

Neurobiology and Recovery: Addressing Nicotine Use Among Individuals with Serious Mental Illness, co-hosted by the National Behavioral Health Network for Tobacco and Cancer Control

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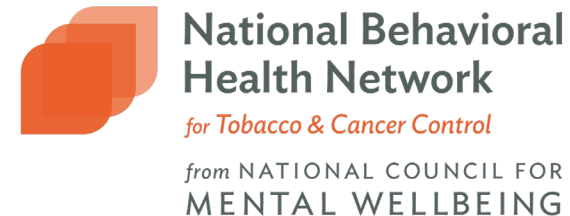
Disclosures

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Learning Objectives

1. Describe the impact of tobacco use and nicotine addiction among individuals with serious mental illness and its public health impact.
2. Identify common myths, biases, and barriers that contribute to disparities in tobacco treatment within psychiatric settings.
3. Explain the neurobiological mechanisms that make individuals with SMI more vulnerable to nicotine dependence.
4. Discuss promising interventions and strategies for treating tobacco use among individuals with SMI, including pharmacologic and behavioral approaches.
5. Explain models/strategies for integrating tobacco treatment into mental health and psychiatric care systems to support long-term recovery and health disparities.

Today's Presenter

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Director

Smoking Cessation Leadership
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University of California
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Neurobiology and Recovery: Addressing Nicotine Use Among Individuals with Serious Mental Illness

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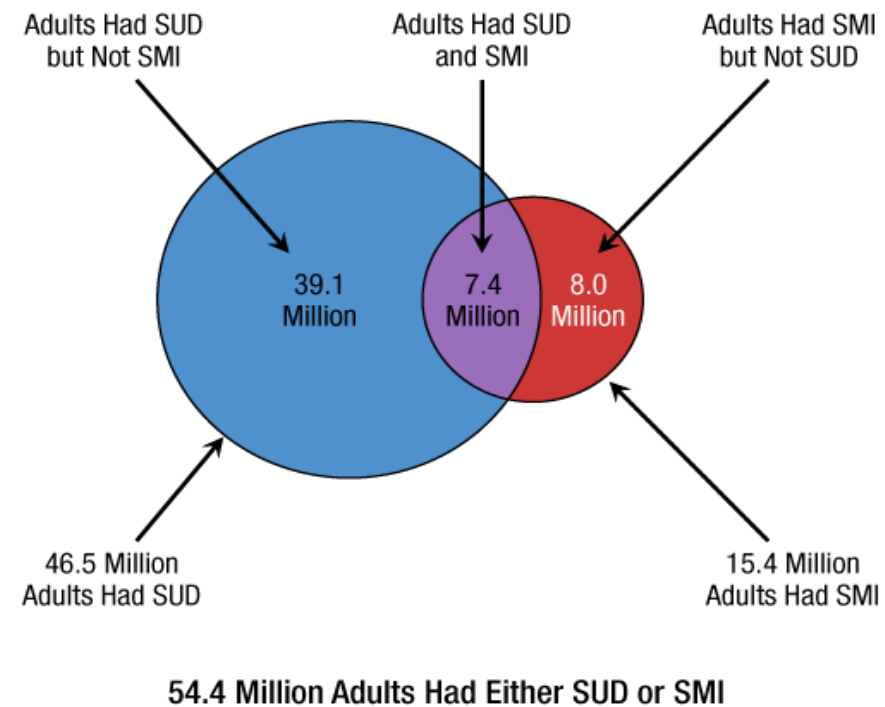
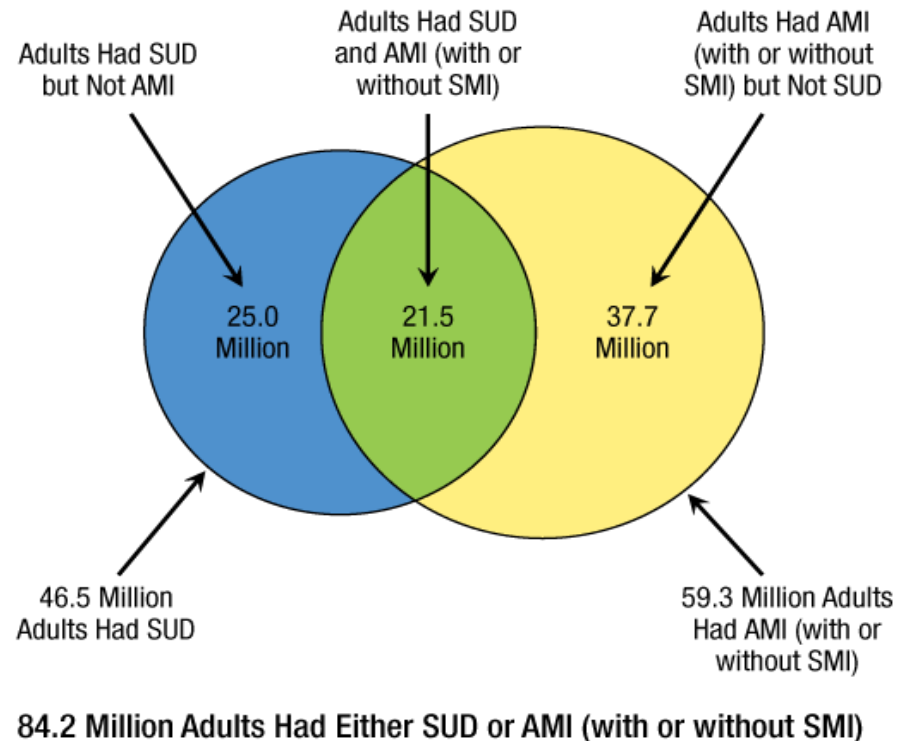
Clinical case scenario

Mr. P is a 55-year-old man with a history of homelessness, poly-substance use (in remission), diabetes, hypertension, hyperlipidemia, traumatic brain injury, mild cognitive impairment, and schizophrenia

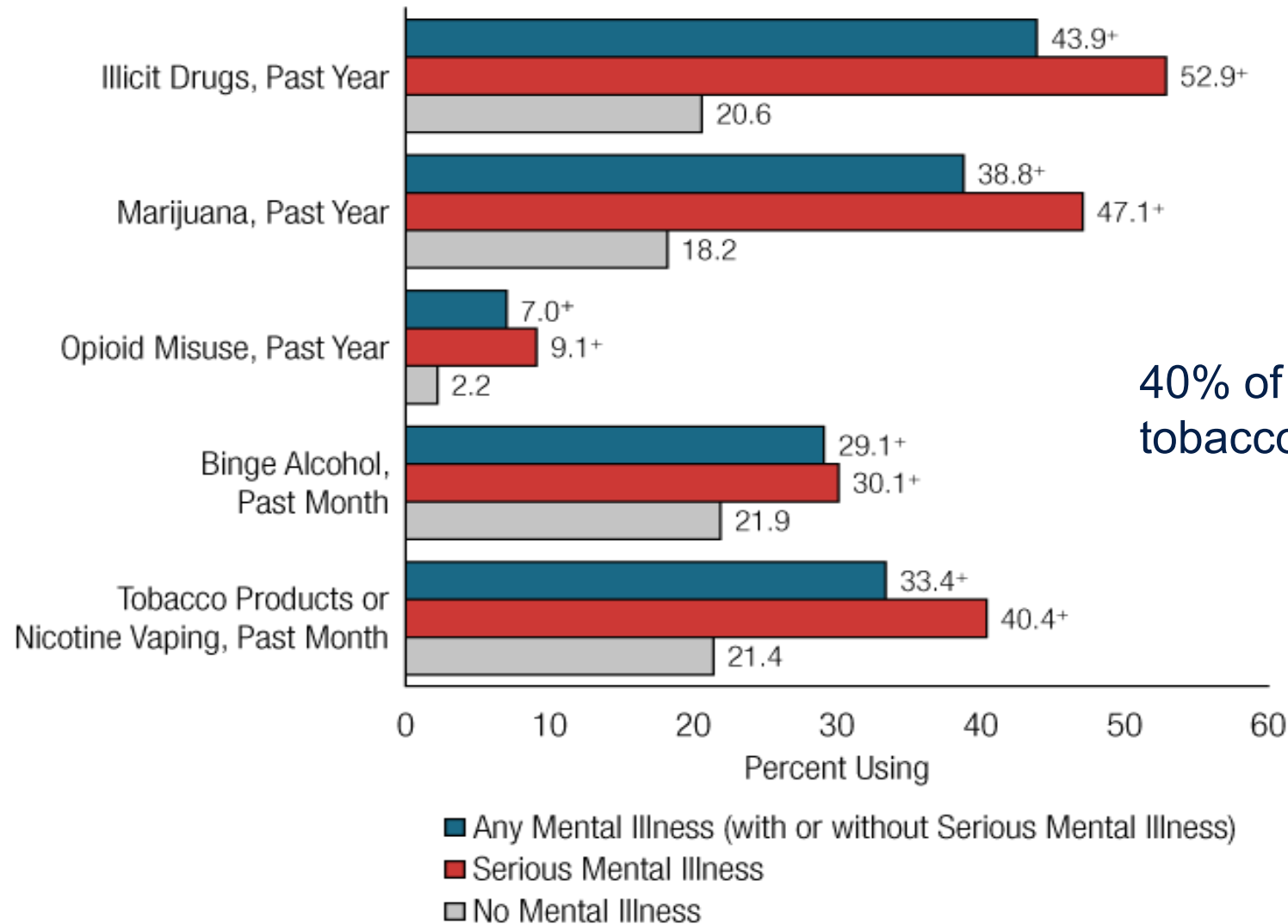
- Smokes 1 pack per day, 40 pack-year history
- Lived in a hotel in the Tenderloin where smoking is allowed indoors
- Many quit attempts, but finds it hard
- Prescribed olanzapine for schizophrenia
- Taking medications for other chronic conditions

15 million adults in the United States with a serious mental illness (SMI)

- Schizophrenia, bipolar disorder, and recurrent major depressive disorder

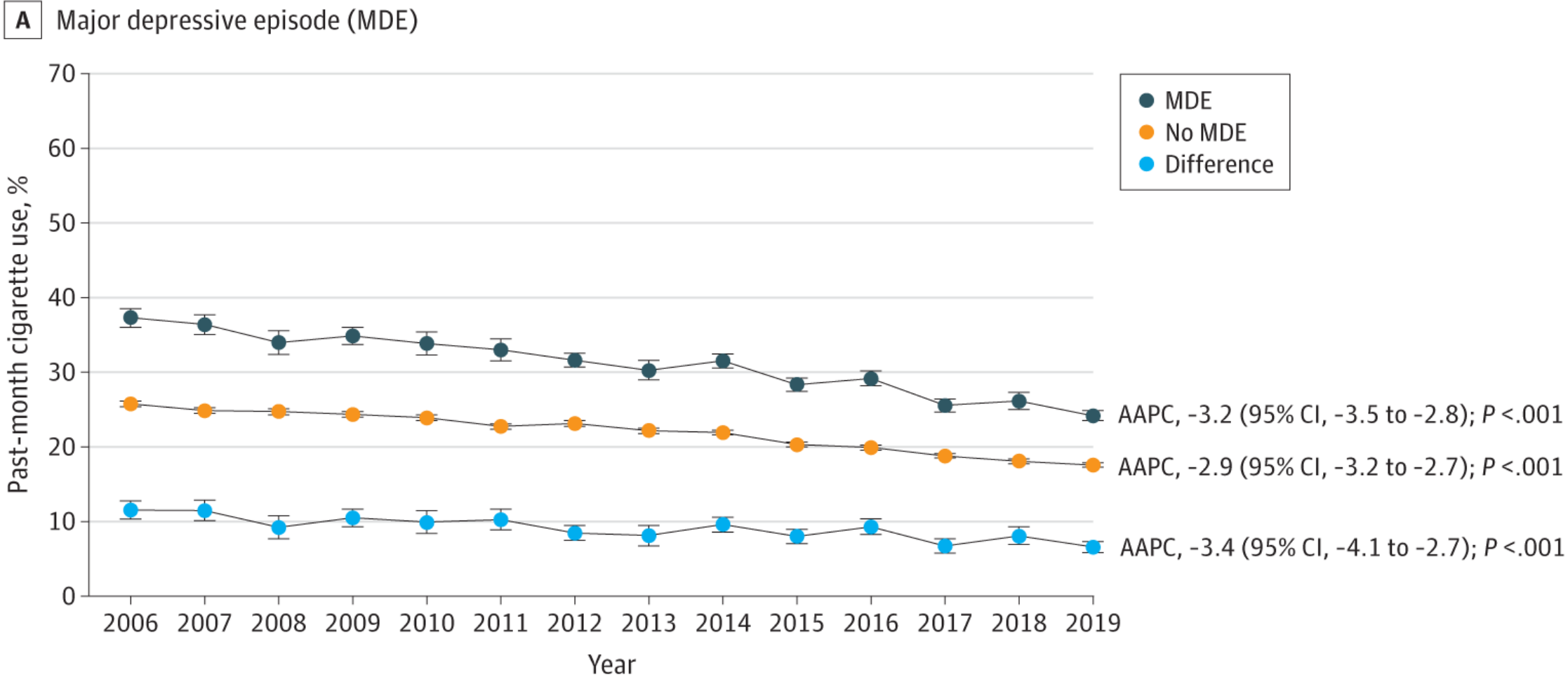


Tobacco use is highly prevalent among those with a SMI

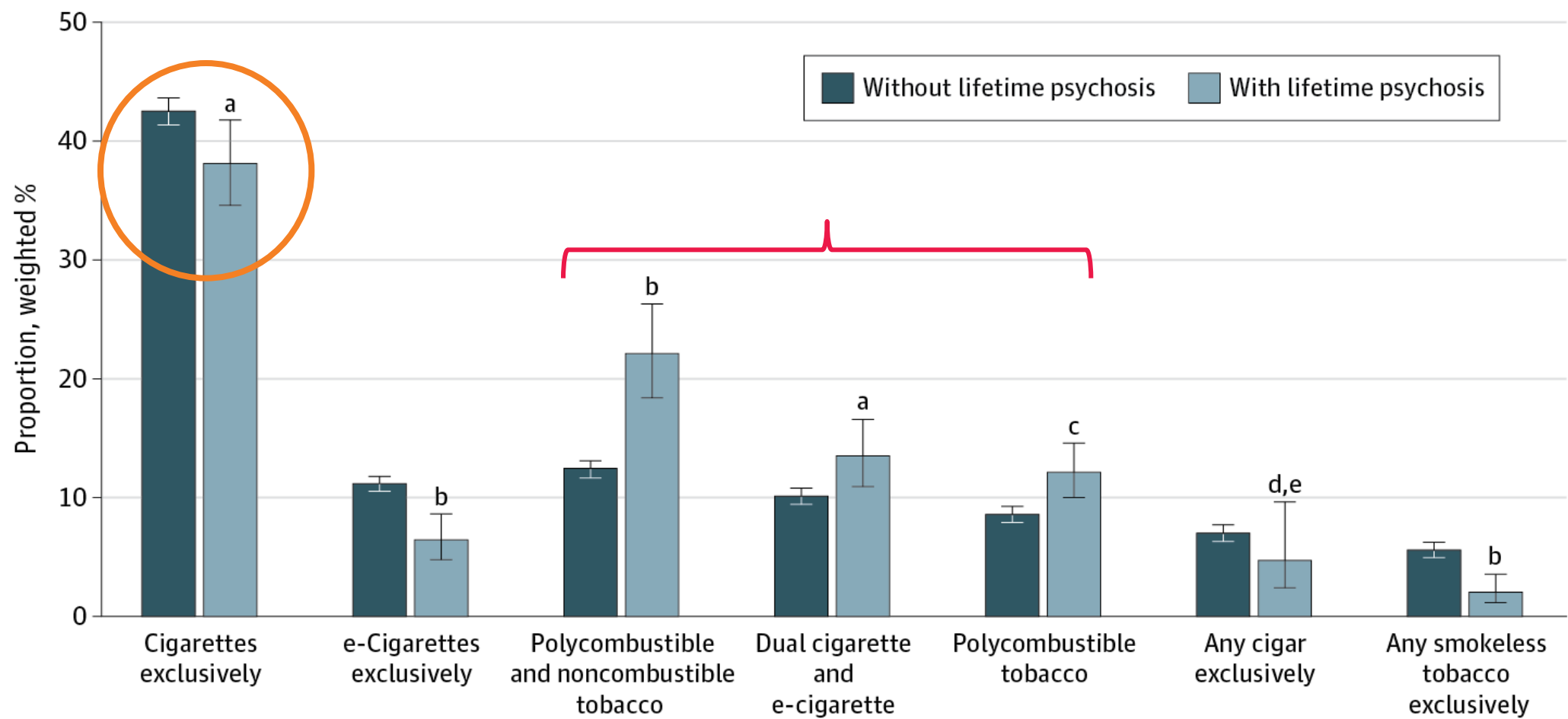


40% of those with SMI reported past month tobacco or nicotine vaping

Large gap between those with and without major depressive episodes



Higher poly-tobacco and nicotine use rates among community-dwelling adults with psychosis



Quit attempts and use of cessation aids higher among people with psychosis than those without

Table 4. Prevalence of Smoking Cessation Methods Used in Past 12 Months Among Community-Dwelling Adults With vs Without Lifetime Psychosis Who Smoked Cigarettes in Past Month

Strategies used to aid quitting in the past 12 mo	Adjusted weighted % (95% CI)		Unadjusted RR (95% CI)	Adjusted RR ^a (95% CI)
	With lifetime psychosis (n = 584)	Without lifetime psychosis (n = 6457)		
Used e-cigarettes or other electronic nicotine products	5.1 (3.0-7.2)	4.6 (4.0-5.3)	1.53 (0.92-2.14)	1.10 (0.63-1.57)
Used nicotine replacement therapy ^b	8.7 (5.5-11.8)	6.3 (5.6-7.1)	1.65 (1.08-2.22)	1.37 (0.87-1.87)
Used prescription tobacco cessation medications ^c	4.5 (2.5-6.4)	3.6 (2.9-4.2)	1.36 (0.82-1.90)	1.26 (0.70-1.81)
Used counseling, quitline, support group, web-based program ^d	5.6 (3.1-8.0)	2.5 (2.0-3.0)	2.86 (1.77-3.96)	2.25 (1.21-3.30)
Used any of the above	17.8 (13.4-22.3)	13.3 (12.2-14.3)	1.63 (1.27-1.99)	1.35 (1.00-1.70)
Made a quit attempt in past year	60.0 (54.4-65.7)	54.1 (52.5-55.7)	1.19 (1.10-1.28)	1.11 (1.01-1.21)

Abbreviation: RR, risk ratio.

^a Adjusted for age, sex, race and ethnicity, educational level, annual family income, binge alcohol use, cannabis and other substance use, and internalizing and externalizing problems (ie, validated measures of mental health disorders from the modified Global Appraisal of Individual Needs–Short Screener²⁸). Other substances included Ritalin, Adderall, painkillers, and sedatives or tranquilizers that were not used as prescribed; cocaine or crack; stimulants, such as methamphetamine or speed; and other drugs such as heroin, inhalants, solvent, or hallucinogens.

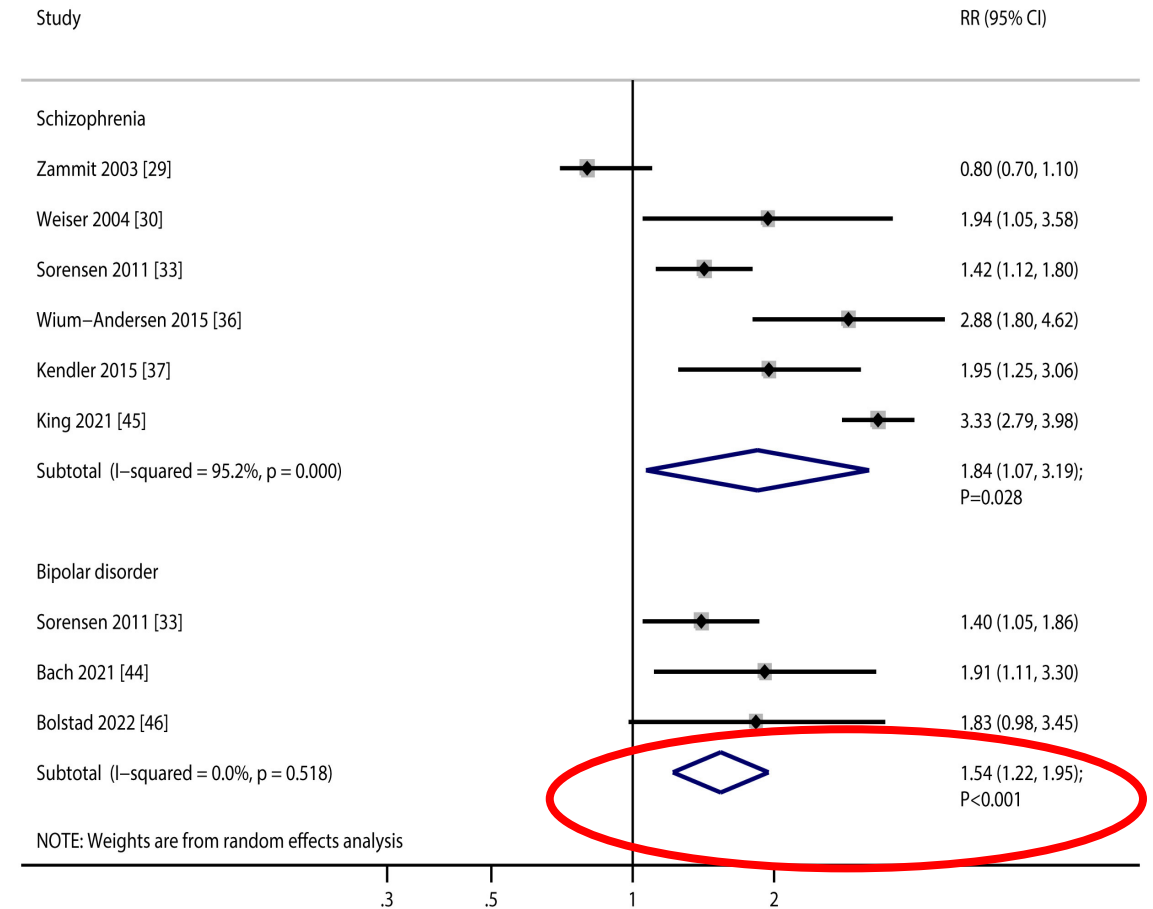
^b Nicotine patch, gum, inhaler, nasal spray, and lozenge.

^c Chantix, varenicline, Wellbutrin, Zyban, and bupropion.

^d Counseling; telephone helpline or quitline; books, pamphlets, and videos; tobacco cessation clinic, class, or support group; and online or web-based program.

Bidirectional link between smoking and schizophrenia and non-affective psychosis

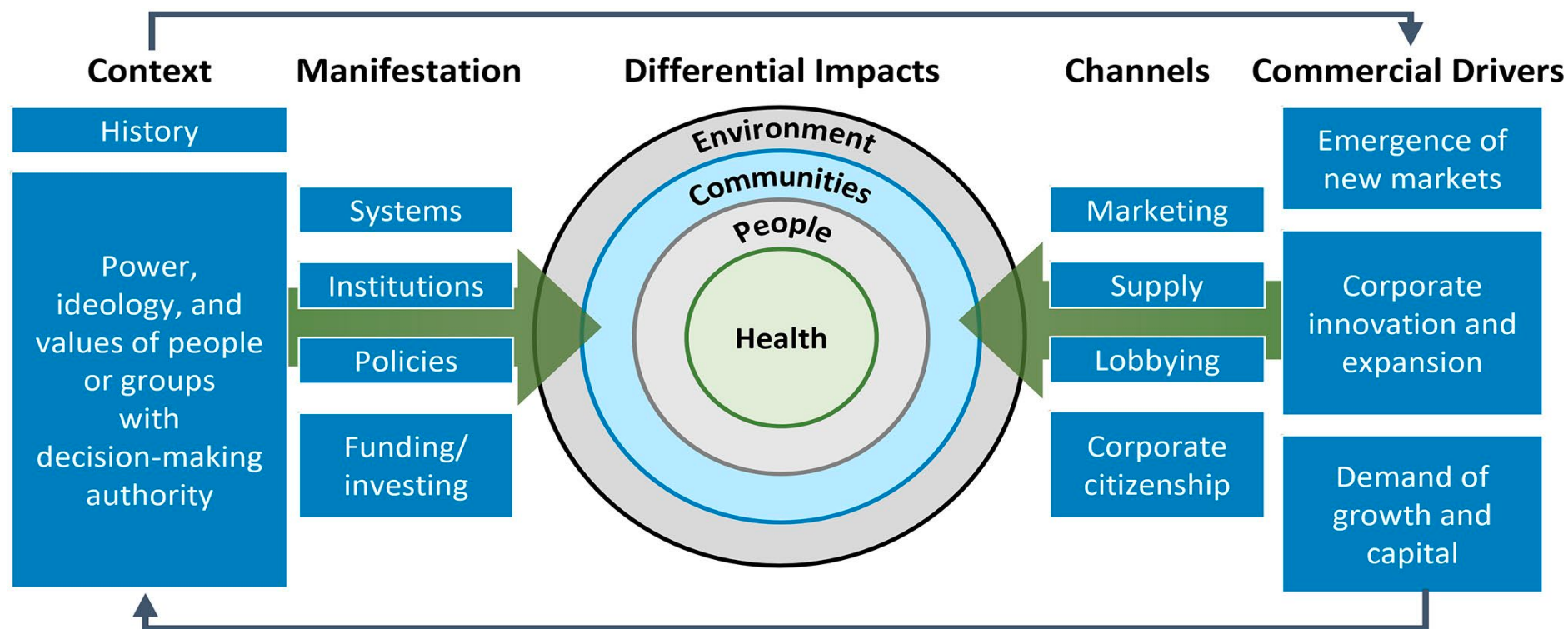
- Increased incidence of schizophrenia among people who smoke
- Increased incidence of non-affective psychosis among women who smoke
- Shared genetic risk between smoking and psychosis
- Meta-analyses showing an association between current and former smoking and SMI



People with SMI die 10-20 years earlier than the general population

- Majority of deaths are from cardiovascular and respiratory diseases, cancer, and diabetes mellitus
- Tobacco-related deaths contribute to half of the total deaths among people with schizophrenia, bipolar disorder, and major depressive disorder
 - People with schizophrenia have an increased mortality from tobacco-related cancers
- All three groups have an increased risk for cardiovascular mortality

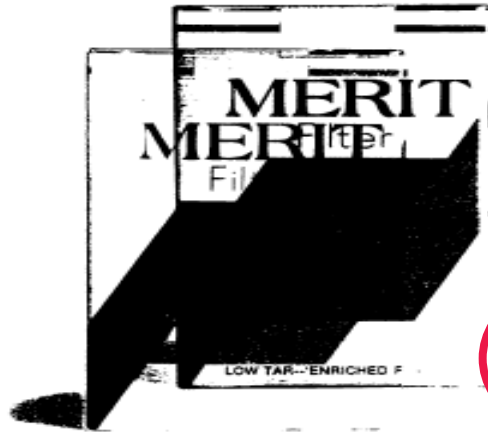
Disparities in tobacco use – a framework from the 2024 Surgeon General's Report



2024 Surgeon General's Report, dynamics that predispose, enable, and reinforce health disparities

The role of the tobacco industry in promoting tobacco use for “stress relief”, “mood enhancement”, “to cope”

Schizophrenic.



Other low tars are pretty one-dimensional. Dull. But the New Merit is a whole other story: big new taste with lower tar. And that's exciting. In fact, the New Merit has as much taste as cigarettes with up to 57% more tar. Big taste, lower tar, all in one. For New Merit, having two sides is just normal behavior.

The New Merit. We've got flavor down to a science.

SURGEON GENERAL'S WARNING: Quitting Smoking Now Greatly Reduces Serious Risks to Your Health.

204027076

IT'S A PSYCHOLOGICAL FACT: **PLEASURE HELPS YOUR DISPOSITION**

How's your disposition today?

EVER YIP LIKE A TERRIER when the store sends you the wrong package? That's only natural when little annoyances like this occur. But -- it's a psychological fact that pleasure helps your disposition! That's why everyday pleasures -- like smoking, for instance -- mean so much. So if you're a smoker, it's important to smoke the most pleasure-giving cigarette -- Camel.



For more pure pleasure... have a Camel

"I've tried 'em all -- but it's Camels for me!"
Rock Hudson



YOU CAN SEE RUGGED ROCK HUDSON STARRING IN U-F's "NEVER SAY GOODBYE"

ROCK HUDSON AGREES with Camel smokers everywhere: there is more pure pleasure in Camels! More flavor, genuine mildness! Good reasons why today more people smoke Camels than any other cigarette. Remember this: pleasure helps your disposition. And for more pure pleasure -- have a Camel!

No other cigarette is so rich-tasting yet so mild!

Collier's, The National Weekly



"COWBOYS NEED HEALTHY NERVES -- AND, BELIEVE ME, SO DO HOUSEWIVES"

Mrs. Phyllis L. Potter, Montclair, N. J., says:
"I don't doubt but what it takes healthy nerves to ride an outlaw horse! But any woman who is a house maker will agree with me that shopping, cooking, cleaning, washing, mending the duds -- a dozen times a day, and tending to all the other duties of running a household are enough to jangle anybody's nerves. I know that I have to be careful in choosing my cigarettes. I am a conditioned Camel smoker because I can smoke Camels freely without a hint of jumpy nerves. And they are the nicotinic cigarette I ever smoked!"

Eddie Woods, Champion Cowboy, says:
"To have nerves that run like this, I smoke only Camels. I've tried them all but Camels are my order! They have a natural mildness, and I like their taste better. Camels do not jangle my nerves, even when I smoke one after another."

How Are Your Nerves?

Fortunately indeed is that modern man or woman who does not get nervously upset. Here, jangled nerves seem, all too often, to be the result of the day.

If nerves are your problem, we suggest a check: Camels are made from **REAL, MILD, EXPENSIVE** tobacco than any other cigarette brand.

Everywhere you see Camels smoked more and more. People do more about nothing -- about good taste -- about their nerves. And Camels meet you on your nerves -- meet the postman.

Camel's Costlier Tobaccos

NEVER GET ON YOUR NERVES... NEVER TIRE YOUR TASTE

Research on tobacco industry documents showed that the industry perpetuated myths

- Questioning the connection between tobacco and cancer among people with schizophrenia

Phillip Morris funded research showed that “**persons who denied or repressed grief were more likely to develop cancer....long-term schizophrenics, outwardly calm...have no capacity for the repression of emotional events...and are biologically resistant to cancer**”

“Nicotine— Helping those who Help Themselves”

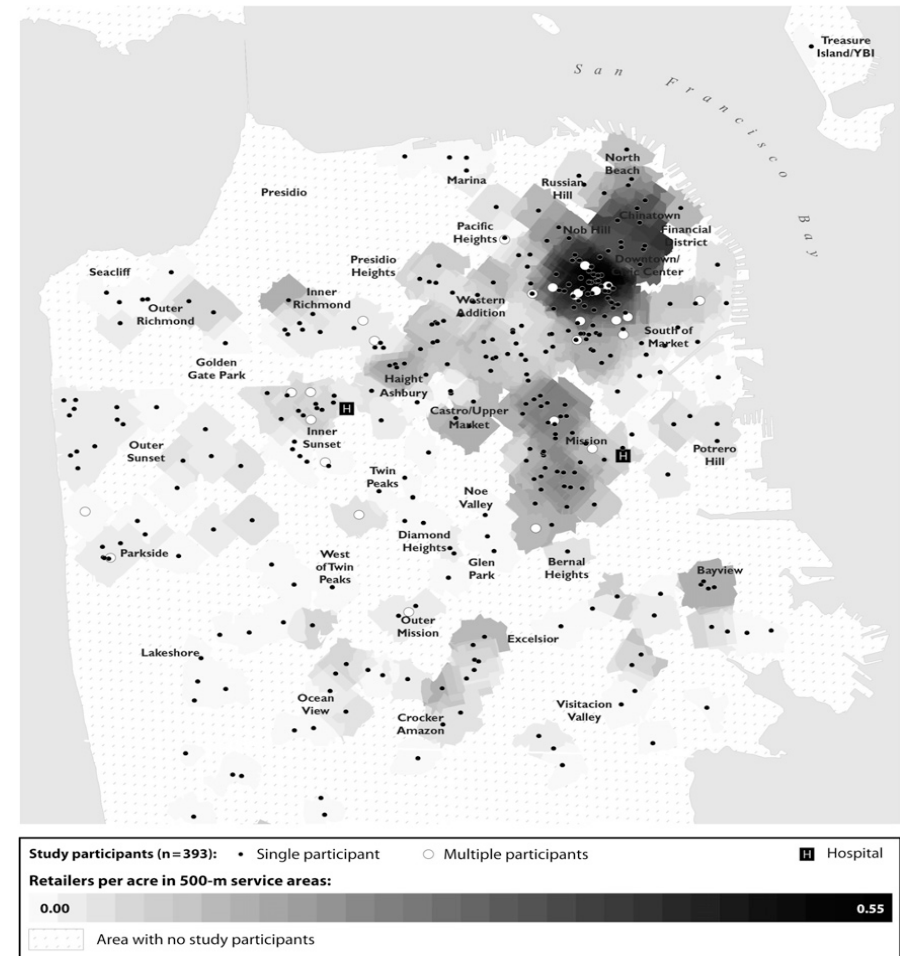
- “Self-Medication Hypothesis”

“The data strongly supports our initial hypothesis that nicotine, indeed, provides a form of self-medication in schizophrenia, especially against the so-called negative symptoms”

“Many people who use tobacco..do so because of some potential therapeutic benefit...such as to relieve schizophrenia...we need to pull away from this concept of demonism and treat nicotine like any other drug.”

High tobacco retail density and increased nicotine dependence among people with SMI

- Study based in San Francisco, CA
- People with SMI who smoked were 2-fold more likely to live in neighborhoods with high tobacco retail density
- Greater retail density is associated with poorer psychological functioning
- Higher nicotine dependence
- Lower readiness to quit



Barriers to access to treatment among people with SMI

- **Healthcare system-related factors**, like a lack of access to preventive care
 - Physical health concerns have not been prioritized
 - Providers are not trained and have low confidence in treating tobacco use
- **Service culture** in behavioral health and pessimism around behavior change
 - Belief that the “capacity to embrace behavior change” is low
- **Socio-environmental factors** like financial hardship, social isolation, lack of community resources
 - Homelessness, substance use

Despite these barriers people with SMI are interested in quitting and do quit tobacco use

- People with SMI who are engaged in mental health treatment are more likely to quit
- People with SMI are more likely to receive advice to quit
- No difference in making quit attempts or having an intention to quit
- Quit ratio 30% for those with SMI versus 46% for those without SMI

Interventions that address high levels of nicotine dependence, multiple attempts, and relapse prevention

Smoking quit rates by lifetime diagnoses of mental health conditions

Table 1 Tobacco smoking status and quit rates based on presence of psychiatric disorder in lifetime for individuals in the United States

Lifetime diagnosis	U.S. population (%)	Current smoker (%)	Lifetime smoker (%)	Smoking quit rates ^a (%)
No psychiatric diagnosis	50.7	22.5	39.1	42.5
Anxiety disorders				
Social phobia	12.5	35.9	54.0	33.4
Posttraumatic stress disorder	6.4	45.3	63.3	28.4
Agoraphobia	5.4	38.4	58.9	34.5
Generalized anxiety disorder	4.8	46.0	68.4	32.7
Panic disorder	3.4	35.9	61.3	41.4
Mood disorder				
Major depression	16.9	36.6	59.0	38.1
Dysthymia	6.8	37.8	60.0	37.0
Bipolar disorder	1.6	68.8	82.5	16.6
Psychotic disorder (nonaffective)	0.6	49.4	67.9	27.2

“Targeted smoking cessation strategies need to be part of comprehensive management of psychosis”

- Subpopulations who might benefit from tailored integration
 - Individuals 45 years and older with psychosis
 - Females with psychosis
 - Hispanic and Black adults with high nicotine dependence
- Health concerns are one of the biggest motivators for smoking cessation
- Build greater awareness and increase education among clinicians to offer treatment
- Attention to co-use with other substances, particularly cannabis

Greater awareness of harms – CDC Tips From Former Smokers Campaign



Media campaigns raising awareness



“People with a behavioral health condition, such as anxiety, depression, or substance use disorders, consume **40%** of all cigarettes.”

UCSF Smoking Cessation Leadership Center | National Center of Excellence for Tobacco-Free Recovery

Nearly **90%** of adults with schizophrenia said they smoke cigarettes



31%
OF ALL CIGARETTES ARE SMOKED BY PEOPLE WITH **MENTAL ILLNESSES.**

May is Mental Health Awareness Month. To learn more about how you can help, visit: www.cdc.gov/mentalhealth.

 source: CDC.gov

 **I ~~COVID~~ QUIT**

I have more self-esteem now that tobacco isn't controlling me.

—Petronilla, ex-smoker

CALL 1-800-QUIT-NOW Share your story #ICoVIDQuit ICoVIDQuit.org

Call for the scientific and public health community to innovate around tobacco cessation

Ideas and Opinions

Annals of Internal Medicine

Opportunities for Innovation in Smoking Cessation Therapies: A Perspective From the National Institutes of Health and U.S. Food and Drug Administration

Haider J. Warraich, MD; Brian A. King, MPH, PhD; Wilson M. Compton, MD, MPE; Evan S. Herrmann, PhD; Mary Thanh Hai, MD; Robert M. Califf, MD; and Monica M. Bertagnoli, MD

Cigarette smoking kills about 500 000 Americans a year. Therefore, any effort to reduce death and disability needs to help the nation's 28 million adult cigarette smokers quit (1, 2). More than half of smokers try to quit each year, yet only 31% of smokers interested in quitting receive counseling or medications (3).

The U.S. Department of Health and Human Services

cessation or reduction in risk for relapse that could be considered in submissions: 1) reduction in urge to smoke and relief of cue-induced craving in former smokers and 2) relief of withdrawal symptoms not associated with a cessation attempt. The NRT guidance also presents 2 treatment regimens that have not been tested to achieve an indication: pretreat-

We can play a role in reducing tobacco use...

- High rates of smoking among people with SMI
- Shared genetic risk between smoking and SMI
- Strong commercial, structural and socio-environmental drivers of use behaviors among people with SMI
- Quit attempts and interest in cessation are high
- Need for integration of tobacco treatment into comprehensive psychiatric care
- Need for media and public health campaigns to raise awareness that **tobacco is a behavioral health issue**

Neurobiology and Recovery: Addressing Nicotine Use Amongst Individuals with Serious Mental Illness

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**UNIVERSITY OF
TORONTO**

**National Behavioral Health Network for Tobacco and Cancer
Control/UCSF Smoking Center Webinar,
July 15, 2025**

Disclosures – Tony P. George, M.D., FRCPC

- **Research Funding:** CIHR, NIDA, TRDRP, CAMH Foundation
- **Co-Principal Editor,** *Neuropsychopharmacology* (NPP)
- **Advisory Boards:** University of Toronto TC3 Consortium; DSMB Chair, Yale Tobacco Regulatory Center (TCORS); Yale K12 Faculty Training Program in Addictions Research; Office of US Surgeon General; Jacob Waletzky Award Selection Committee, Society for Neuroscience (SfN)



Case Review

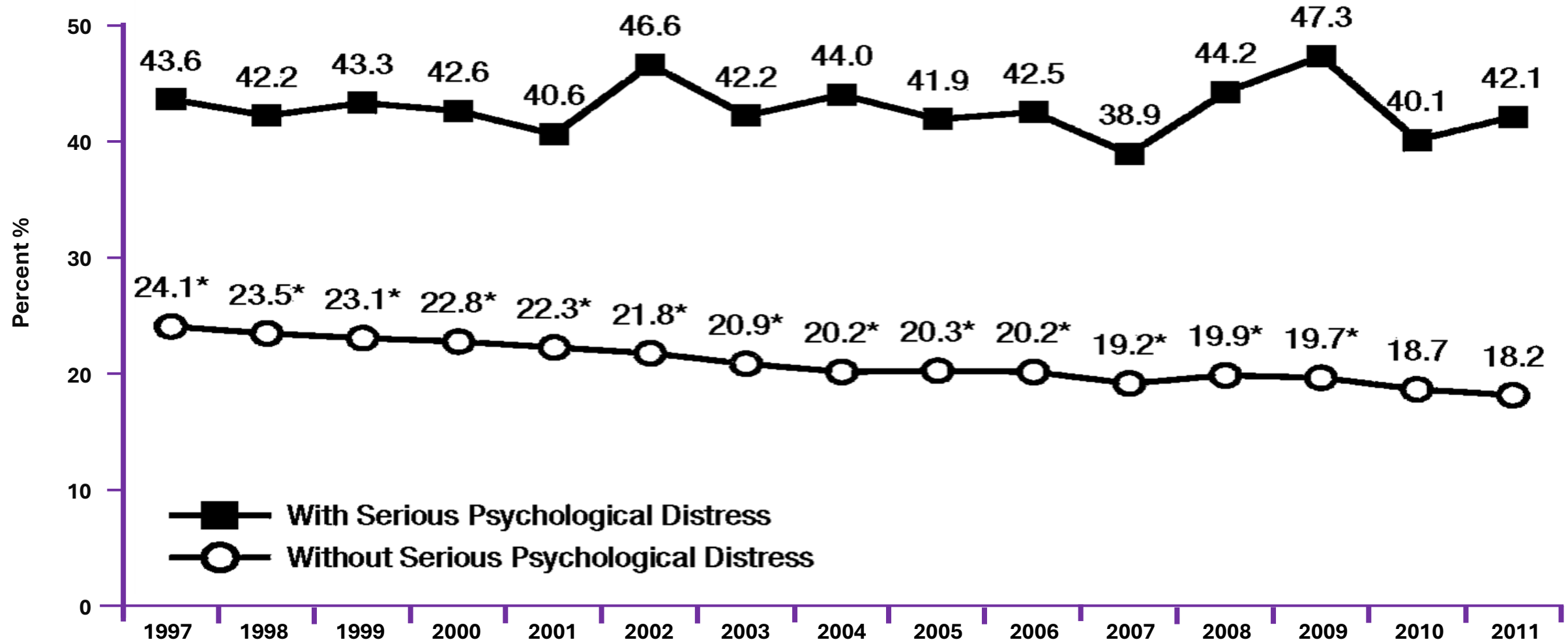
- Joe is 40 year old black male with schizophrenia, never married. Originally from Kingston, Jamaica, he lives in a shelter in Toronto, Canada.
- He smokes 3 packs per day (illegal cigarettes), first cigarette is within 2 minutes of awakening. He also started smoking e-cigarettes ("Vapes").
- Multiple quit attempt failures since started smoking at age 14. Has tried all NRTs (gum, patch, inhaler)
- Psychosis is well-managed with depot antipsychotic (Paliperidone), at 100 mg monthly. He gets paranoid at the shelter "they are all out to get me there"
- Family Hx+ for CAD, Lung CA. He had anterior wall MI 6 months ago, after months of chest pain, took himself to local general hospital.
- He doesn't really want to quit, but does not want to die from a heart attack ...

Mental Health Impacts of Tobacco

- Higher rates of smoking in people with mental illness (MI) makes them more vulnerable to tobacco-related medical illness
(Mackowick et al., 2012; Praecht et al., 2025)
- People with MI spend up to 25% of their disability income on tobacco
(Ziedonis et al., 2008)
- Tobacco addiction shortens the lives of people with MI by 13 years
(Williams et al., 2011)
- Quitting smoking in people with MI leads to better psychiatric and substance use disorder outcomes, including reductions in depression and alcohol use, and less suicidal behaviours, impulsivity and aggression
(Mackowick et al., 2012; Morozova et al., 2015; Praecht et al., 2025)

Current Smoking among Adults Aged 18 or Older

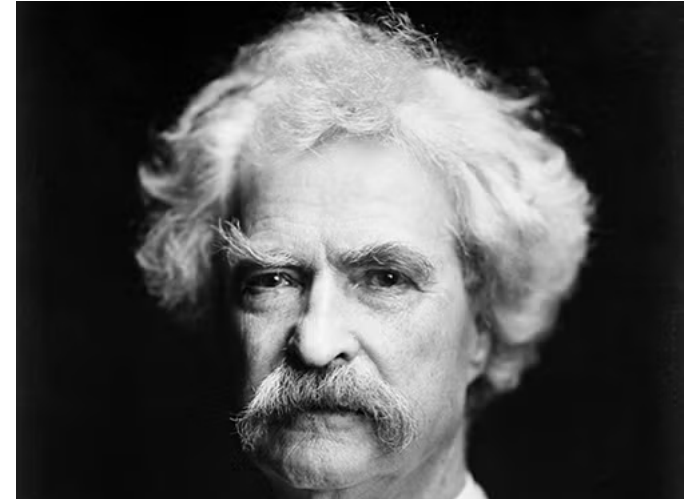
Based on Serious Psychological Distress Status of Previous Month (NHIS, 1997 to 2011)



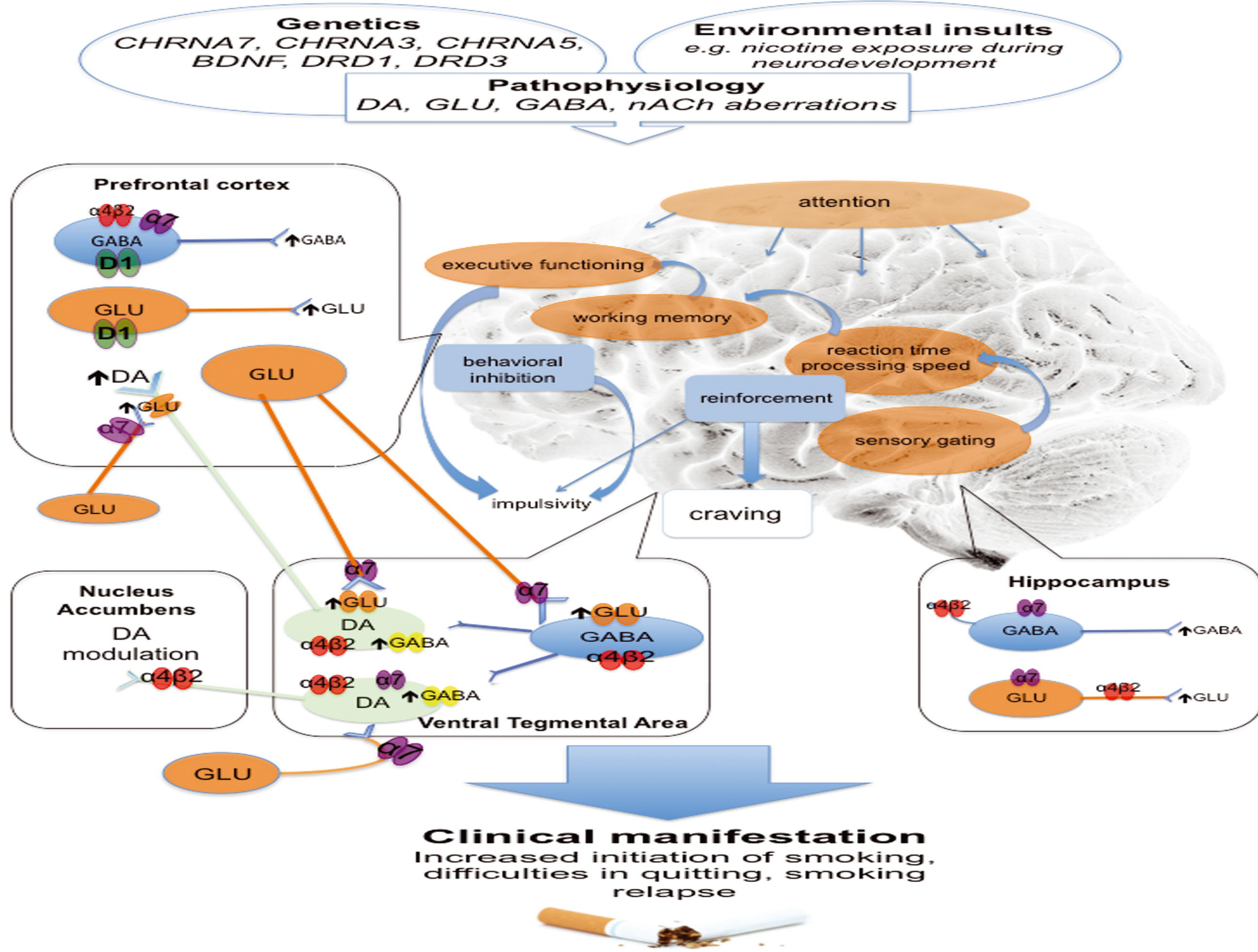
*Difference between estimate and estimate for 2011 is statistically significant at the 0.5 level

**Quitting smoking is easy –
I've done it several
hundred times ...**

- Mark Twain



Vulnerability markers for tobacco addiction in schizophrenia

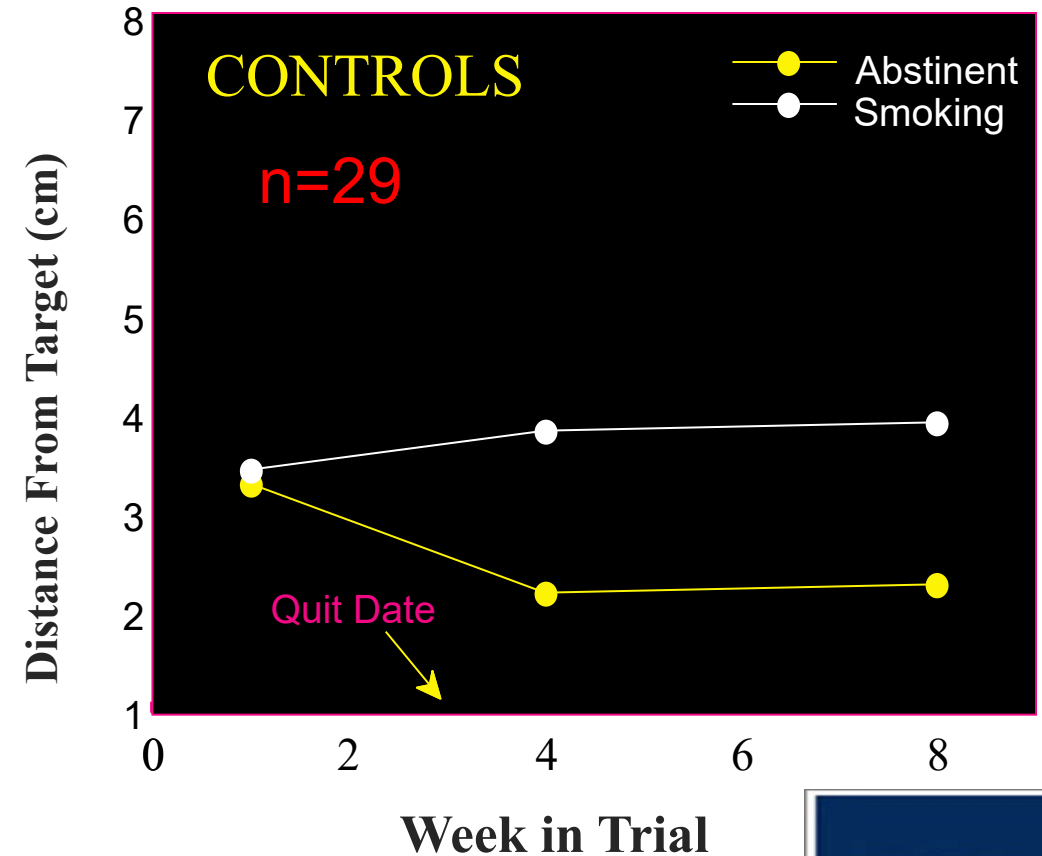
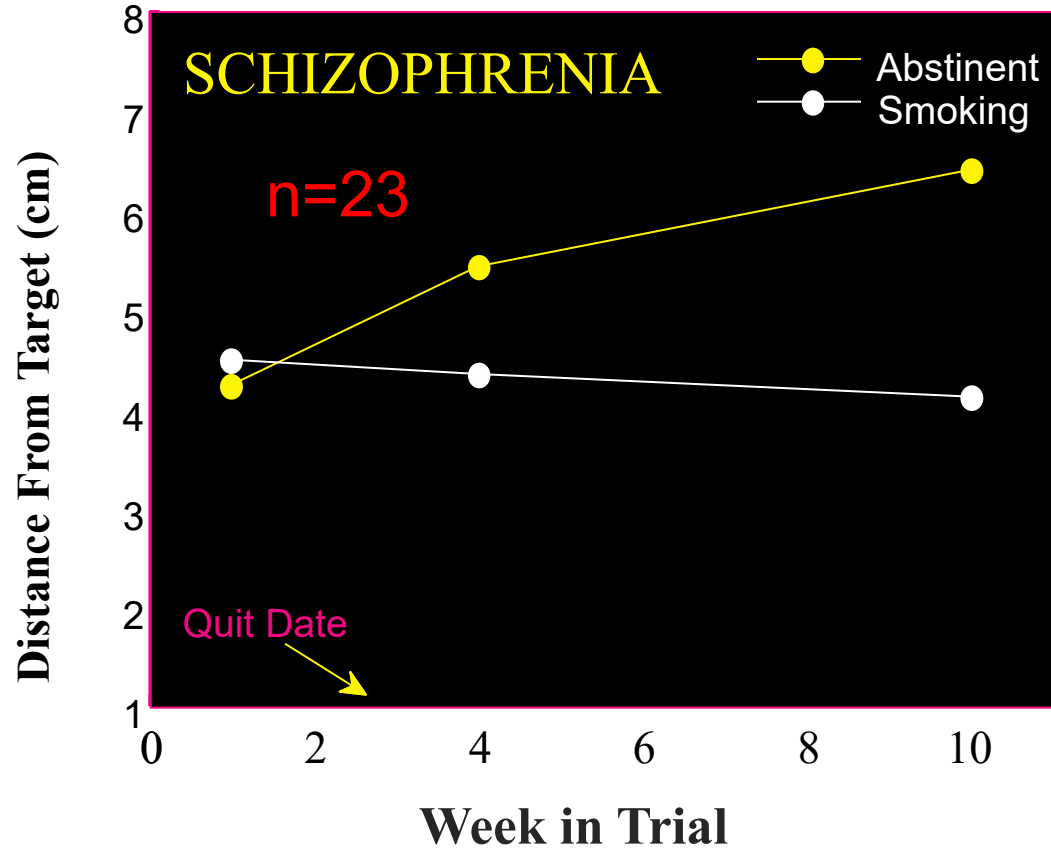


Wing, VC et al. (2012).
Ann. NY Acad. Sci. 1249:
89-106

Biobehavioural Vulnerability Factors to Tobacco Addiction in Schizophrenia

- Biochemical (reduced nAChR levels, higher baseline nicotine levels in Sz versus Controls)
- Genetic ($\alpha 7$ nAChR, $\alpha 3$ nAChR, COMT, DISC 1, Reelin)
- Behavioral (deficits in reinforcement/reward)
- Neurocognitive (neurophysiological/neuropsychological)

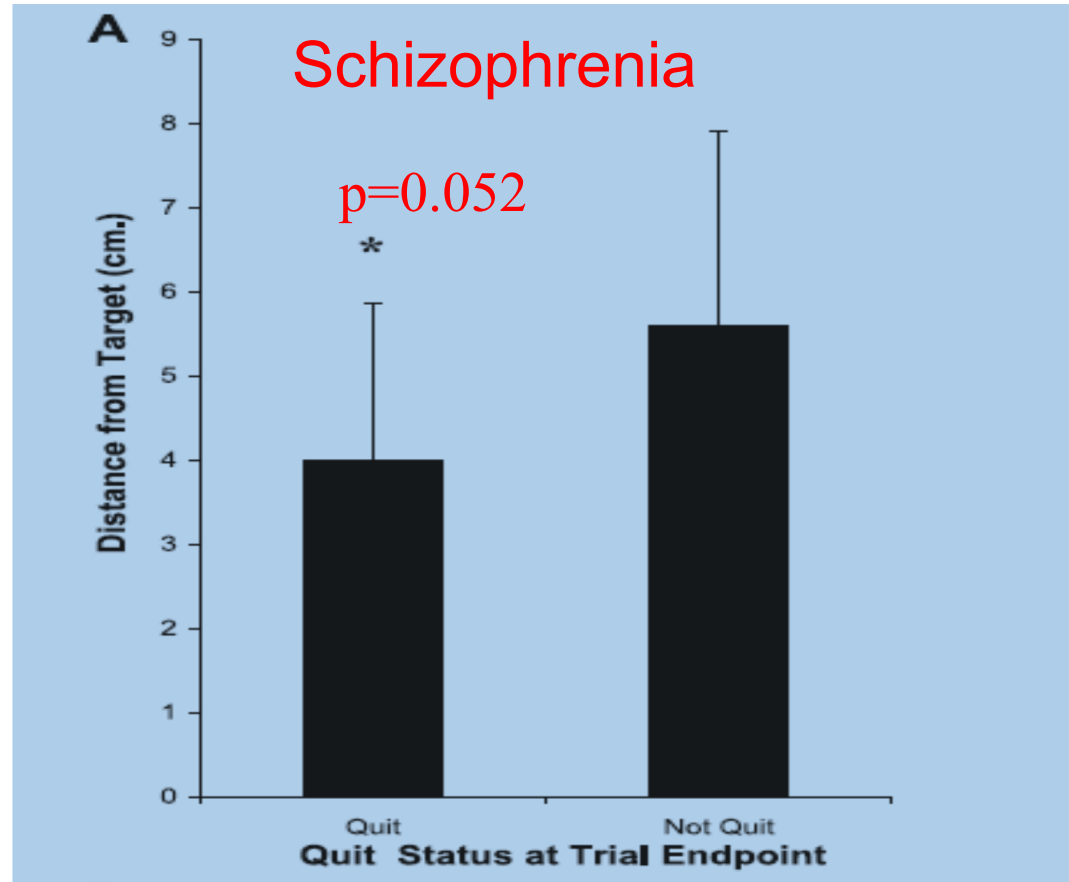
Effects of Abstinence on Visuospatial Working Memory (VSWM) in Smokers with Schizophrenia



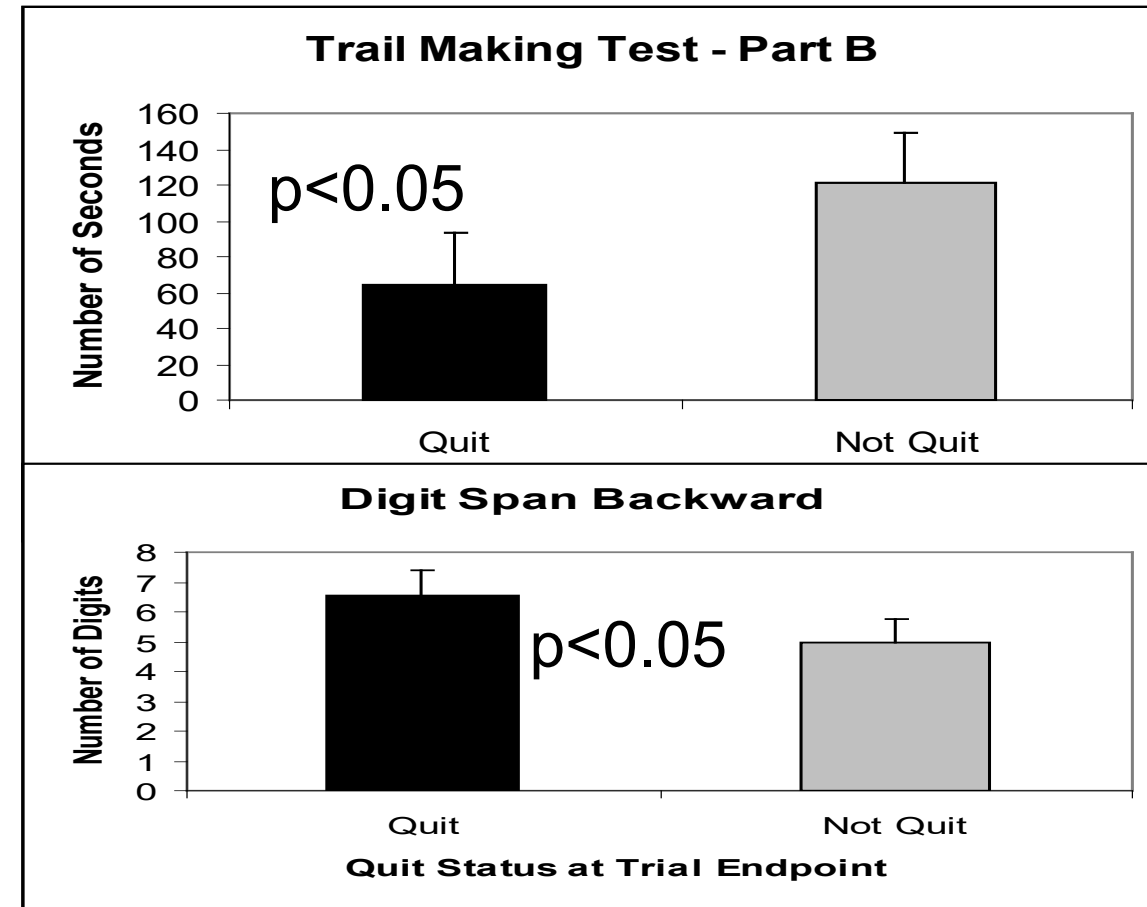
George, T.P. et al. (2002). Neuropsychopharmacology 26: 75-85.



Deficits in Frontal-Executive Performance Predict Smoking Cessation Failure in Schizophrenia



Dolan, S.L., Sacco, K.A. et al., (2004).
Schizophrenia Res. 70: 263-275.



Moss, T.G. et al. (2009). Drug Alcohol
Depend. 104: 94-99.

An approach to tobacco treatment in smokers with serious mental illness

Reduced Smoking – A Viable Target or Not?

- Many people who smoke are simply unable to quit smoking.
- Should sustained reductions in smoking been considered a goal of tobacco treatment or should reduction be a transitional goal towards eventual smoking abstinence? (Hughes, 2002; George and Vessicchio, 2002; McChargue et al., 2002)
- One study suggests that sustained smoking reductions (50% reduction) do not reduce cancer or cardiac disease risk (Tverdal and Bjartveit, 2006).

Cigarette Smoking, Cytochrome P450 and Psychotropic Drug Plasma Levels

- **Metabolized by CYP 1A2/3A4**

- Clozapine
- Olanzapine
- Haloperidol
- Chlorpromazine
- Caffeine

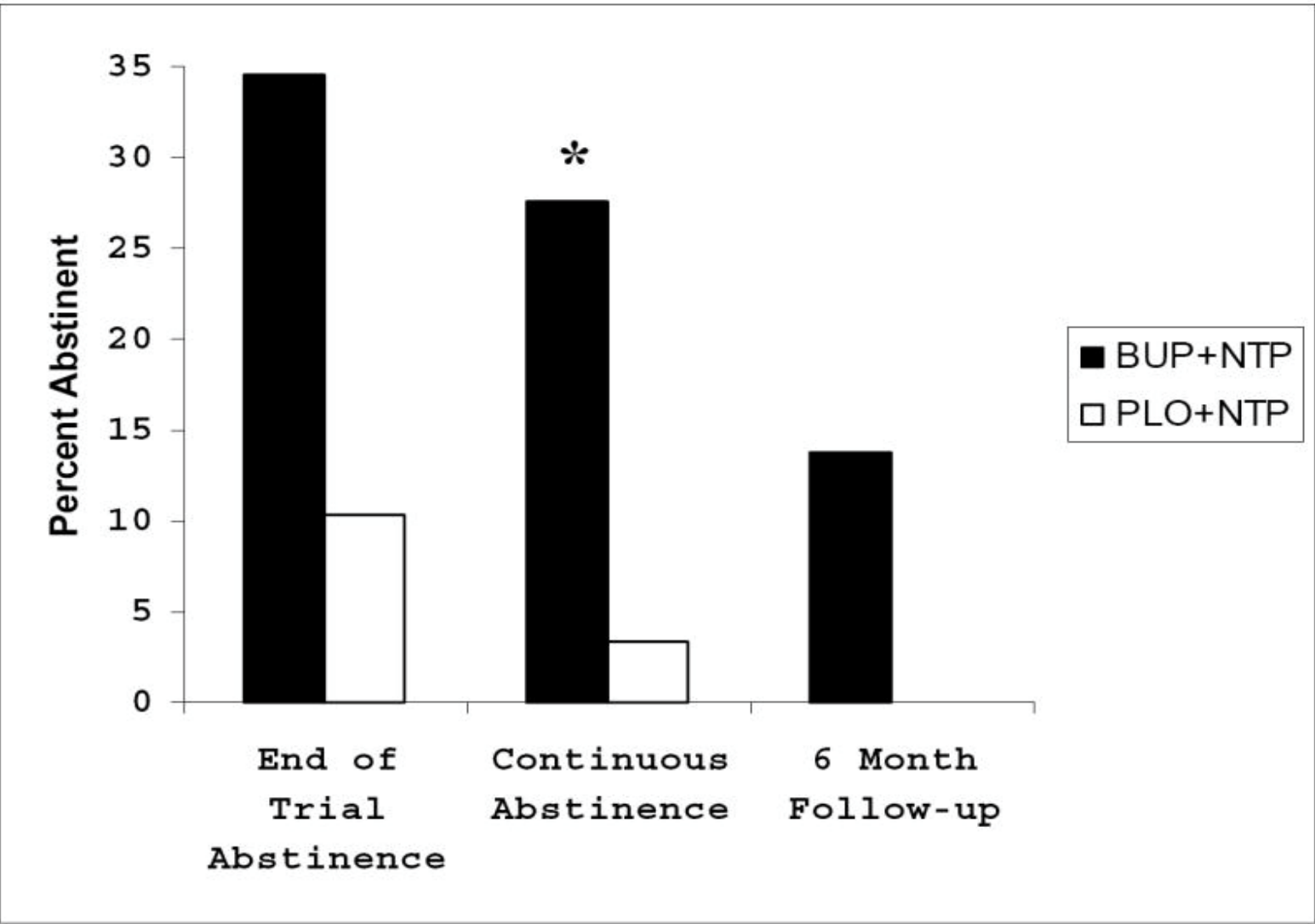
- **Not Metabolized**

- Risperidone
- Ziprasidone
- Aripiprazole
- Quetiapine
- Bupropion
- SSRIs

DeLeon, J. (2004). *Psychiatric Serv.* 55: 491-493

George, T.P. (2023). *Cecil Medicine* 27th Edition

Effects of Bupropion SR versus Placebo Combined with Nicotine Patch for Smoking Cessation in People with Schizophrenia



Varenicline (Chantix®)

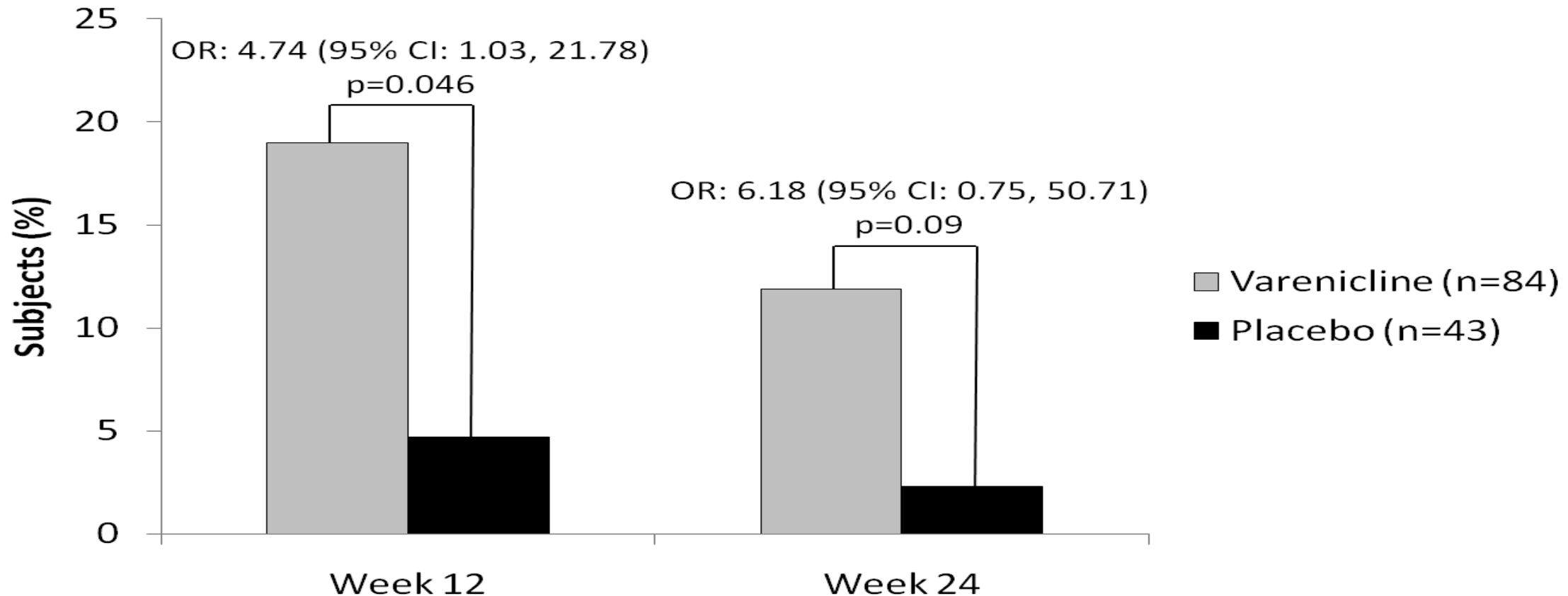


- An $\alpha 4\beta 2$ -selective nAChR partial agonist
- Approved by the FDA in 2006 and by Health Canada in 2007.
- In Phase III clinical trials, demonstrated superiority to both bupropion SR and placebo in continuous abstinence outcomes (Gonzalez et al., 2006, Jorenby et al., 2006)
- Prevents smoking-relapse with treatment up to 24 weeks (Tonstad et al., 2006).
- Dosing regimen is 0.5 mg qd x 3 days, then 0.5 mg bid x 4 days, then up to 1.0 mg bid for 12 weeks, with a label to extend treatment to 24 weeks as necessary.

Varenicline – Side Effects

- Main side effects are nicotine-like: Nausea (~30%), insomnia, headache and abnormal dreams.
- Black Box warnings issued by FDA, Health Canada and EMEA regarding anecdotal reports of treatment-emergent suicidality, homicidality, aggression, psychosis and mania.

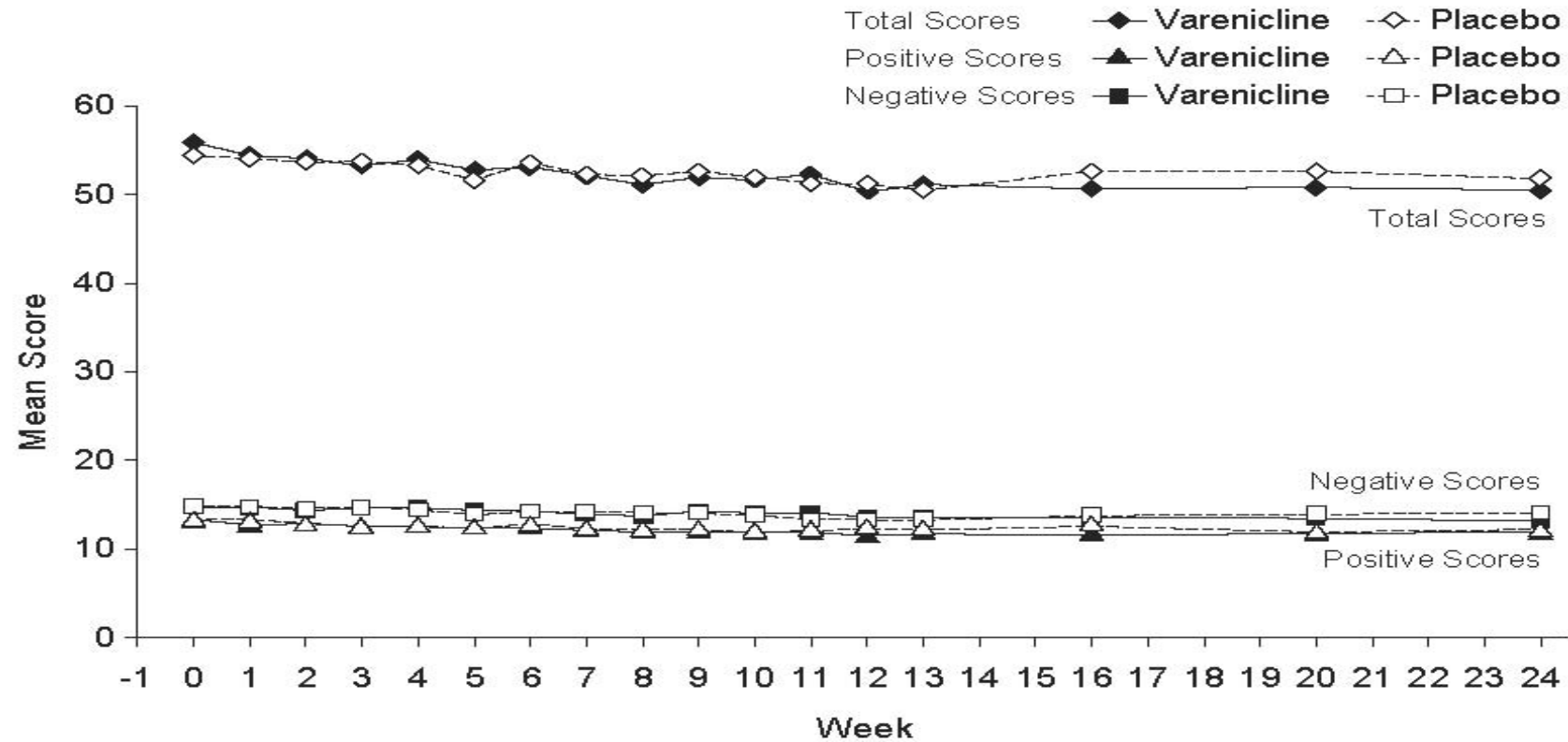
Varenicline for Smoking Cessation in People with Schizophrenia (N=127)



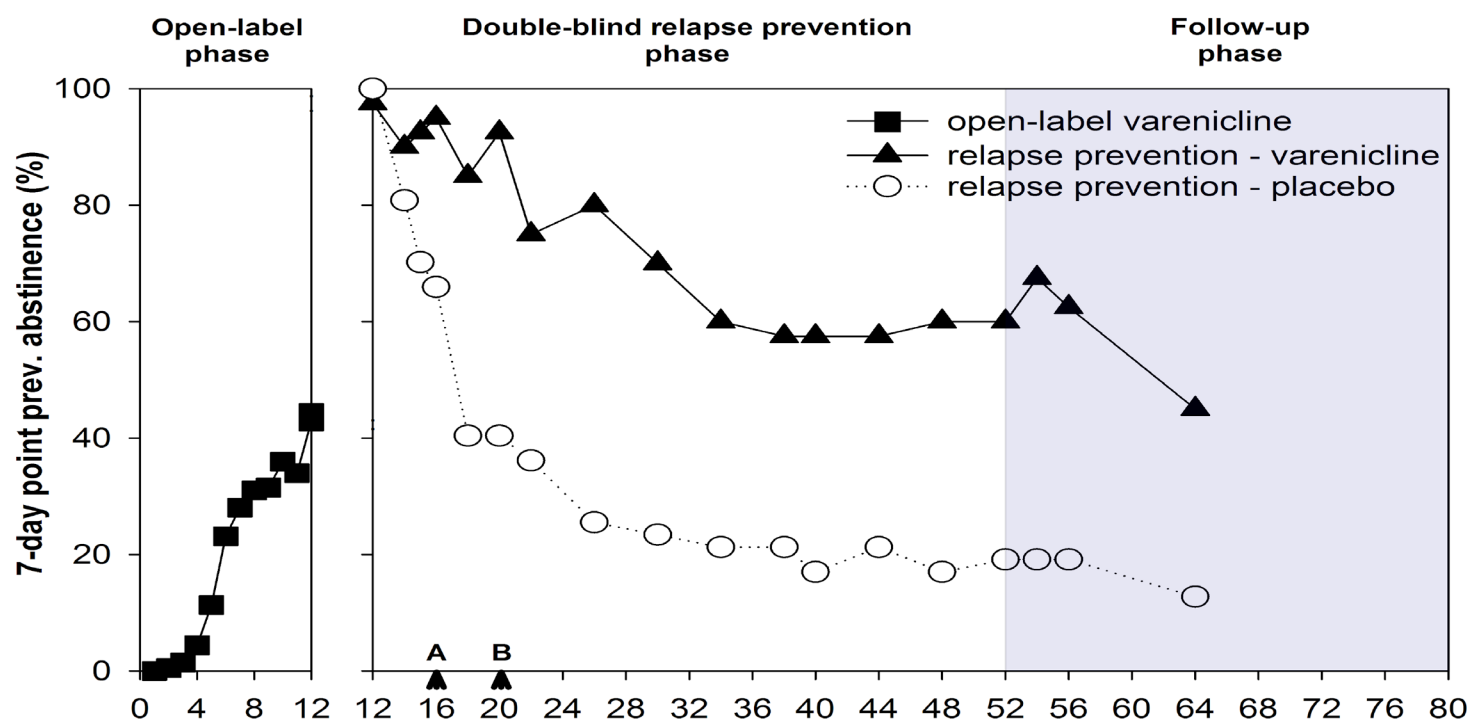
Analysis population = ITT minus 1 subject randomized to varenicline who did not receive treatment

Williams, J.M., Anthenelli, R.M., Morris, C., Tredow, J., Thompson, J.R., Yunis, C., George, T.P. (2012). J. Clin. Psychiatry. 73: 654-660.

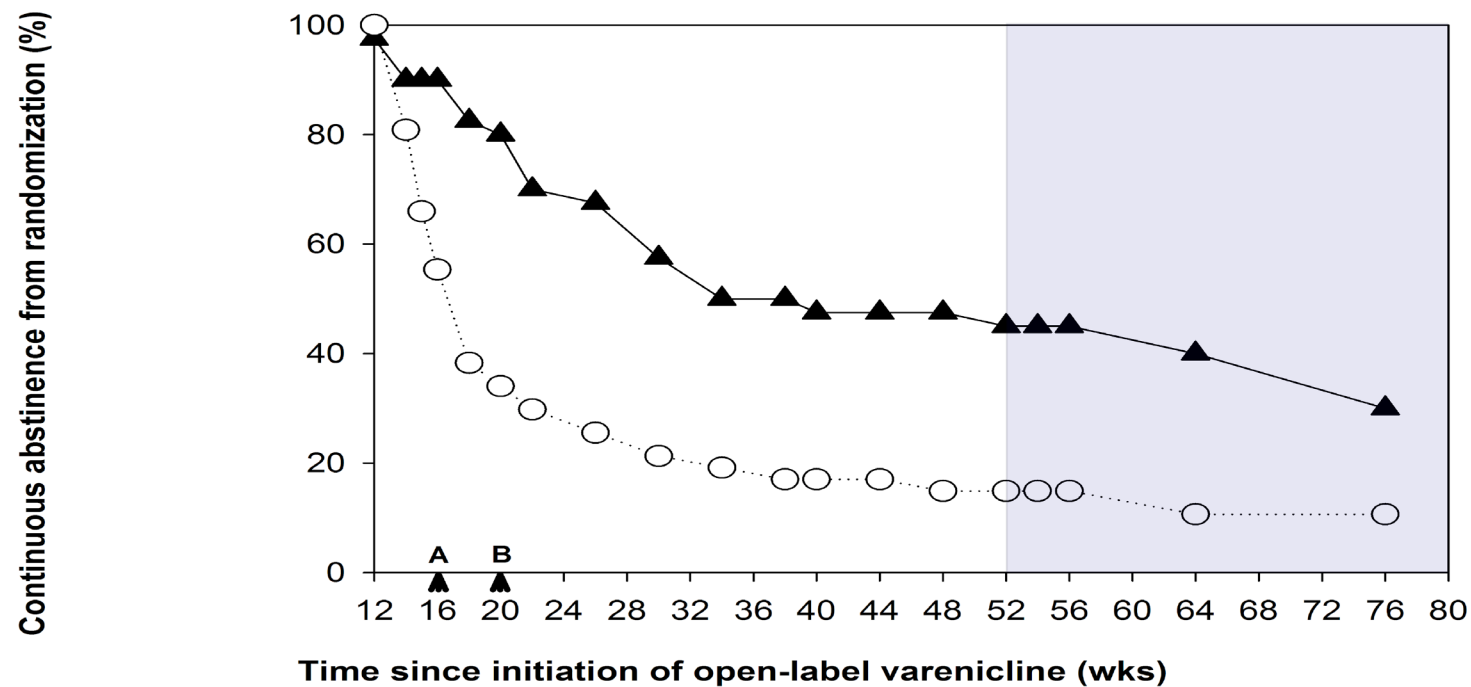
Varenicline Effects on Positive and Negative Symptoms in Smokers with Schizophrenia



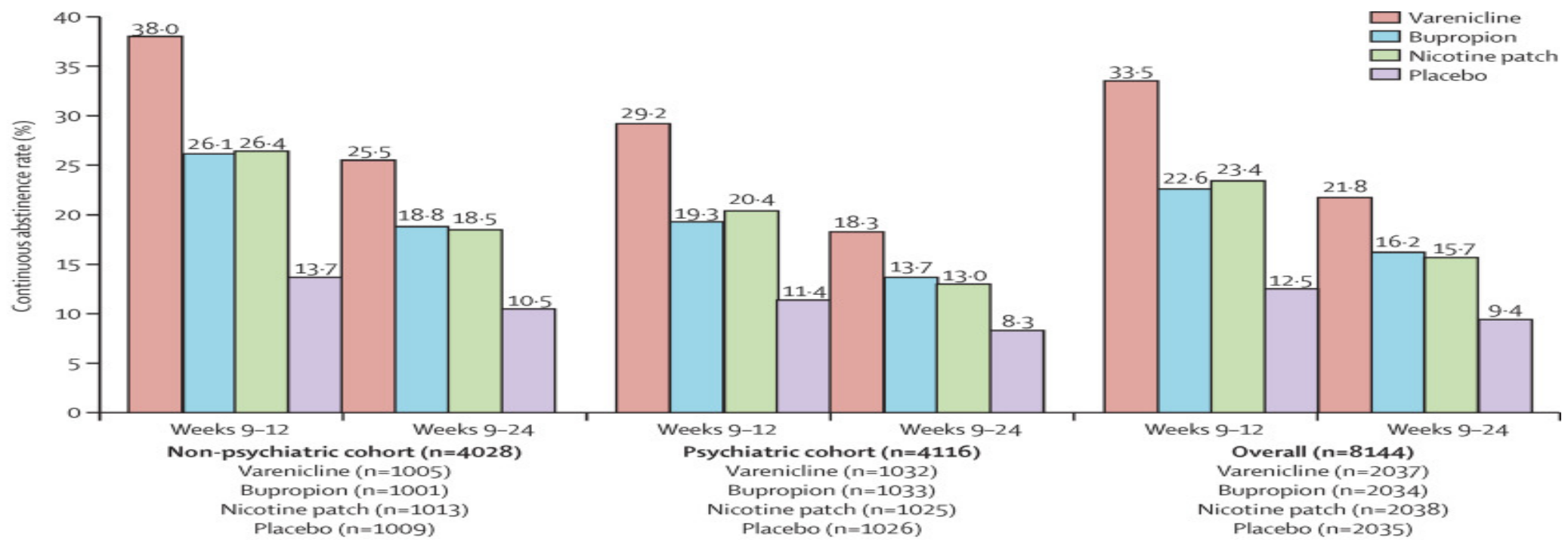
Williams, J.M. et al. (2012). J. Clin. Psychiatry.73: 654-660.



Evins, AE et al., 2014. JAMA . 311: 145-154.

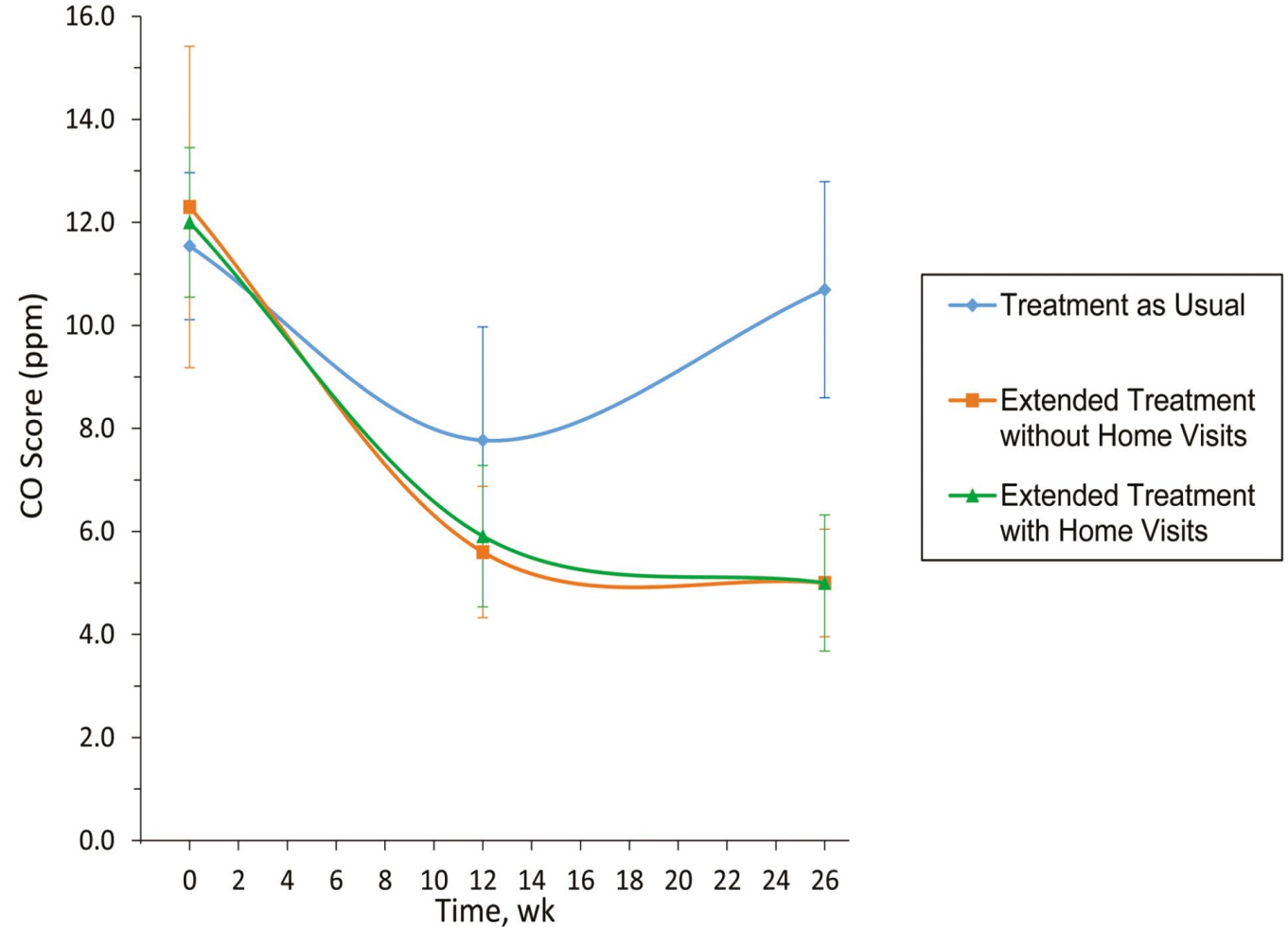
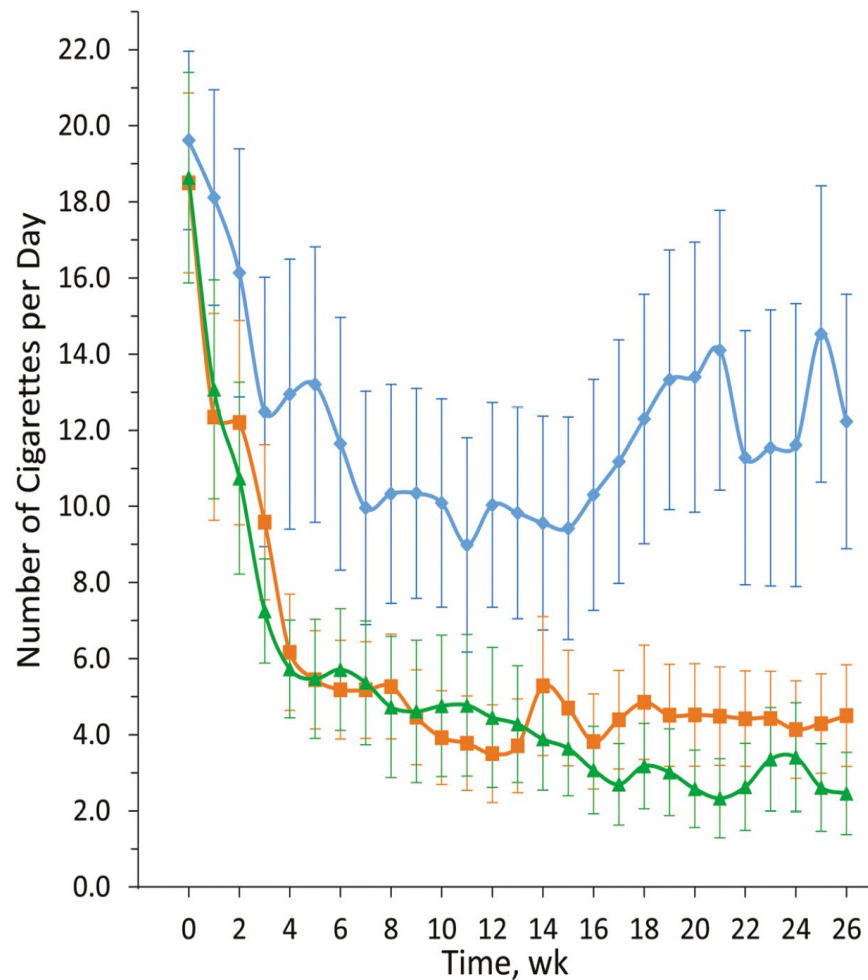


EAGLES Study – Randomized Comparison of Varenicline, Bupropion SR, Nicotine Patch and Placebo for Smoking Cessation in Mentally Ill versus Non-Mentally Ill Smokers (N=8144)



OR (95% CI) p value	Weeks 9-12	Weeks 9-24	Weeks 9-12	Weeks 9-24	Weeks 9-12	Weeks 9-24
Primary comparisons						
Varenicline vs placebo	4.00 (3.20-5.00) p<0.0001	2.99 (2.33-3.83) p<0.0001	3.24 (2.56-4.11) p<0.0001	2.50 (1.90-3.29) p<0.0001	3.61 (3.07-4.24) p<0.0001	2.74 (2.28-3.30) p<0.0001
Bupropion vs placebo	2.26 (1.80-2.85) p<0.0001	2.00 (1.54-2.59) p<0.0001	1.87 (1.46-2.39) p<0.0001	1.77 (1.33-2.36) p<0.0001	2.07 (1.75-2.45) p<0.0001	1.89 (1.56-2.29) p<0.0001
Secondary comparisons						
Nicotine patch vs placebo	2.30 (1.83-2.90) p<0.0001	1.96 (1.51-2.54) p<0.0001	2.00 (1.56-2.55) p<0.0001	1.65 (1.24-2.20) p=0.0007	2.15 (1.82-2.54) p<0.0001	1.81 (1.49-2.19) p<0.0001
Varenicline vs nicotine patch	1.74 (1.43-2.10) p<0.0001	1.52 (1.23-1.89) p=0.0001	1.62 (1.32-1.99) p<0.0001	1.51 (1.19-1.93) p=0.0008	1.68 (1.46-1.93) p<0.0001	1.52 (1.29-1.78) p<0.0001
Bupropion vs nicotine patch	0.98 (0.80-1.20) p=0.8701	1.02 (0.81-1.28) p=0.8645	0.94 (0.75-1.16) p=0.5467	1.07 (0.83-1.39) p=0.5824	0.96 (0.83-1.11) p=0.5797	1.04 (0.88-1.24) p=0.6002
Varenicline vs bupropion	1.77 (1.46-2.14) p<0.0001	1.49 (1.20-1.85) p=0.0003	1.74 (1.41-2.14) p<0.0001	1.41 (1.11-1.79) p=0.0047	1.75 (1.52-2.01) p<0.0001	1.45 (1.24-1.70) p<0.0001

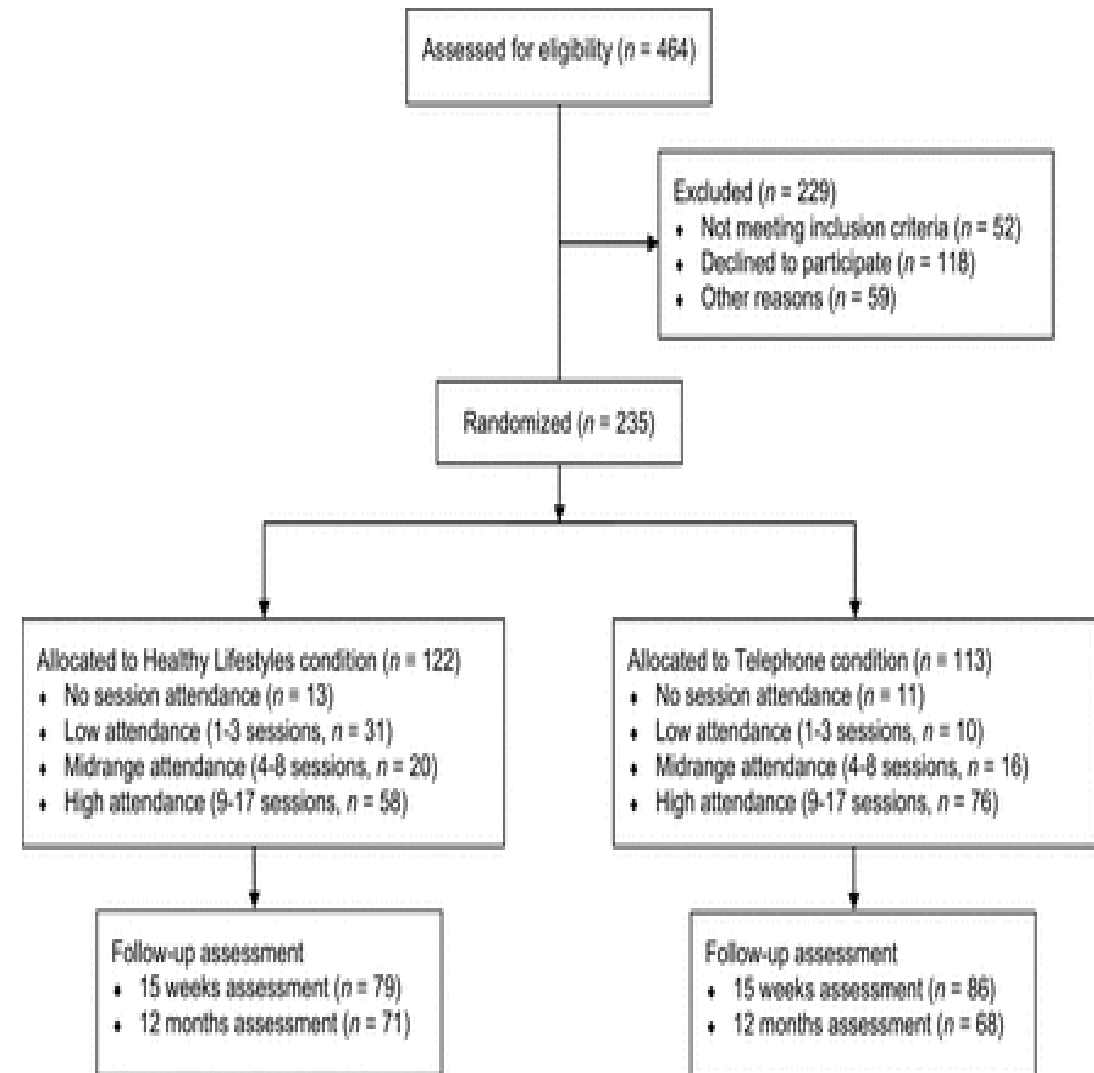
Effect of Combination Extended Treatment (COMB-EXT) with or without Home Visits compared to treatment as usual (TAU) on measures of smoking behavior.



Healthy Lifestyle Interventions for Psychotic Smokers

- There were no significant differences between intervention conditions in CVD risk or smoking outcomes at 15 weeks or 12 months, with improvements in both conditions (12 months: 6.4% confirmed point prevalence abstinence rate; 17% experiencing a 50% or greater smoking reduction; mean reduction of 8.6 cigarettes per day; mean improvement in functioning of 9.8 points).

Baker, AL et al. (2015). *Nicotine Tob. Res.* 17: 946-954.



Varenicline for Smoking Cessation in Bipolar Disorder

Methods:

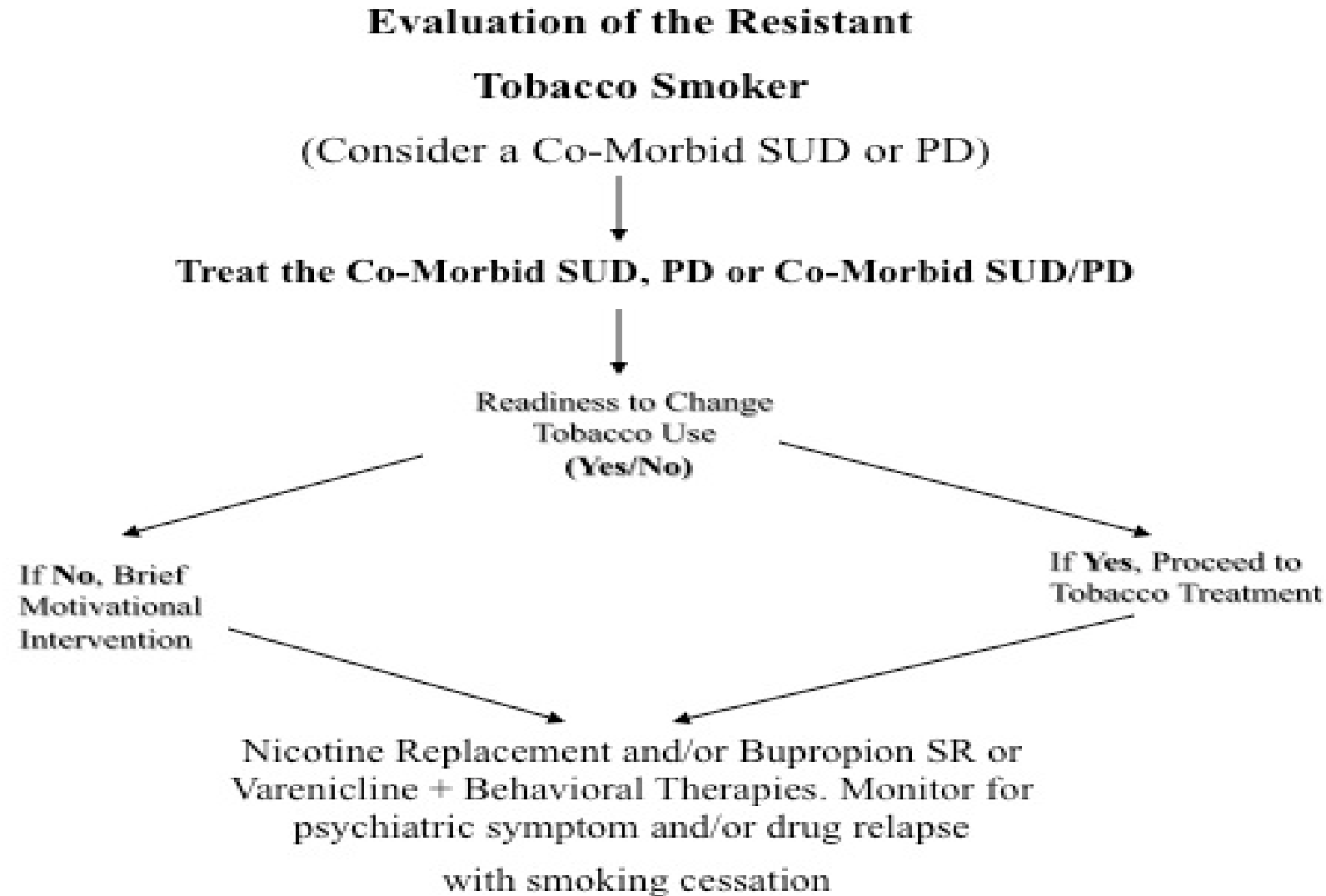
- Clinically stable adult patients with DSM-IV bipolar disorder (n = 60) who smoked ≥ 10 cigarettes per day were randomized to a 3-month, double-blind, placebo-controlled varenicline trial and a 3-month follow-up.
- The primary outcome was defined as a 7-day point prevalence of self-reported no smoking verified by expired carbon monoxide level < 10 ppm at 12 weeks.

Results:

- At 3 months (end of treatment), significantly more subjects quit smoking with varenicline (n/n = 15/31, **48.4%**) than with placebo (n/n = 3/29, **10.3%**) (OR = 8.1; 95% CI, 2.03-32.5; $P < .002$).
- Abnormal dreams occurred significantly more often in varenicline-treated subjects (61.3%) than in those receiving placebo (31%); $P = .04$. Eight varenicline-treated and 5 placebo-assigned subjects expressed fleeting suicidal ideation ($p = \text{NS}$).

Chengappa, KNR et al. (2014). J. Clin. Psychiatry. 75: 765-772.

FIGURE 1: Algorithm for Assessment and Treatment of Co-Morbid Tobacco Smokers





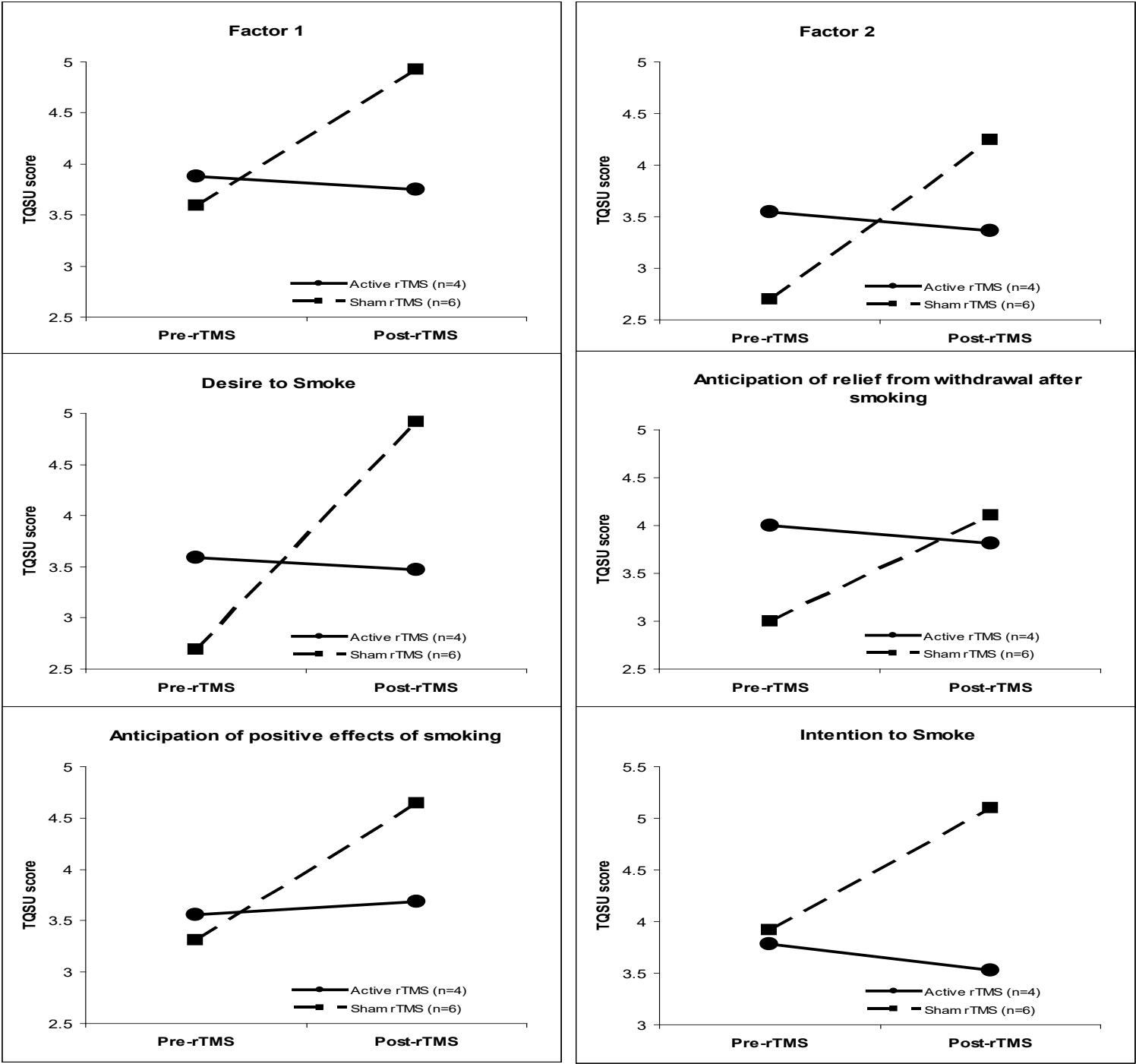
Caroline Wass, Ph.D.

r epetitive **T** ranscranial **M** agnetic **S** timulation

- Stimulates the cortex by trains of magnetic pulses.
- Frequencies of 1 to 50Hz
- rTMS has recently been used to treat neuropsychiatric disorders (e.g. depression, schizophrenia, parkinson's disease)

rTMS reduces tobacco cravings in patients with schizophrenia

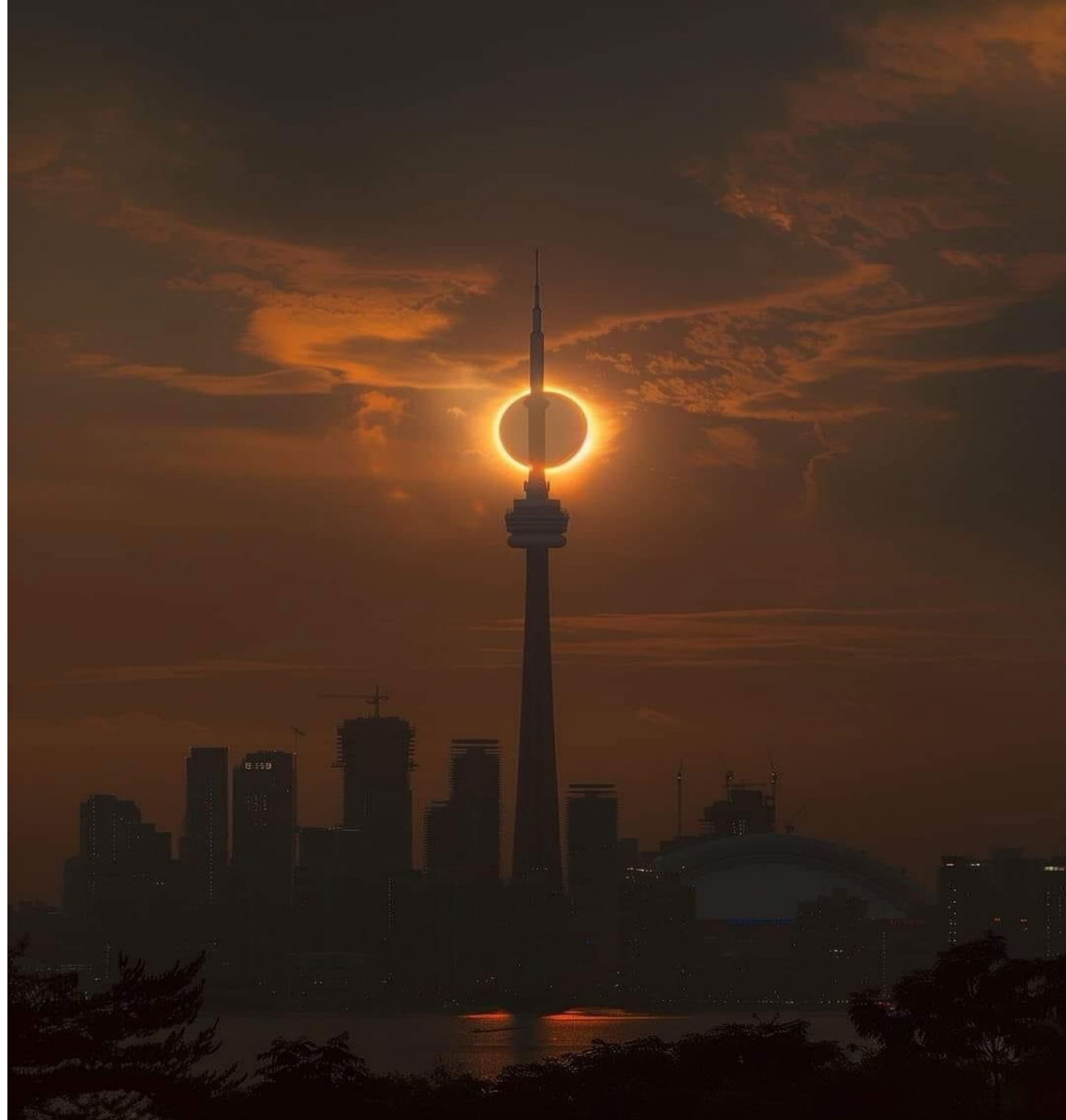
Wing, VC et al, (2012) Schizophr. Res. 139: 264-266.



E-Cigarettes/Vaping in Schizophrenia

- Increasing use of e-cigarettes amongst schizophrenia/SSD patients; one study suggests that perceptions of e-cigs are lower than with tobacco in SSD patients (Bianco, 2019; Brown et al., 2019)
- Potential method to address tobacco use disorder in SSD based on two open-label studies (Caponenetto et al., 2013; Hickling et al., 2019).

Tobacco-Free Mental Health Settings



Tobacco Bans in Hospital Settings

Advantages

- Great opportunity to provide motivational interventions for those not initially willing to try to quit (a “teachable moment”)
- Reduction in episodes of seclusion and restraint, decreased PRN* use and Length Of Stay (LOS)
- The goals of a smoke-free work environment are promoted and are consistent with wellness interventions that are being implemented in most hospital settings

Disadvantages

- Patients generally not interested in quitting, as this is low on their “hierarchy of needs”
- Staff are often reluctant as it can be perceived as a distraction to treatment plans, and is a critical “positive” reinforcer
- Lack of training of mental health staff in to conducting tobacco interventions
- Unmotivated inpatients pose a barrier to success of those few patients wanting to quit

Key Elements of Tobacco Free CAMH

- 1. No Smoking (or Vaping) at any campus site (2 main campuses + outpatient satellites)**
- 2. No Possession of Tobacco Products on the Premises**
- 3. Presence of Community “Ambassadors”, Patients and Staff who promote tobacco-free CAMH through a Wellness and Recovery Culture using a positive reinforcement approach and act as “Champions” for the Initiative.**

Staff and Patient Attitudinal Survey Results

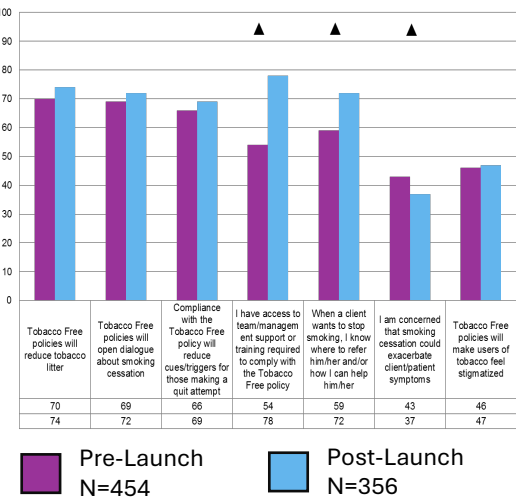
Staff

↑ 10 %

- Increase in staff confidence in having appropriate access to team / management support or training required to comply with the tobacco-free policy (12% to 22%)

↑ 7 %

- Increase in awareness of how to help / where to refer a client if they want to quit (13% to 20%)



Patient

↑ 19 %

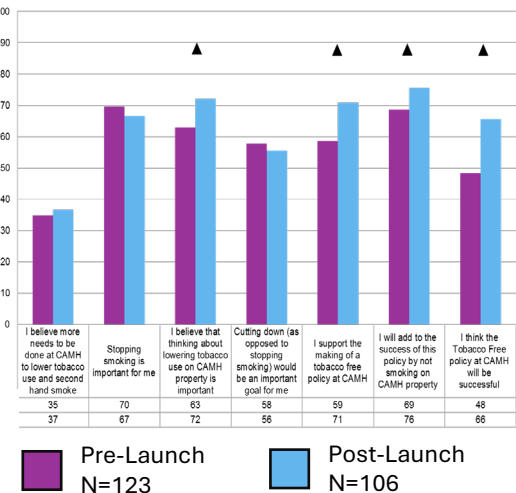
- Increase in the support of the creation of a tobacco-free policy at CAMH (48% to 67%)

↑ 17 %

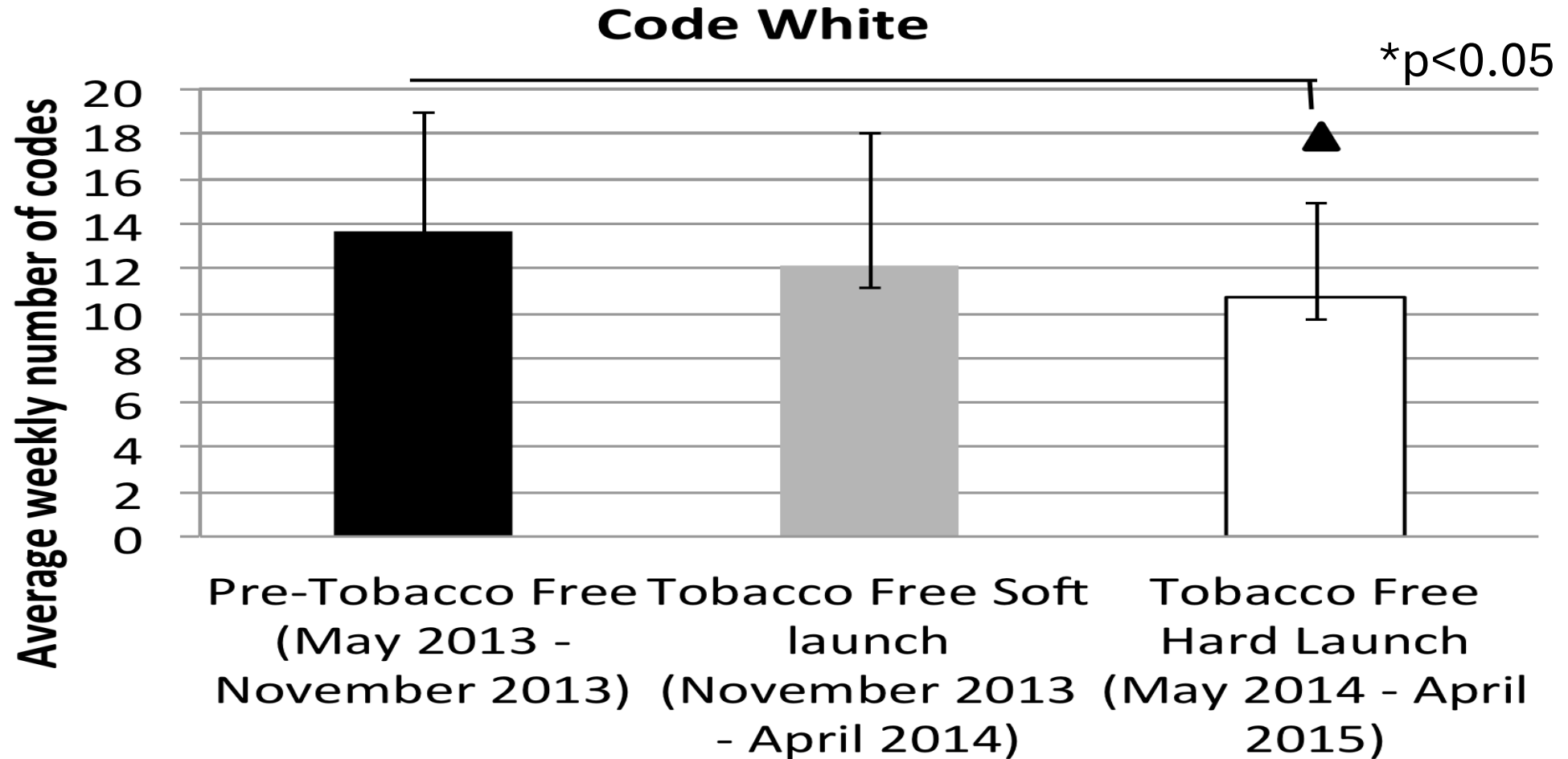
- Increase in the belief that lowering tobacco use on CAMH property is important (51% to 68%)

↑ 16 %

- Increase in contributing to the success of the policy by not smoking at CAMH (56% to 72%)



Effects of CAMH Tobacco Free on Aggression (Code Whites)



Riad-Allen, L. et al. (2017). Am. J. Addict. 26: 183-191.

Summary

- The burden of tobacco smoking and vaping in people with mental illness is high.
- Despite the fact that prevalence in the general population decreasing, this has not occurred in people with SMI. This is a big problem for patients and families, the health system and society.
- There are several innovative approaches to tobacco treatment in people with SMI, which exploit the pathophysiology and clinical features of these co-occurring illnesses, which show promise in enhancing treatment outcomes.

Neurobiology and Recovery: Addressing Nicotine Use Among Individuals with Serious Mental Illness

Tuesday, July, 15 2025

National Behavioral Health Network for Tobacco & Cancer Control

Jointly funded by CDC's *Office on Smoking & Health & Division of Cancer Prevention & Control*

Provides resources and tools to help organizations reduce tobacco use and cancer among individuals experiencing mental health and substance use challenges

1 of 9 CDC National Networks dedicated to eliminating cancer and tobacco disparities in individuals with mental health and substance use challenges

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Webinars & Presentations

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Smoking Cessation
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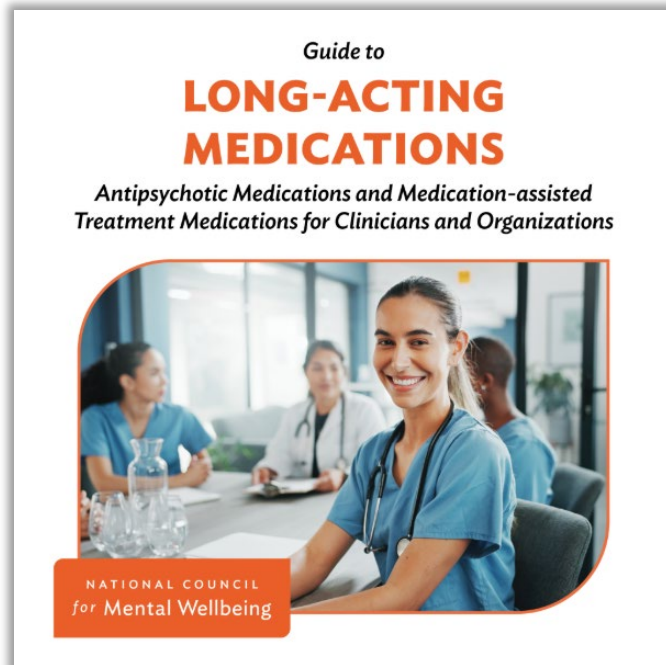
University of California
San Francisco

National Network's Driving Action: A National Network Approach to Promoting Tobacco and Cancer-Related Health Equity in Special Populations



- A consortium of nine national networks sponsored by the CDC's Center for Chronic Disease and Health Promotion.
- Our partnership provides leadership on and promotion of evidence-based approaches for preventing commercial tobacco use and cancer for priority populations on a national, state, tribal and territorial level.
- <https://www.cdc.gov/tobacco/stateandcommunity/tobacco-control/coop-agreement/index.html>

Want more? Additional SMI Events and Resources



NEW National Council Resource: *Guide to Long-acting Medications*

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SMI TTAC

Serious Mental Illness Training and Technical Assistance Center

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Contact Information:

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Q&A



CME/CEU Statements

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In support of improving patient care, the University of California, San Francisco is jointly accredited by the Accreditation Council for Continuing Medical Education (ACCME), the Accreditation Council for Pharmacy Education (ACPE), and the American Nurses Credentialing Center (ANCC), to provide continuing education for the healthcare team.

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CME/CEU Statements Continued

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Up to 1.0 CE Credit may be claimed.

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Interprofessional Continuing Education Credit (IPCE): This activity was planned by and for the healthcare team, and learners will receive 1.0 Interprofessional Continuing Education (IPCE) credits for learning and change.

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- All information will be posted on our website at SmokingCessationLeadership.ucsf.edu



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University of California San Francisco

Tuesday, September 9, 2025 | 2:00 – 3:00 pm ET

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