012 (Taylor, 2014)
- Searched April 13 2012 to January 7 2020: Cochrane tobacco addiction group register, Cochrane central register of controlled trials, Medline, Embase, PsycInfo, clinicaltrials.gov, International Clinical Trials Registry Platform
- Translated non-English studies

Figure 1. Study Flow Diagram 2020



*40 of these studies were identified through the 2012 literature searches

RESULTS

Search results:

- Screened 22,908 titles and abstracts
- Read 971 full-text studies

Included studies:

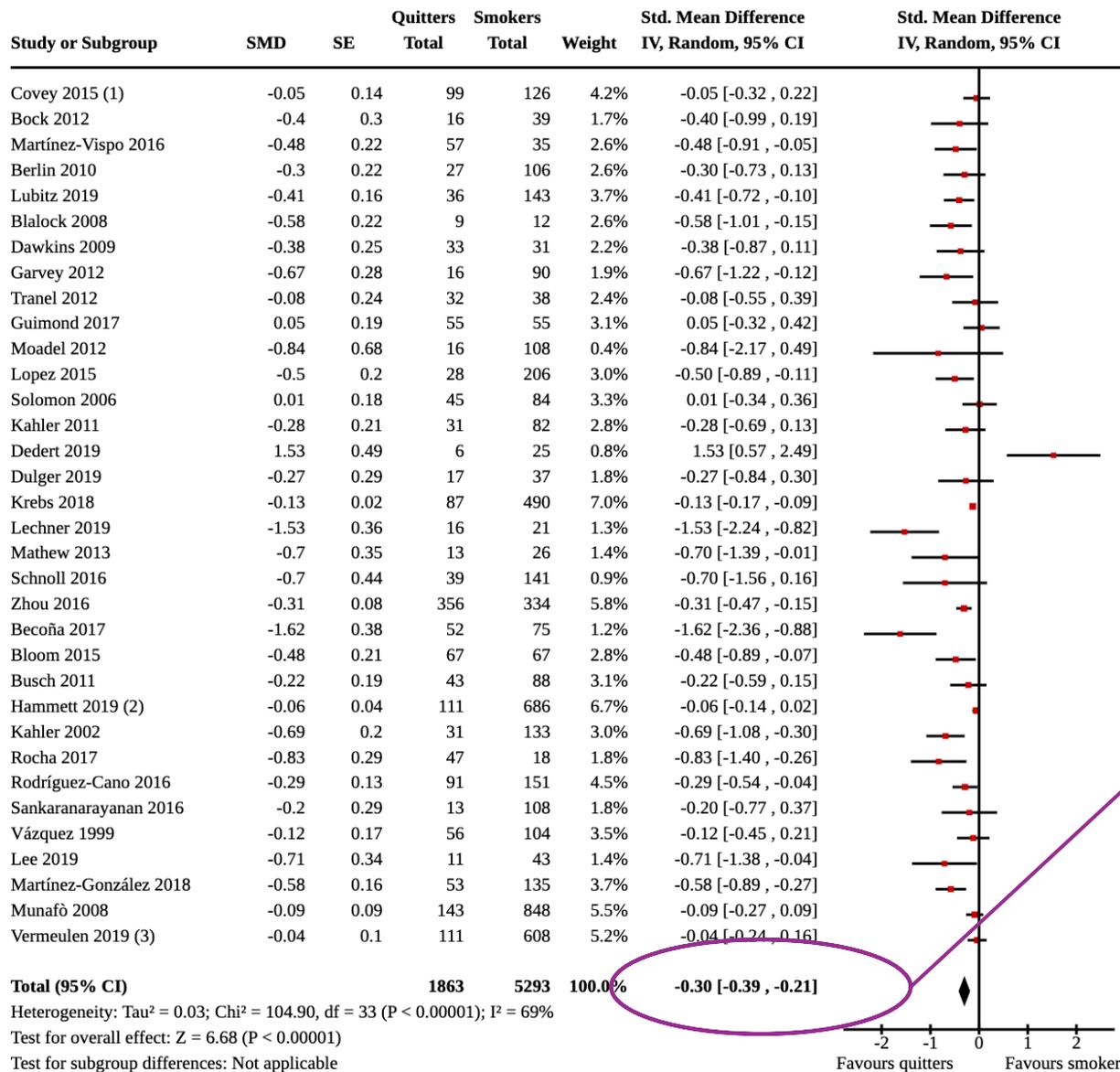
- Included 102 studies*
- 73 meta-analysed
- 31 narrative synthesis

Included participants:

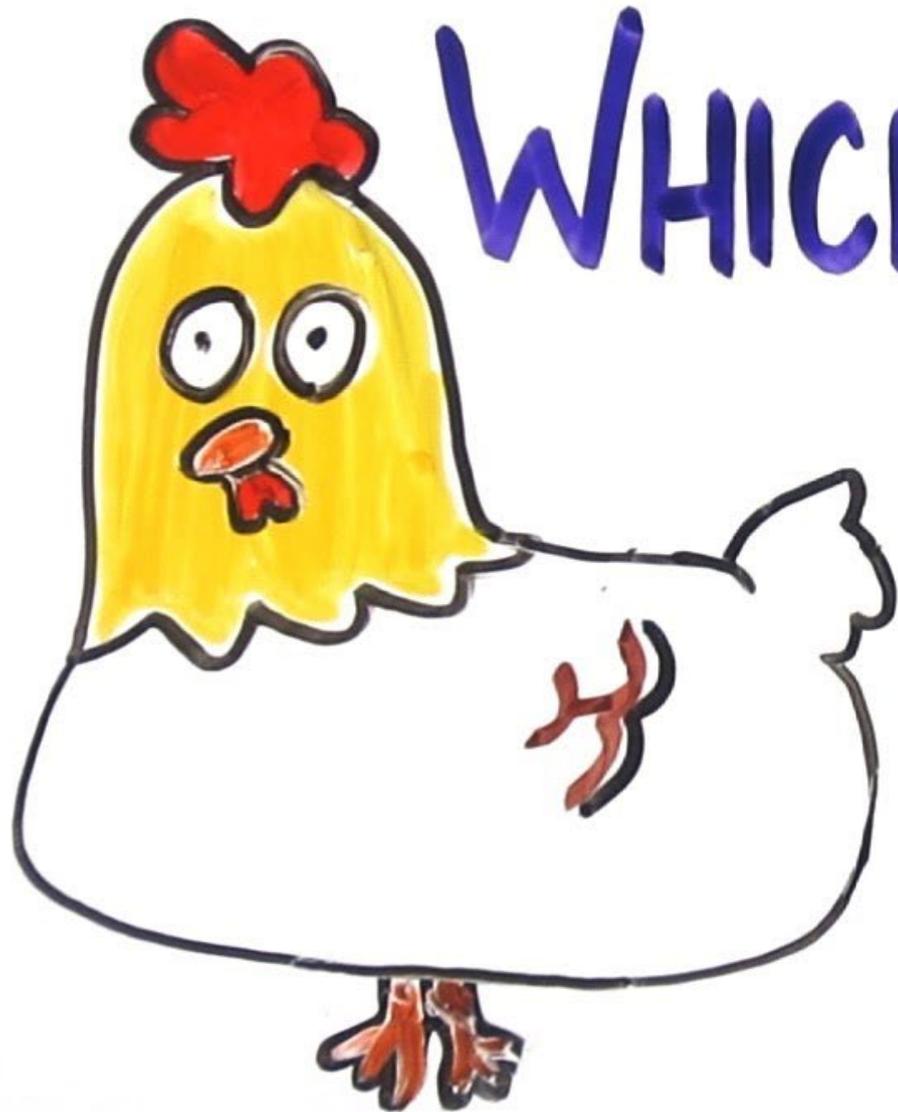
- >169,500 participants included**
- >42,000 participants meta-analysed**

*2 studies were included in the meta-analysis and narrative review because they reported data suitable for meta-analysis for one outcome, and data only suitable for narrative synthesis for another outcome)** not possible to give exact Ns as some studies did not report total N analysed.

DIFFERENCE IN CHANGE IN DEPRESSION, BETWEEN QUITTERS AND CONTINUING SMOKERS, SMD (95% CI)



-0.30 (-0.39, -0.21), I²=69%

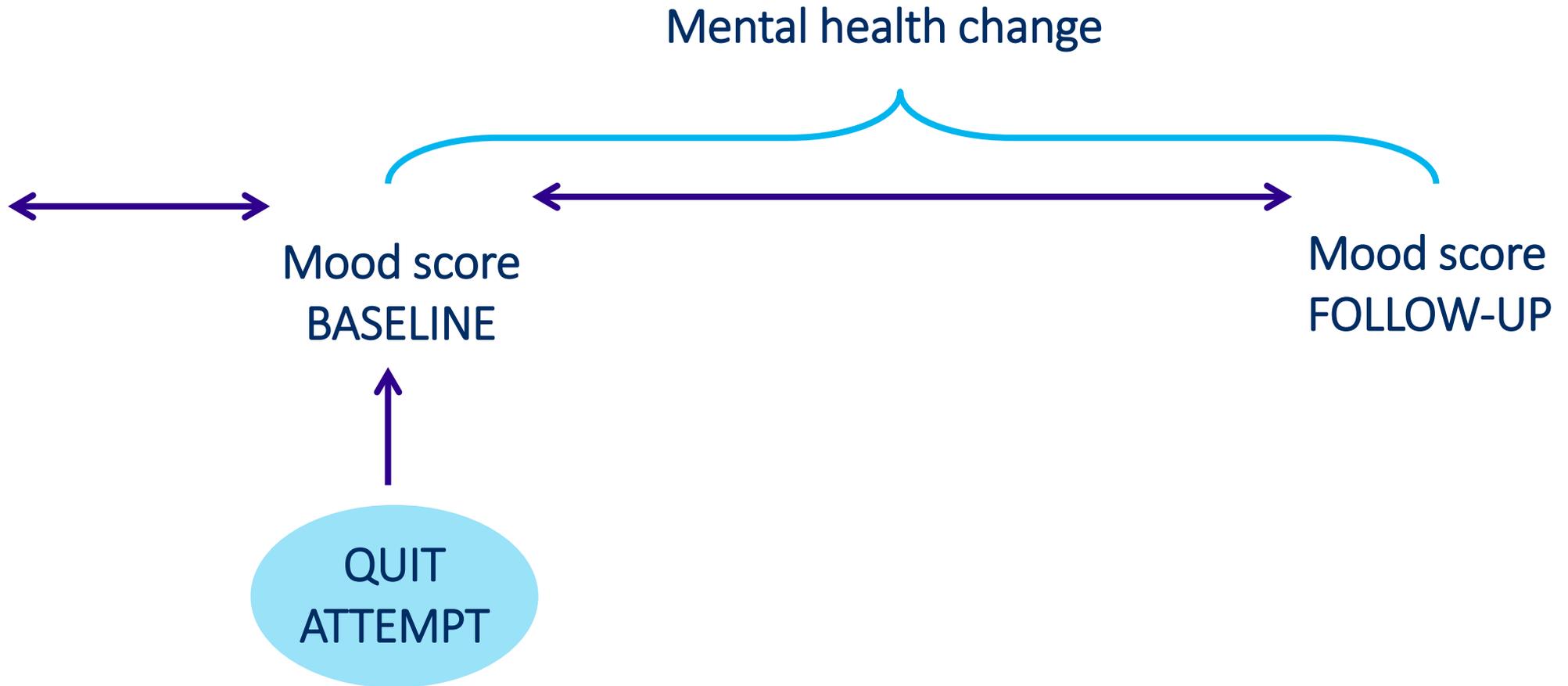


WHICH CAME FIRST

OR
THE



Reverse causality



SUMMARY OF FINDINGS

- Evidence that smoking cessation is associated with improved mental health across 6 different outcomes.
- Strong evidence that mental health does not worsen as a result of quitting smoking.
- Findings robust to multiple sensitivity and subgroup analyses.

QUITTING SMOKING COMPARED TO TAKING ANTIDEPRESSANTS



PILOT & FEASIBILITY QUESTIONS

Does offering smoking cessation treatment impact on completing usual care?

Do participants engage with the smoking cessation treatment?

Can we conduct a smoking cessation intervention trial in this setting?



IMPROVING ACCESS TO PSYCHOLOGICAL THERAPIES (IAPT)

- Treat common mental illness (mood, OCD, anxiety)
- Receive 1.5 million referrals each year
- Assess 1 million patients each year
- 50% receive therapy
- Evidence based therapies (CBT)

NHS



METHODS



- Pre-registered and published (ISRCTN99531779)
- ESCAPE is a pragmatic randomised and controlled, multicentre, acceptability, feasibility and implementation trial with nested qualitative methods
- Conducted across 4 English regions and included 6 IAPT services

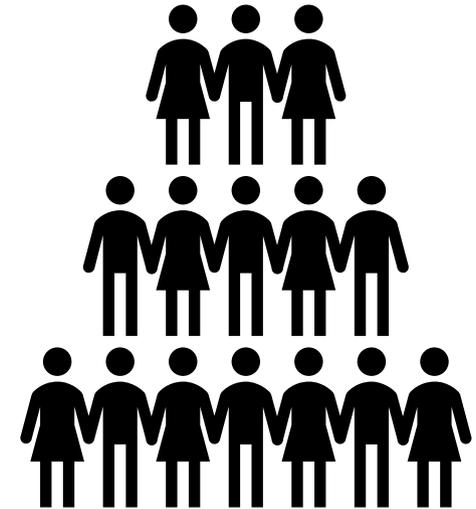
PARTICIPANTS

Inclusion:

- Aged 18+ years
- Depression and/or anxiety (PHQ-9 score of ≥ 10 and/or GAD-7 score of ≥ 8)
- Other mental health comorbidities permitted
- Self-reported daily tobacco smokers of ≥ 1 year

Exclusion:

- Had already started IAPT treatment
- Pregnant/breastfeeding
- Considered “too unwell”



INTERVENTION BASIC STRUCTURE



Parallel treatment of smoking and mental health, in IAPT.



Delivered by IAPT therapists during usual therapy sessions during individual sessions.



IAPT service users with depression and/or anxiety, who smoke daily.



5-15 minutes per therapy session, 6+ sessions.



Smoking cessation medication + behavioural support.



TAU + delayed referral to smoking cessation services.

INTEGRATED INTERVENTION CBT

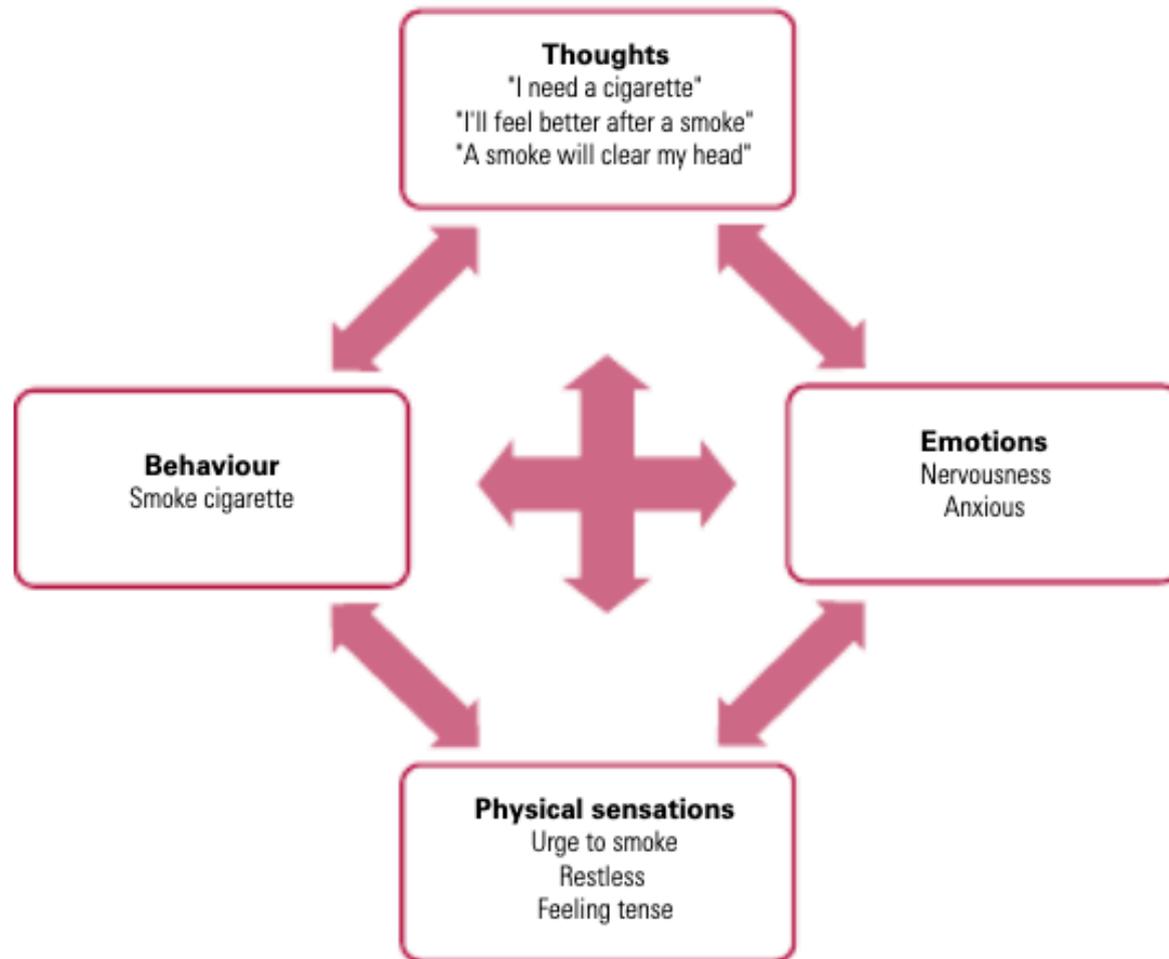
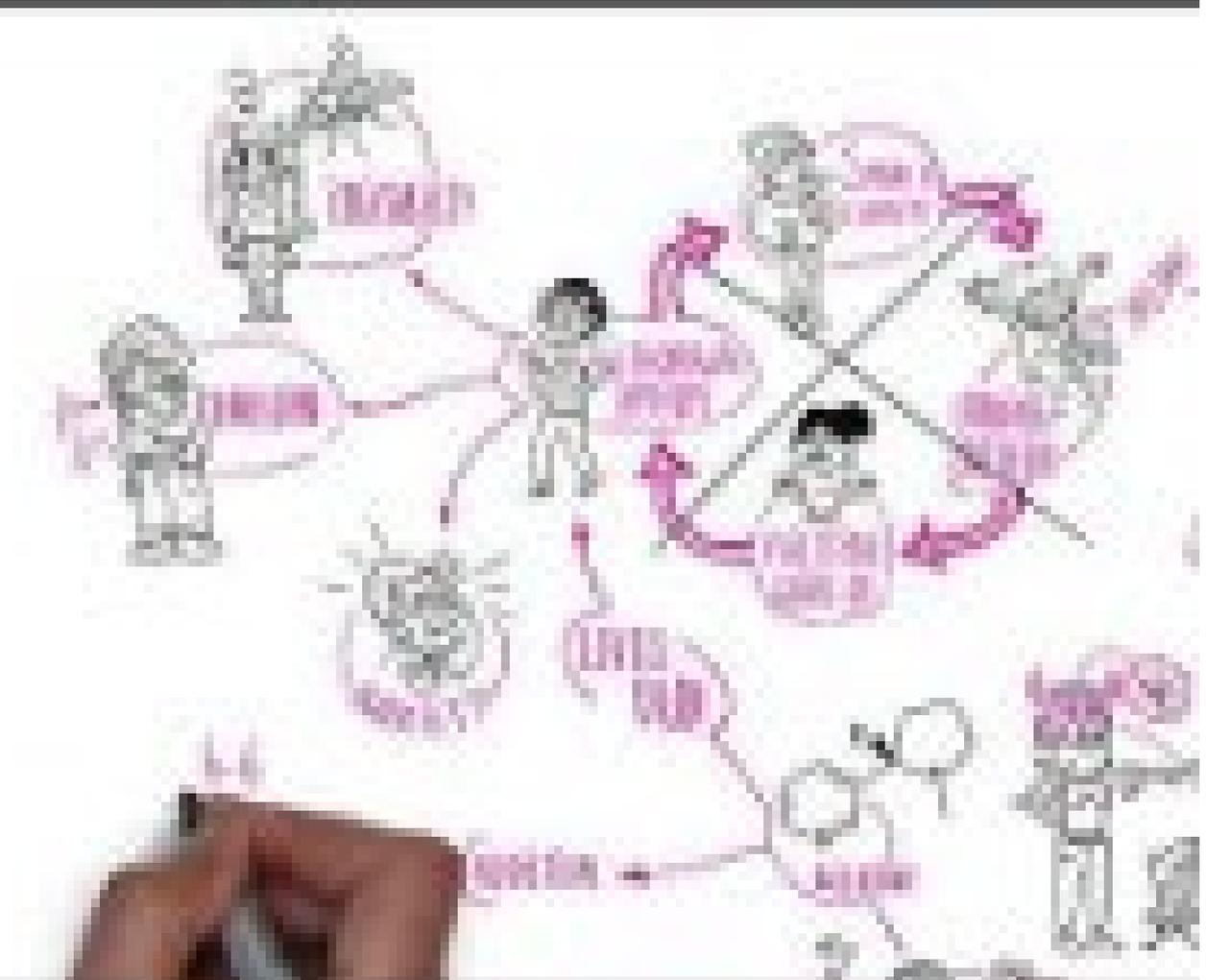


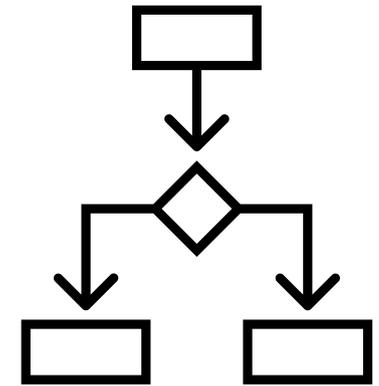
FIG 3 The anxiety cycle in smoking: the trigger is an anxiety-provoking event.

PSYCHOEDUCATIONAL VIDEO



OUTCOMES

- 3- & 6-month follow-up
- IAPT treatment completion
- Quit attempts
- 7-day point prevalence smoking cessation (saliva cotinine or exhaled-CO verified)
- Depression scores (PHQ-9)
- Anxiety scores (GAD-7)
- Treatment satisfaction
- Recruitment rates



Baseline and pre-clinical* characteristics

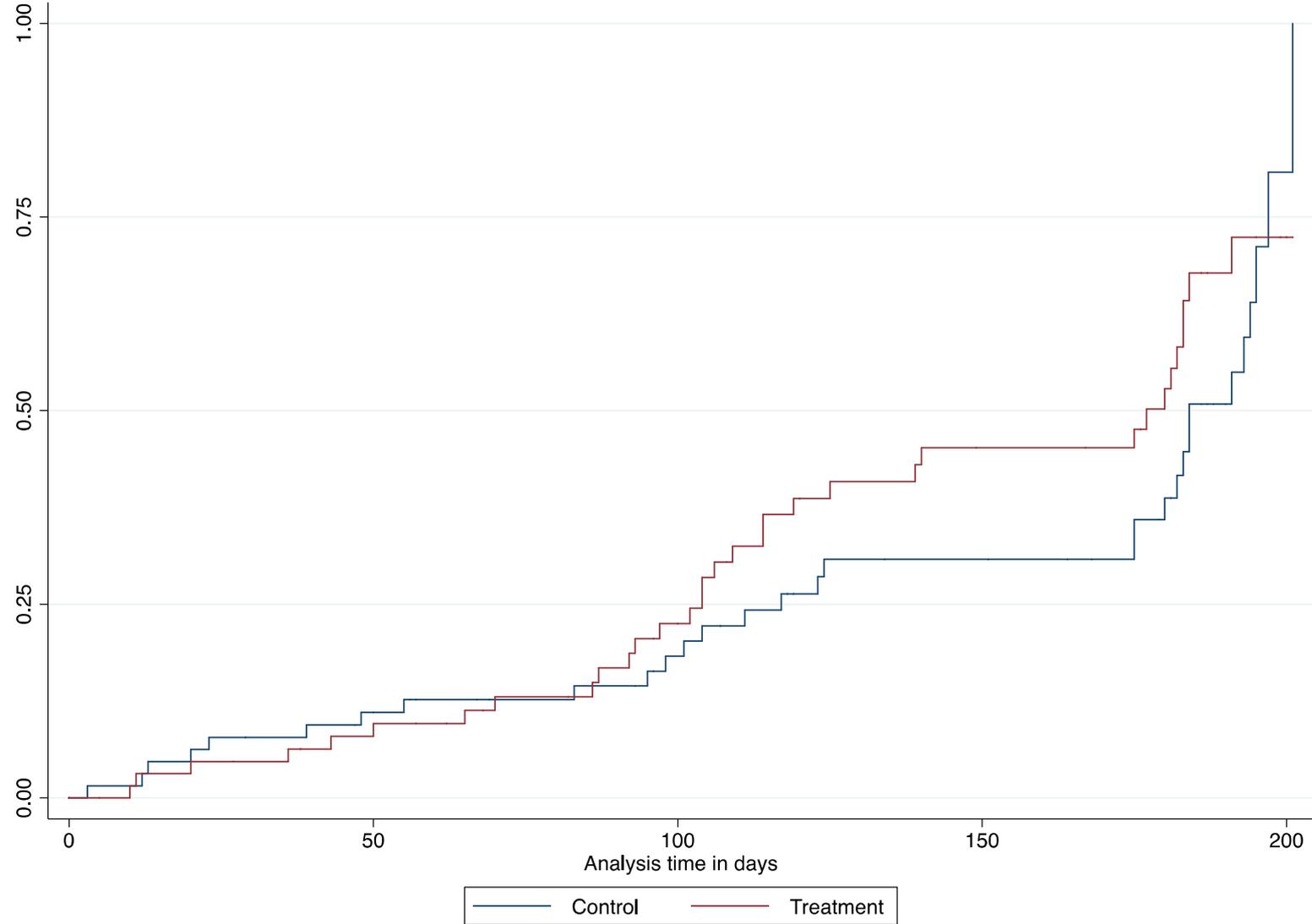
		Control N=67	Treatment N=68
Age in years		33.7 (11.9)	37.4 (13.3)
Gender, N (%)	Male	27 (40.3%)	22 (32.4%)
	Female	40 (59.7%)	46 (67.6%)
Ethnicity, N (%)	White	60 (89.6%)	61 (89.7%)
	Mixed	4 (6.0%)	3 (4.4%)
	Indian	1 (1.5%)	1 (1.5%)
	Pakistani	2 (3.0%)	1 (1.5%)
	Bangladeshi	0 (0.0%)	1 (1.5%)
	Other	0 (0.0%)	1 (1.5%)
Highest level of education, N (%)	Some high school	1 (1.6%)	1 (1.5%)
	GCSE/O-grade/equivalent	15 (24.6%)	18 (26.9%)
	A-level equivalent	6 (9.8%)	12 (17.9%)
	Apprenticeship	5 (8.2%)	3 (4.5%)
	Other vocational	13 (21.3%)	14 (20.9%)
	Degree	16 (26.2%)	14 (20.9%)
	Higher degree	5 (8.2%)	5 (7.5%)
IMD		18.1 (12.9)	18.3 (12.4)
PHQ-9*		14.9 (5.8)	14.0 (6.1)
GAD-7*		13.7 (4.7)	12.3 (5.1)
Comorbid anxiety, N (%)*	No	34 (50.7%)	41 (61.2%)
	Yes	33 (49.3%)	26 (38.8%)
Comorbid panic attacks, N (%)*	No	58 (86.6%)	59 (88.1%)
	Yes	9 (13.4%)	8 (11.9%)
Comorbid OCD, N (%)*	No	60 (89.6%)	61 (91.0%)
	Yes	7 (10.4%)	6 (9.0%)
Other comorbid mental health condition, N (%)*	No	55 (82.1%)	55 (82.1%)
	Yes	12 (17.9%)	12 (17.9%)
HIS*		2.1 (1.6)	2.6 (1.6)
CPD*		13.1 (7.8)	15.7 (8.4)
Previous number of quit attempts		5.0 (7.0)	3.7 (6.7)

IMD = Index of Multiple Deprivation score, PHQ-9 = Patient Health Questionnaire, GAD-7 = Generalised Anxiety Disorder Questionnaire, OCD = obsessive-compulsive disorder, HSI = Heaviness of Smoking Index, CPD = Cigarettes per day

MAIN ACCEPTABILITY AND FEASIBILITY OUTCOMES AT 3- AND 6-MONTHS FOLLOW-UP

	3-month follow-up, N (%)		6-month follow-up, N (%)	
	Control	Treatment	Control	Treatment
	N=67	N=68	N=67	N=68
Bio-verified self-reported 7-day smoking abstinence	1 (1.5%)	8 (11.8%)	4 (6.0%)	10 (14.7%)
IAPT treatment completion	13 (19.4%)	11 (16.2%)	21 (31.3%)	16 (23.5%)

SURVIVAL CURVE: NUMBER OF DAYS TO TREATMENT COMPLETION, BY TRIAL ARM, N=135



LIMITATIONS

- Trial still in progress - data incomplete
- Unable to collect implementation data
- Blinding was unsuccessful in 13-15% of follow-ups
- Predominately recruited white, educated, women in their 30s

SUMMARY OF FINDINGS

- We recruited at an acceptable rate across 4 NHS trusts.
- Attrition was what we expected (33%).
- Practitioners and participants reported that they accepted and were satisfied with the intervention.
- Offering smoking cessation treatment did not impact on engagement with the trial, or with usual IAPT treatment.
- Participants engaged with the smoking cessation treatment.
- Evidence of intervention promise for a future smoking cessation trial.

How does smoking worsen mental health, and how does quitting improve mental health?



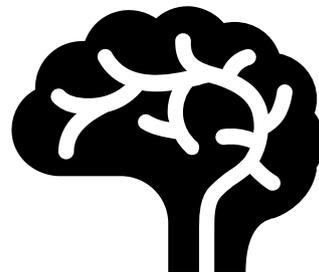
Biological pathways – neurotransmitter systems

- Constant fluctuation in withdrawal-induced psychological symptoms is associated with damage in neurotransmitter pathways, which could increase the risk of mental ill-health.
- After breaking the tobacco withdrawal cycle, through smoking cessation, these systems recover in the same way that other systems damaged by smoking reverse after smoking cessation.
- Smoking damages every organ in the body – so of course it damages the brain.



Biological pathways - inflammation and oxidative stress

- Oxidative stress and inflammation underly the progression of depression, anxiety and bipolar disorder
- It is well established that smoking has long-term effects on the oxidative stress burden
- Crucially, the association showed a dose-response pattern, such that higher levels of daily smoking led to higher concentrations of oxidative stress biomarkers
- Evidence that those who had stopped smoking for more than 10 years had similar oxidates stress biomarker levels as never smokers



FINAL THOUGHTS

- It's highly likely that smoking damages the brain like it damages other organs in the body.
- There's consistent evidence that stopping smoking is linked to improvements in mental health.
- People who smoke can be reassured that stopping smoking will not worsen and may improve their mood, by reducing anxiety, depression, and stress.
- Clinicians should be reassured that encouraging and supporting smoking cessation in their patients will not worsen and may improve mood.
- There is no reason to fear that people with psychological disorders will have their condition worsened by smoking cessation.

DISSEMINATION

Public Health England

Health Matters

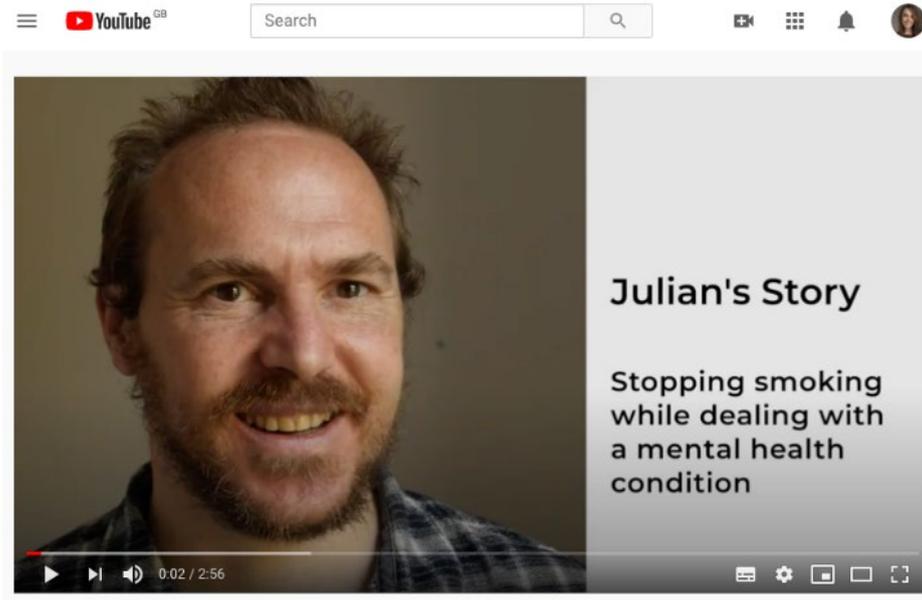
Benefits of stopping smoking for people with poor mental health

For people with a mental health condition, smoking cessation improves both physical and mental health and reduces the risk of premature death.



Stop smoking support is effective for people with poor mental health

Stopping smoking can be as effective as antidepressants & reduce the amount of psychiatric medication needed

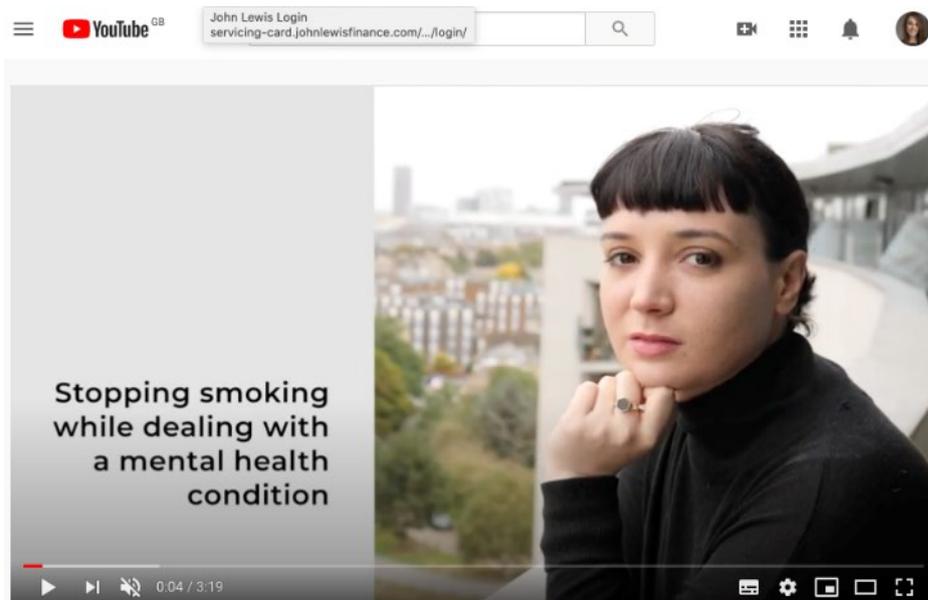


YouTube GB Search

Julian's Story

Stopping smoking while dealing with a mental health condition

0:02 / 2:56



YouTube GB John Lewis Login servicing-card.johnlewisfinance.com/.../login/

Stopping smoking while dealing with a mental health condition

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THANK YOU



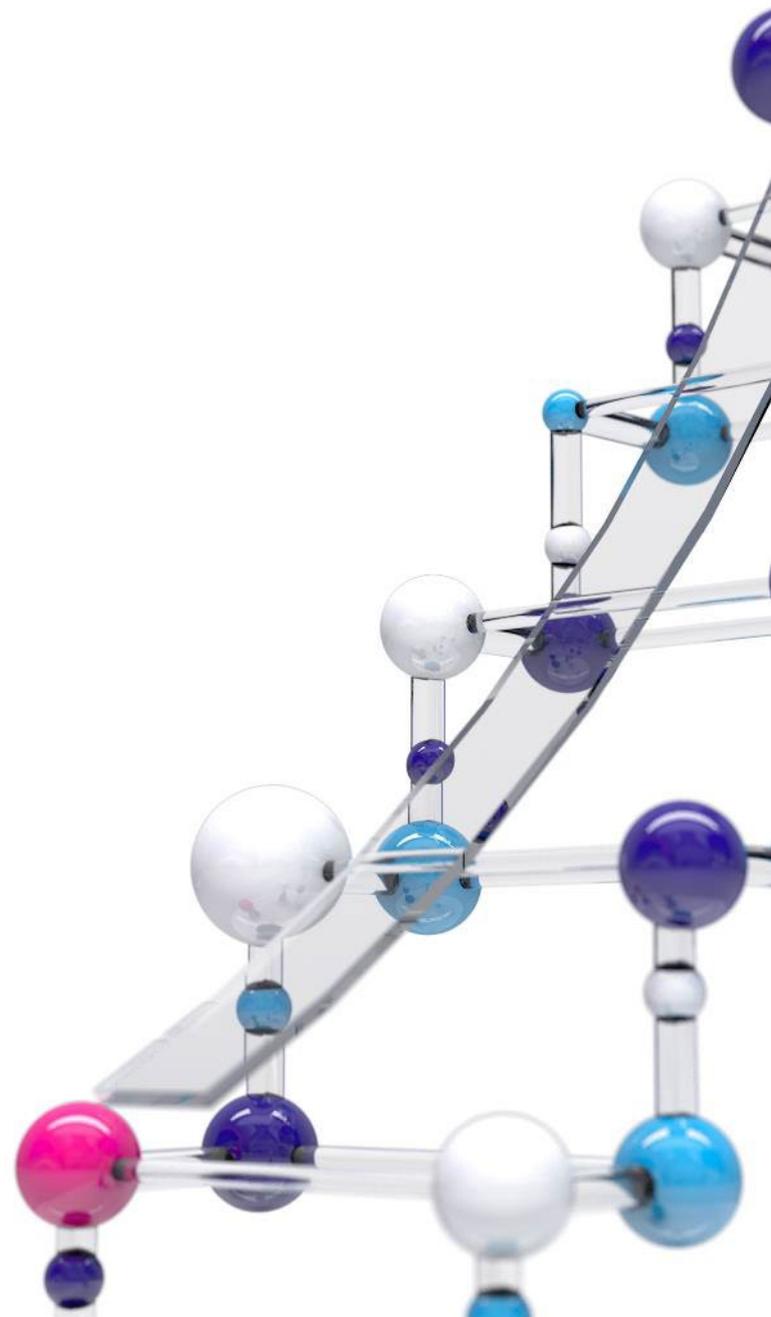
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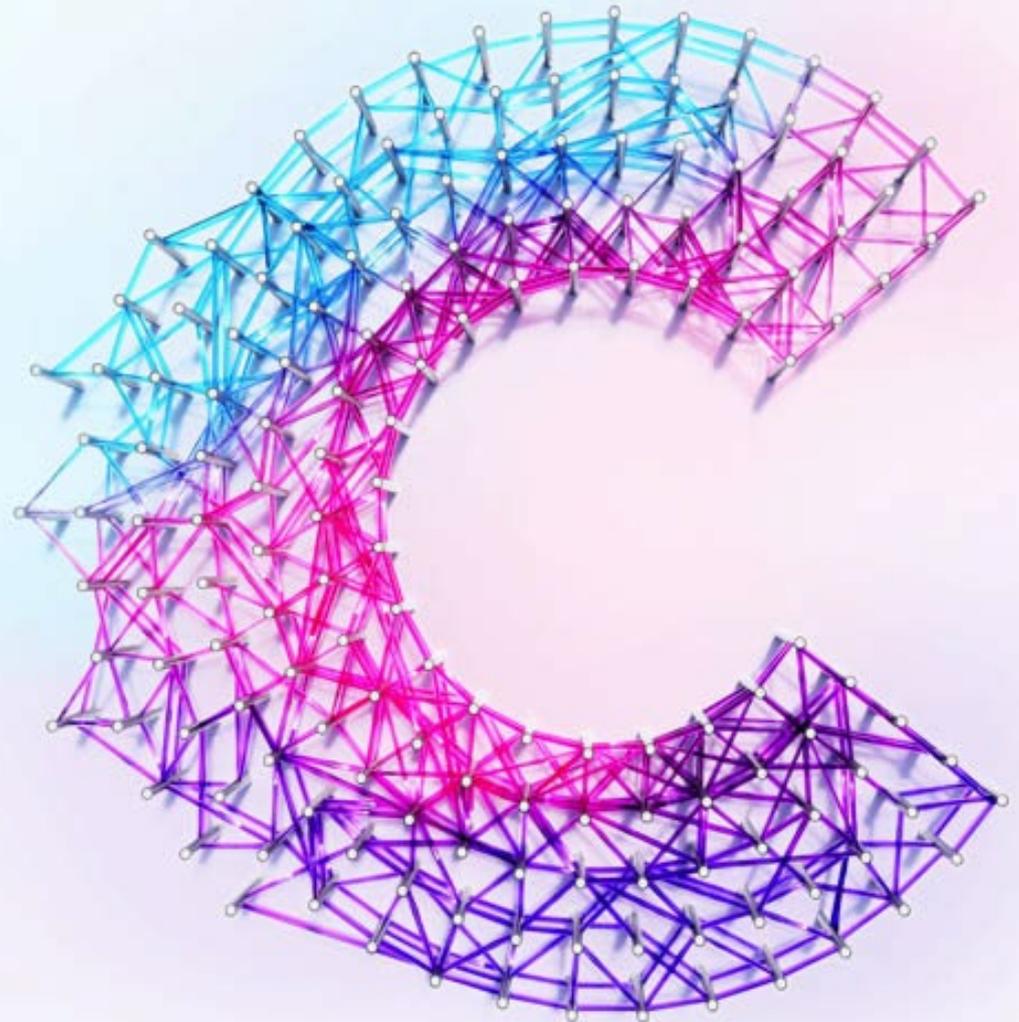
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Q&A

- Submit questions via the **'Ask a Question' box**



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✓ Refer your clients to cessation services

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- You will receive the following in our post webinar email:
 - ✓ Webinar recording
 - ✓ PDF of the presentation slides
 - ✓ Instructions on how to claim FREE CME/CEUs
 - ✓ Information on certificates of attendance
 - ✓ Other resources as needed
- All of this information will be posted to our website at <https://SmokingCessationLeadership.ucsf.edu>





SCLC's next live webinar is co-hosted with the National Behavioral Health Network on Tobacco and Cancer Control (NBHN) entitled, "***Journey to a Tobacco-free Certified Community Behavioral Health Clinic (CCBHC): A Conversation***"

- **Tuesday, September 20, 2022, 12:30 – 1:30 pm EDT**
- Registration will open soon

Contact us for free technical assistance



- **Visit** us online at smokingcessationleadership.ucsf.edu
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