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PAIN TREATMENT SERVICES

YALE UNIVERSITY SCHOOL OF MEDICINE
DEPARTMENT OF PSYCHIATRY
DIVISION OF SUBSTANCE ABUSE

Treatment of co-occurring chronic pain and opioid use disorder

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No conflicts of interest to report

Aims of Today's Talk

- Co-occurring chronic pain and opioid use disorder
  - Experiences of patients and providers
  - Potentially useful treatment approaches

Chronic Pain: Prevalence and Burden

- Cross-national estimates of chronic pain:
  - 10% in general population[1]
  - 20% in primary care[2]
- Institute of Medicine Report
  - About 100 million adults
  - Annual societal costs: $560-635 billion[3]
- Low back pain: 6th leading cause of disease burden
  - 1206 disability-adjusted life years per 100,000[4]

1. *Verhaak, PF, Kerssens, JJ, Dekker, J, Sorbi, MJ, Bensing, JM. Prevalence of chronic benign pain disorder among adults: A review of the literature. Pain*. 1998;77:231-239.
2. *Gureje, O, Simon, GE, Von Korff, M. A cross-national study of the course of persistent pain in primary care. Pain*. 2001;92:195-200.
3. *Institute of Medicine. Relieving pain in America. 2011.*
4. *Murray et al. Disability-adjusted years. Lancet. 2012; 380: 2197-223*

Veterans and Pain

- Pain prevalence
  - Higher than the general population
  - Up to 50% of men[1]
  - 75% of women[2]
- Frequent presenting complaint at Veterans Health Administration (VHA)[3]
- Prevalence of low back pain in Veterans is growing[4]

1. *Kerns et al. Veterans' reports of pain and associations with ratings of health, health risk behaviors, affective distress, and use of the healthcare system. J Rehabil Res Dev*. 2003;40:371-380.
2. *Haskell et al. The prevalence of painful musculoskeletal conditions in female and male veterans. Clin J Pain*. doi:10.1097/AJP.0b013e318223d951.
3. Yu et al. Prevalence and costs of chronic conditions in the VA health care system. Med Care Res Rev. 2003;60;146S-167S.
4. *Sinnott, P. Wagner, TH. Low back pain in VA users. Arch Intern Med. 2009;169(15):1338-39*

Concomitants of Pain

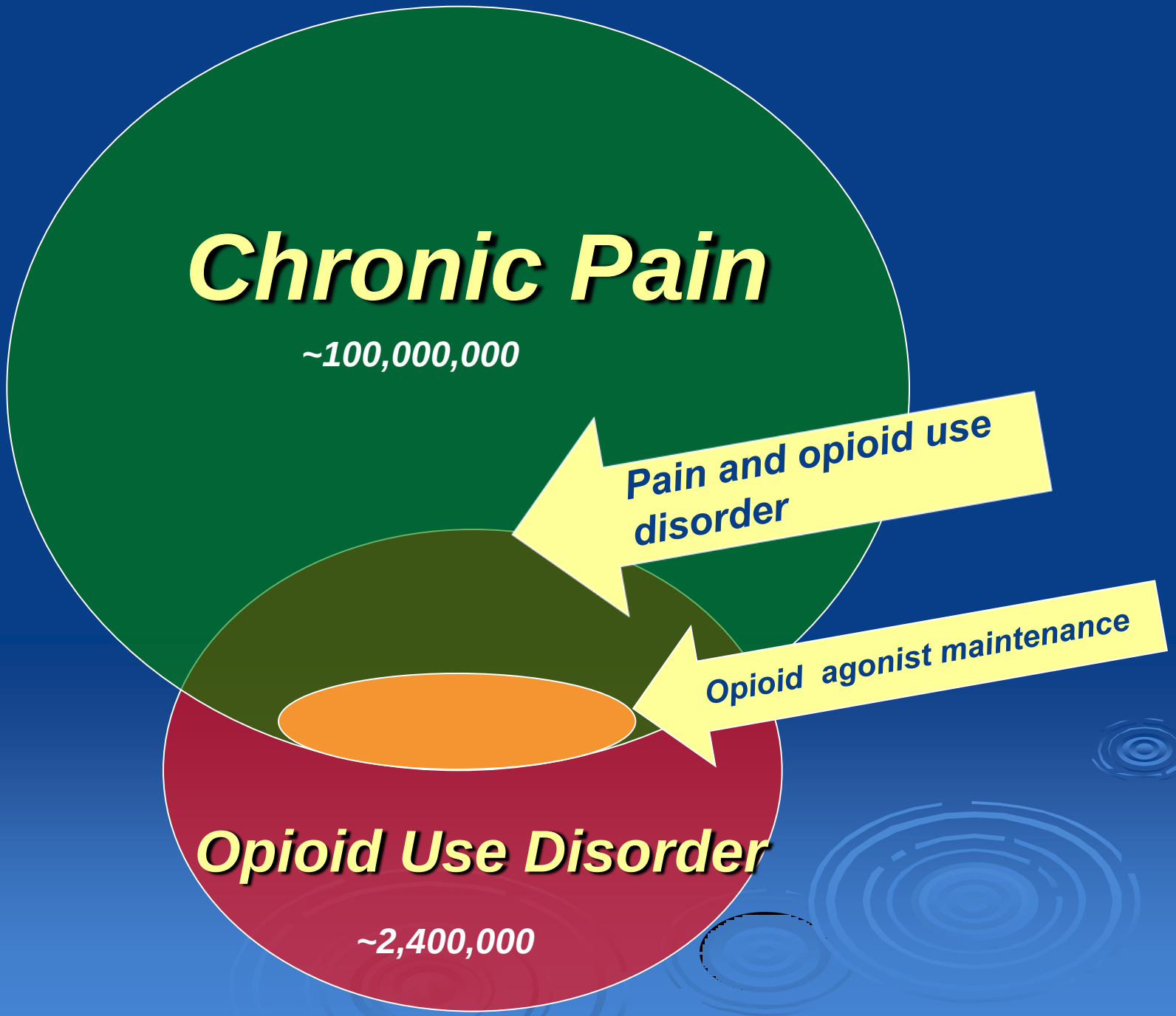
- Medical
  - Morbidity, healthcare utilization
- Psychiatric
  - Depression, anxiety, substance use
- Quality of life

Veterans Health Administration

- Pain management
  - Recognized by Institute of Medicine
  - Interdisciplinary
  - Uses biopsychosocial model

What I’m not going to address today!

- VHA National Pain Management Strategy
  - Kerns, Sellinger
- Opioid prescribing
  - Becker, Bohnert, Seals
- Assess/ Address nonmedical opioid use
  - Ilgen, Becker
- Treatment strategies for managing pain and substance use disorders
  - Ilgen


Chronic Pain
~100,000,000
Pain and opioid use disorder
Opioid agonist maintenance
Opioid Use Disorder
~2,400,000

DSM-5 Opioid Use Disorder

- Tolerance - Need more of drug to get same effect or same amount of drug gives less effect
- Withdrawal - compensatory changes in brain and body in response to (acute) drug abstinence
- Larger amounts or longer time than intended using
- Unsuccessful efforts to cut down or control use
- A great deal of drug-related time
- Craving
- Results in major role obligation failure
- Continued opioid use despite social problems
- Social/occupational/recreational activities diminished
- Recurrent opioid use despite being physical hazardous
- Continued opioid use despite physical/psychological problem

Mild 2-3; Moderate 4-5; Severe at least 6

Opioid Use Disorder: Prevalence and Burden

- Major public health concern
  - Between 2000 and 2013, estimated number of individuals with opioid use disorder quadrupled[1,2]
  - Chronic relapsing disorder[3]
  - Elevated risk of mortality, HCV and HIV transmission[4-6]
  - Costs to US annually exceed $53 billion[7]

1. *Office of Applied Studies. National and state estimates of the drug abuse treatment gap: 2000 National Household Survey on Drug Abuse. SAMHSA. 2002.*
2. *SAMHSA. Results from the 2013 national survey on drug use and health: summary of national findings. 2014.*
3. *McLellan et al. Drug dependence, a chronic medical illness. JAMA. 2000;284(13):1689-95.*
4. *Hser et al. A 33-year follow-up of narcotics addicts. Arch Gen Psychiatry. 2001;58:503-8.*
5. *Nelson et al. Global epidemiology y of hepatitis B and hepatitis C in people who inject drugs. The Lancet. 2011;378(9791):571-83*
6. *Mathers et al. Global epidemiology of injecting drug use and HIV among people who inject drugs. The Lancet. 2008;372(9651):1733-45*
7. *Birnbaum et al. Societal costs of prescription opioid abuse, dependence, and misuse in the United States. Pain Med. 011;12(4):657-67.*

Medication-Assisted Treatment

- Methadone
- Buprenorphine
- Naltrexone

What are rates of chronic pain in opioid dependent patients?

- Prevalence of chronic pain in methadone maintenance treatment is high:
  - 37% with chronic severe pain to[1,2]
  - > 60% with chronic pain of any intensity[3]

- Prevalence of chronic pain in patients seeking buprenorphine-naloxone treatment is high:
  - 36%[4]

1. *Barry et al. Relations among psychopathology, substance use, and physical pain experiences in methadone-maintained patients. J. Clin. Psychiatry.* 2009;70:1213-1218.
2. *Rosenblum et al. Prevalence and characteristics of chronic pain among chemically dependent patients in methadone maintenance and residential treatment facilities. JAMA*. 2003;289:2370-2378
3. *Jamison, RN, Kauffman, J, Katz, NP. Characteristics of methadone maintenance patients with chronic pain. J. Pain Symptom Manage.* 2000;19:53-62.
4. *Barry, et al. Pain and associated substance use among opioid dependent individuals seeking office-based treatment with buprenorphine-naloxone: A needs assessment study. Am. J. Addict. 2013*

Demographics and Pain Characteristics

	CP (n = 88)	SP (n = 87)	Statistical test	P
Demographics				
Gender (% male)	68	71	$\chi^2 = 0.19$	NS
Race (% white)	85	81	$\chi^2 = 0.70$	NS
Age (mean age)*	36	33	t = -1.98	<0.05
Pain characteristics[a]				
Current pain intensity (mean intensity, ± SD)*	3.2 ± 0.9	2.2 ± 1.0	F = 51.85	<0.001
Pain frequency[b] (mean frequency, ± SD)*	4.0 ± 1.0	2.7 ± 1.0	F = 74.62	<0.001
Typical pain duration[b] (mean duration, ± SD)*	3.9 ± 1.0	3.0 ± 1.2	F = 25.73	<0.001
Typical pain intensity[b] (mean intensity, ± SD)*	3.4 ± 0.7	2.4 ± 1.0	F = 57.18	<0.001
Typical pain interference[b] (mean interference, ± SD)*	3.3 ± 1.1	2.2 ± 1.1	F = 48.92	<0.001

N = 244. CP = Chronic pain, SP = Some pain, SD = Standard deviation.

[a]Controlling for age, [b]Past week

Barry et al., 2012, Am J Addict

Location[a]

	CP (n = 88) %	SP (n = 87) %	χ^2	P	AOR	P
Pain location*			35.6	<0.001		
Back	84	72			2.3	0.06
Shoulder*	33	20			2.9	<0.05
Pelvis*	10	2			6.7	<0.05
Hands	9	3			4.3	0.08
Feet	13	12			1.3	NS
Stomach*	16	31			0.4	<0.05
Head	19	23			1.0	NS
Face	2	3			0.9	NS
Legs	48	47			1.4	NS
Arms*	6	15			0.1	<0.01
Other	25	18			1.7	NS

CP = Chronic pain, SP = Some pain. [a]Controlling for age

Genesis[a]

	CP (n = 88) %	SP (n = 87) %	χ^2	P	AOR	P
Pain genesis*			48.2	<0.001		
Accident*	57	25			6.2	<0.01
Surgery	11	6			1.8	NS
Nerve damage*	21	2			15.7	<0.01
Arthritis	11	1			5.9	NS
HIV	0	0			--	--
Cancer	0	0			--	--
Don't know	21	23			2.8	NS
Other	19	46			0.7	NS
Opioid Withdrawal*	0	32	33.7	<0.001	--	--

CP = Chronic pain, SP = Some pain. [a]Controlling for age

Substance Use[a]

	CP %	SP %	χ^2	P	AOR	P
Pain-related Substance Use in Past Week			17.1	0.10		
More than prescribed opioid medication	33	18			1.5	0.35
Somebody else's opioid medication	61	45			1.6	0.19
Heroin	39	33			1.1	0.88
Street Methadone	15	9			1.1	0.89
More than prescribed non-opioid medication	11	3			2.0	0.38
Somebody else's non-opioid medication	13	7			0.9	0.95
More than prescribed benzodiazepine medication	11	5			1.5	0.59
Somebody else's benzodiazepine medication	14	5			1.6	0.55
Cannabis and other street drugs	36	24			1.5	0.34
Alcohol	24	25			0.5	0.13

CP = Chronic pain, SP = Some pain. [a]Controlling for age

Lifetime Treatment Use

	CP %	SP %	χ^2	P	AOR
Conventional Medicine			22.4	<0.001	
OTC pain medication	83	69			1.2
Opioid medication	75	48			1.7
Non-opioid medication	58	29			2.2*
Benzodiazepine medication	36	21			1.5
Complementary & Alternative Medicine					
Alternative Medical Systems/ Biologically Based Therapies			9.2	0.03	
Acupuncture	21	9			2.4
Herbs/Herbal medicine	22	15			1.2
Mind-body interventions			22.3	<0.01	
Prayer	46	28			2.8*
Counseling/ psychotherapy	38	22			2.5
Meditation	23	20			0.7

CP = Chronic Pain, SP = Some Pain. *p<0.05

Barry et al., 2012, J Addict Med

Lifetime Treatment Use

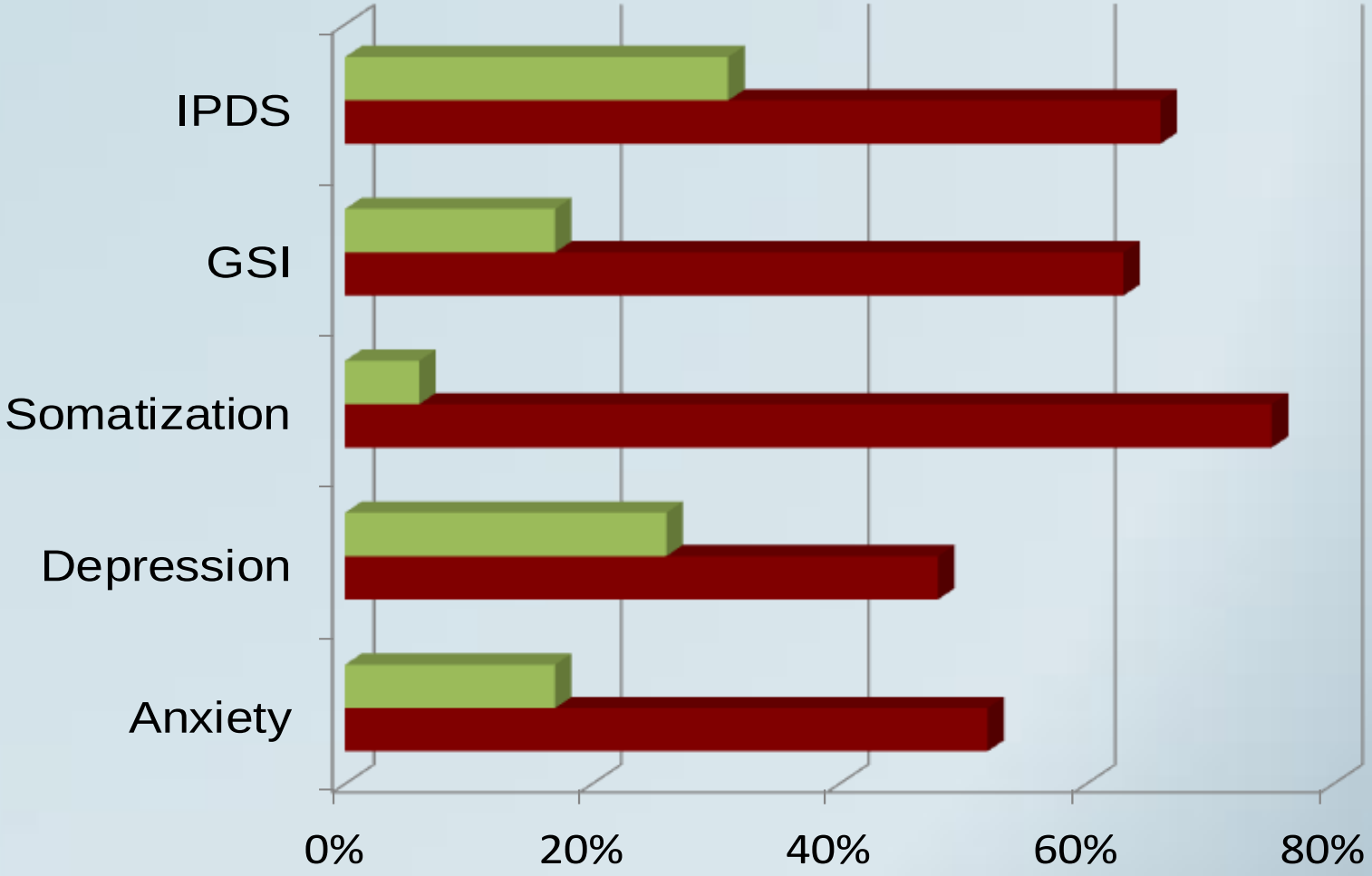
	CP %	SP %	χ^2	P	AOR
Complementary & Alternative Medicine					
Mind-body interventions					
Self-help support group	31	22			0.9
Yoga	6	14			0.2*
Hypnosis	3	3			0.9
Manipulative and body-based methods			33.2	<0.001	
Stretching	73	48			1.2
Physical exercise	73	49			0.9
Heat therapy	58	25			2.5
Massage	52	33			0.9
Physical therapy	66	33			1.7
Ice therapy	44	18			1.0
Chiropractor	55	24			2.0

CP = Chronic pain, SP = Some pain. *p<0.05

Interest in Pain Treatment Along with Buprenorphine/Naloxone Treatment

- Chronic pain: 89%
- Some pain: 56%
- AOR 6.1, 95% CI 2.6-14.1, $p < .001$

Psychiatric Correlates of Pain in MMT



N = 150 MMT patients

Barry et al., 2009, J Clin Psychiatry

- NP = No pain in past 7 days
- CSP = Pain ≥6 months with clinically significant severity/interference

Table 1. Comparison of NP, SP, and CSP Groups on Trauma Exposure and PTSD Symptoms

	No Pain (N = 35)		Some Pain (N = 59)		Chronic Severe Pain (N = 56)		MANOVA		MANCOVA*	
	Mean	SD	Mean	SD	Mean	SD	F(2,147)	P	F(2,143)	P
LEC										
Sexual assault	.4	.7	.5	.8	.6	.8	1.56	.214	1.16	.069
Physical assault	1.1[a]	.9	1.4	.9	1.6[a]	.9	3.18	.045	2.93	.037
LEC total	3.9[a]	1.9	4.5[b]	2.8	5.9[a,b]	2.6	7.47	.001	49.03	.001
PC-PTSD total	.7[a,b]	1.2	1.8[a]	1.6	2.0[b]	1.7	8.59	<.001	21.19	<.001

*Controlling for age.

[a,b]Scales with the same superscripts differ significantly from each other at P < .05 for 2-tailed tests using Scheffe post hoc tests; scales without superscripts do not differ significantly from other scales in that row.

Barry et al., 2011, J Pain

Psychiatric Assessment

- 170 consecutive adults who completed evaluations for enrollment in a treatment research program: 2 RCTs
  - Buprenorphine/naloxone maintenance in office-based setting (n=113)
  - Methadone maintenance in methadone clinic (n=57)

- Inclusion criteria
  - Nonspecific low back pain (ACP/APS)[1]
  - Duration at least 6 months rated ≥4 on a 0-10 scale
  - DSM-IV opioid dependence and ASAM-APS-AAPM opioid addiction[2]

- Exclusion criteria
  - Drug treatment in last 30 days
  - Current suicide/homicide risk
  - Cognitive impairment/psychiatric disorder of clinical concern

Barry et al., J Clin Psychiatry, In Press

1. *Chou et al. Ann Intern Med 2007*
2. *AAPM, APS, ASAM. The American Academy of Pain Medicine 2001.*

Diagnostic Instruments

- Structured Clinical Interview for DSM-IV Axis I Disorders[1]
  - Mood, anxiety and substance use disorders
  - Current (last 30 days) and lifetime (either past or current)

- Diagnostic Interview for DSM-IV Personality Disorders[2]
  - Cluster A: Paranoid, schizoid, schizotypal
  - Cluster B: Antisocial, borderline, histrionic, narcissistic
  - Cluster C: Avoidant, dependent, obsessive-compulsive
  - Current (last 2 years)

1. *First et al. Structured Clinical Interview for DSM-IV-TR Axis I Disorders, Patient Edition (SCID-I/P) 2002*
2. *Zanarini et al. The diagnostic interview for DSM-IV personality disorders (DIPD-IV) 1996*

Interviewers and Trainings

- Addiction psychology and psychiatry fellows

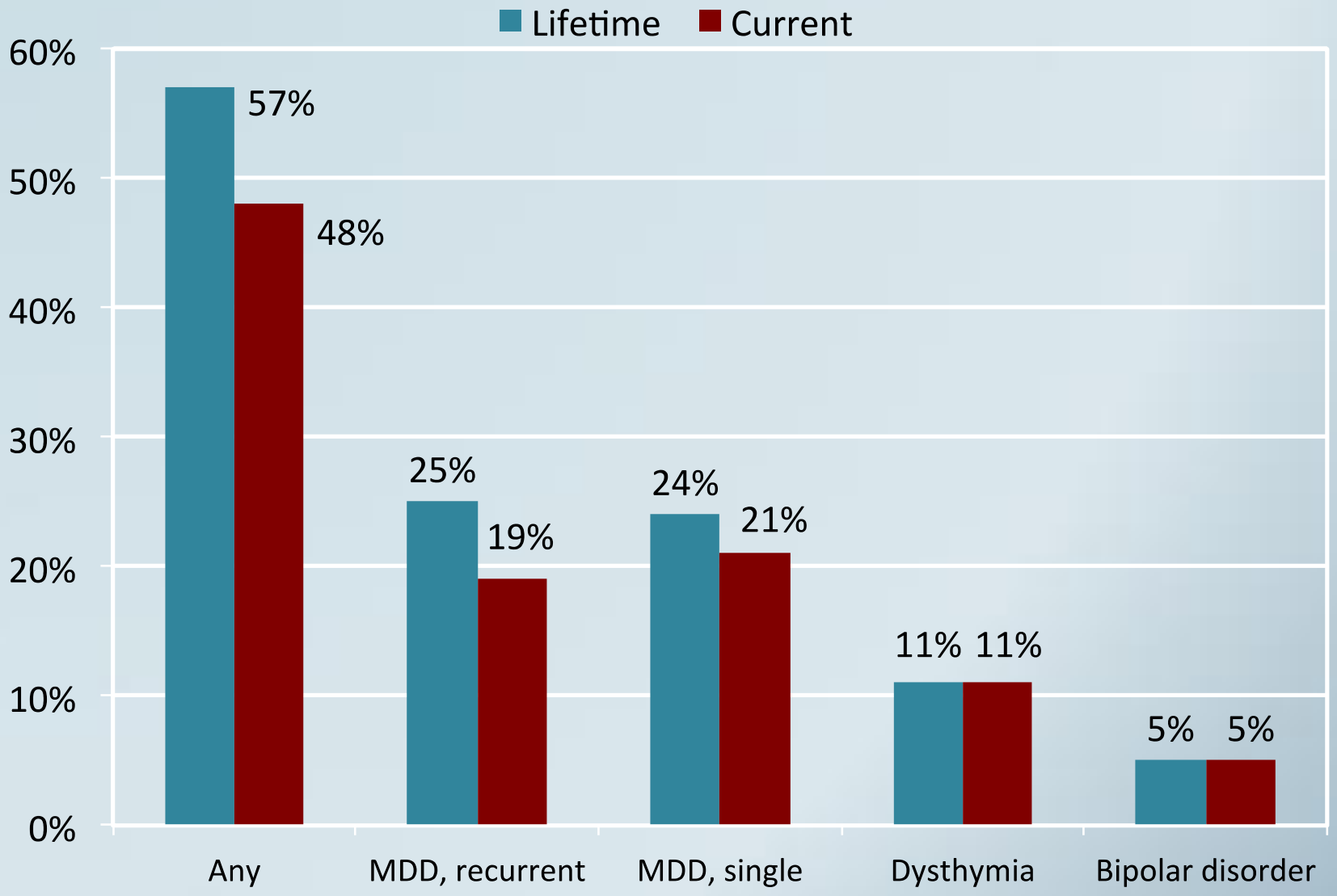
- Standardized training protocol
  - Didactics
  - Observe two batteries by experienced assessors
  - Perform two supervised batteries
  - Ongoing supervision

Baseline Characteristics

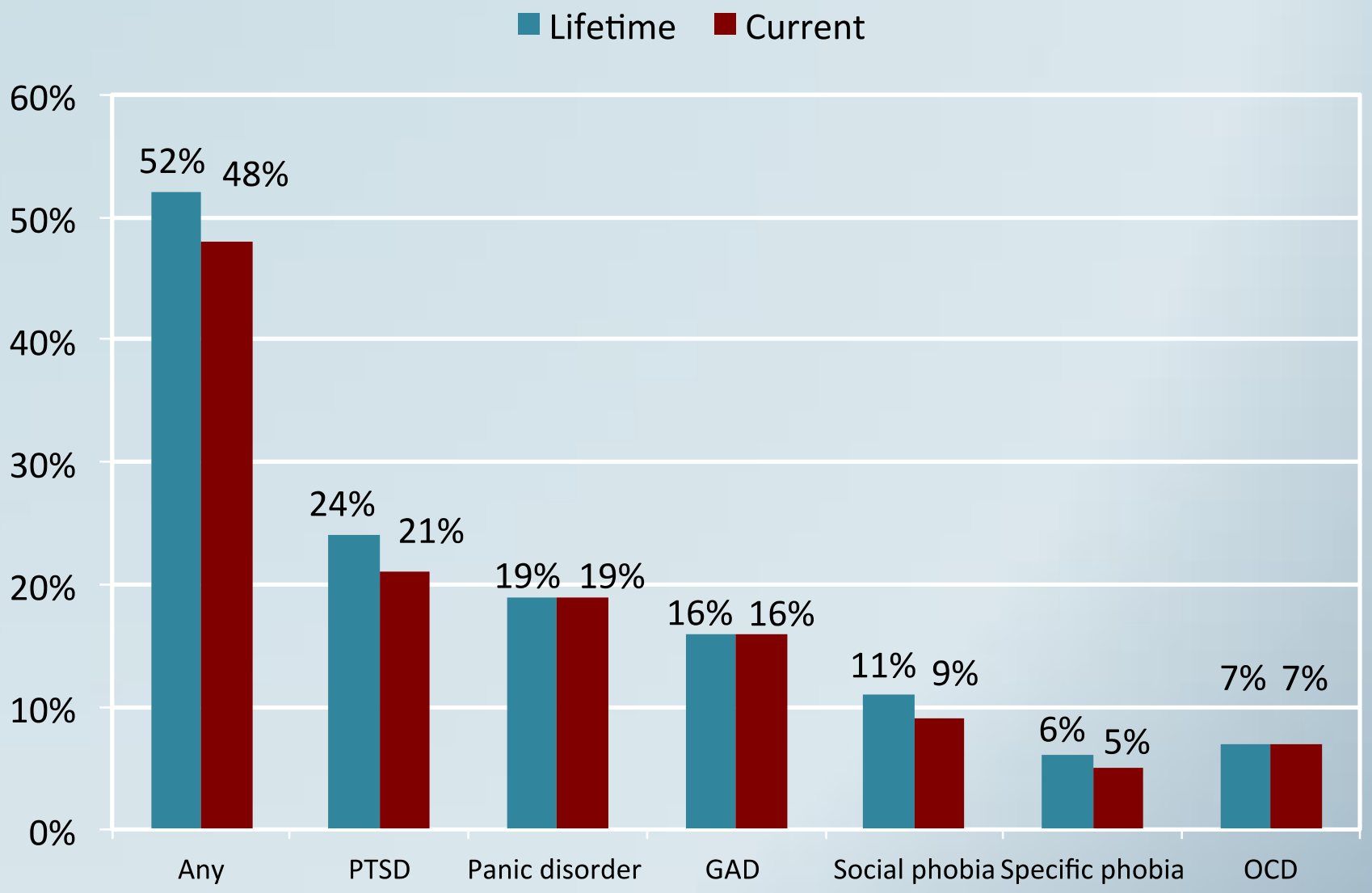
	MMT (N=57)	BNT (N=113)	Total (N=170)
Mean age, years*	39	35	36
Gender, % male	72	71	71
Race, % white	88	87	87
Employed (full-time, part-time, student)*	28	56	47
Married, %	18	21	20
>High school education, %	86	87	87
Primarily heroin user, %*	60	38	45
Outpatient mental health visit in past month, %	4	4	4
Prescribed psychiatric medication in past month, %*	23	11	15

MMT=methadone maintenance treatment; BNT=buprenorphine/naloxone treatment

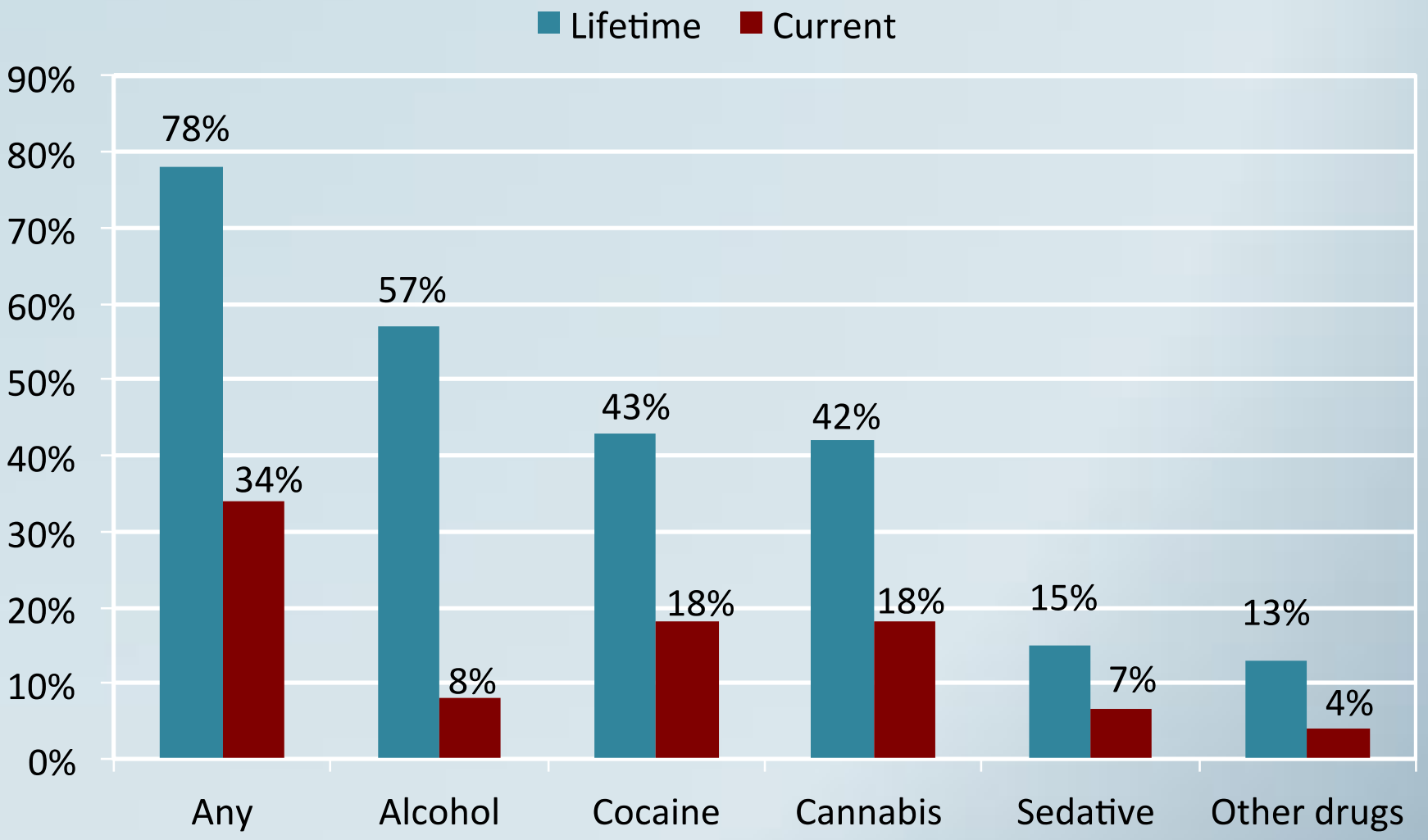
Mood Disorders



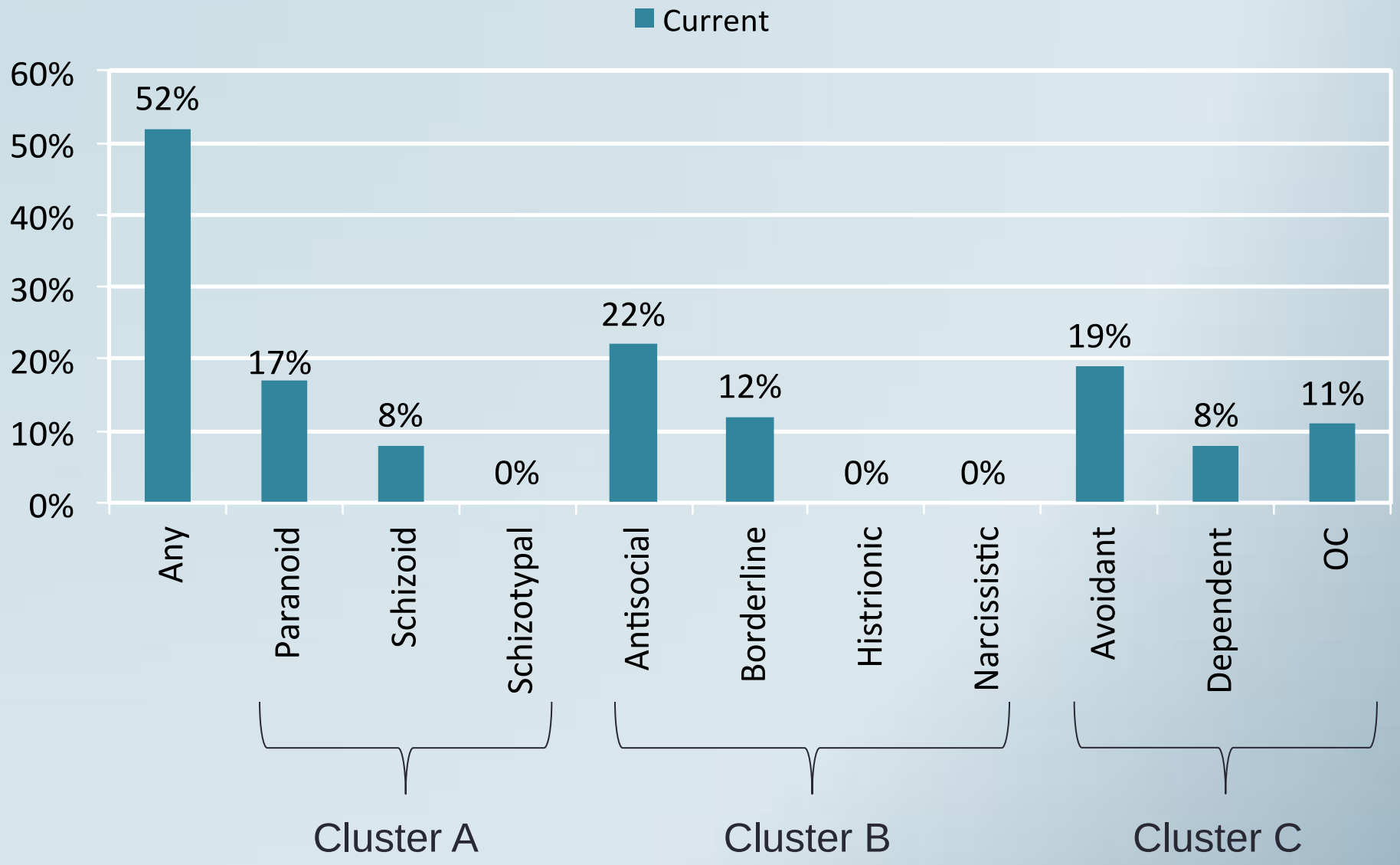
Anxiety Disorders



Non-Opioid Substance Use Disorders



Personality Disorders



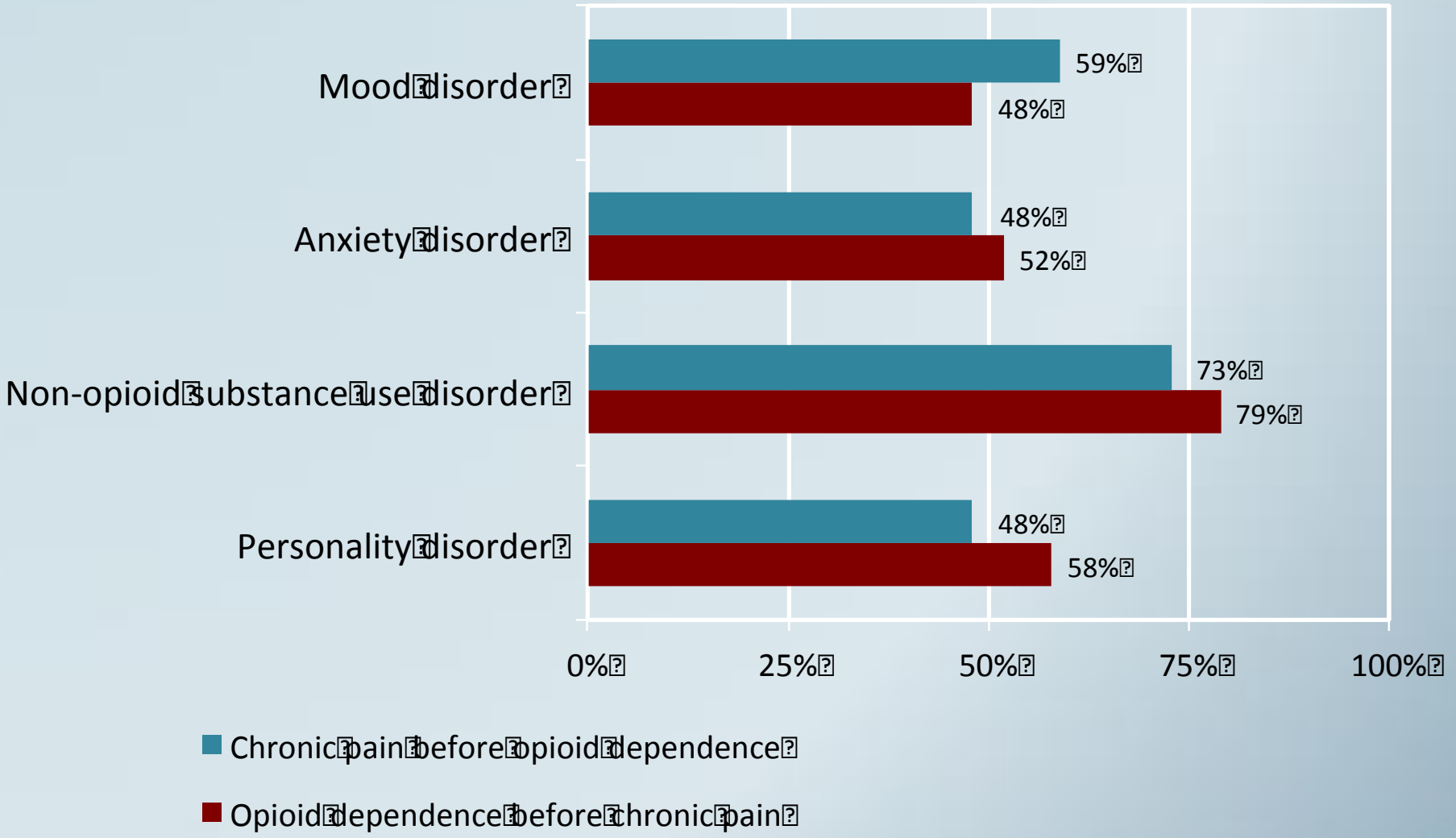
Comorbidity and Persistence

- % of participants with
  - 0, 1, 2, or ≥3 comorbid psychiatric disorders
  - 19%, 22%, 25%, and 34%, respectively
- Of those with a lifetime anxiety disorder
  - 93% met criteria for a current anxiety disorder
- Of those with a lifetime mood disorder
  - 84% met criteria for a current mood disorder

Current Mental Health Treatment

- In the month prior to baseline
  - 4% : mental health visit
  - 15% : prescribed psychiatric medication
  - 16% : either

Lifetime Disorders: Pattern of Onset



What explains the high rates of pain?

- Trauma
- Psychopathology
- Opioid-induced hyperalgesia

Predictors of Characteristic Pain Intensity

	R^2	ΔR^2	ΔF	P	β	p
Demographics and pain status	.31	.31	11.67	<0.001		
Sex					-.10	0.259
Age					.04	0.679
Employment status					.24	**0.010**
Pain status					.40	**<0.001**
BSI-18	.42	.11	9.18	<0.001		
Somatization					.44	**<0.001**
Depression					-.18	0.056
Coping and catastrophizing	.55	.14	4.85	<0.001		
Diverting attention					-.20	0.057
Catastrophizing					.38	**<0.001**
Ignoring sensations					.02	0.834
Reinterpreting pain sensations					.08	0.426
Coping self-statements					.05	0.598
Praying-hoping					.17	0.053

Garnet et al., 2010, Pain Med

Predictors of Recent Pain-related Disability

	R^2	Δ R^2	Δ F	P	β	p
Demographics and pain status	.31	.31	11.17	<0.001		
Sex					-.04	0.617
Age					-.06	0.500
Employment status					.36	**<0.001**
Pain status					.32	**0.001**
BSI-18	.39	.08	6.50	0.002		
Somatization					.29	**0.007**
Depression					.05	0.599
Coping and catastrophizing	.49	.11	3.32	0.005		
Diverting attention					-.04	0.750
Catastrophizing					.34	**<0.001**
Ignoring sensations					-.03	0.809
Reinterpreting pain sensations					.08	0.467
Coping self-statements					-.11	0.229
Praying-hoping					-.03	0.728

Garnet et al., 2010, Pain Med

MMT Counselors' Experiences Treating Chronic Pain Patients

Management Issues
Monitoring use of pain medications
Patients' abuse/misuse of prescription analgesics
Patients' lack of openness to clinician recommendations
Absence of appropriate pain management referrals
Absence of treatments for chronic pain and opioid dependence
Coordinating MMT drug counseling & pain treatment

n = 25 MMT Counselors

Barry et al., 2008, J Addict Med

MMT Counselors' Experiences Treating Chronic Pain Patients

Chronic Pain-Related Items	%
Patients with chronic pain who have ongoing drug use	60
Patients with chronic pain and ongoing drug use who attribute drug use to chronic pain	56
Counselors interested in specialized training for treating patients with chronic pain	92

n = 25 MMT counselors

Table 2. Barriers and Facilitators to Implementing Office-Based Pain Management

Themes	*Subthemes*	*Examples*
Physician factors	Pain assessment	Absence of physiological measures of pain intensity
	Expertise in pain management	Absence of formal training in pain management
	Expertise in POA	Difficulty broaching topic of medication abuse
	Co-existing disorders	Difficulty managing co-occurring psychiatric conditions
	Interest in pain management	Absence of interest in treating pain patients
	Aberrant behaviors	Patients' exclusive focus on opioid analgesics
	Prescribing opioid analgesics	Reluctance to over-prescribe opioids for pain relief
	Opioid agreements*	Specifying expectations about patient behaviors
	Continuity of care*	Enhanced patient compliance
Physicians' perceptions of patient factors	Physicians' response	Physicians not listening to patients' pain reports
	Attitudes to prescription opioids	Concern about addiction potential
	Cost	Concern about covering pain management costs
	Motivation	Patient diversion of prescription opioid medication
Logistical and systemic factors	Pain management referrals	Lack of appropriate pain management referrals
	Addiction referrals	Low patient compliance with referrals
	Diagnostic workup	Absence of sufficient diagnostic data
	Ancillary staff	Lack of confidence in ancillary staff's skills
	Time	Time spent completing paperwork
	Insurance coverage	Concern about pain management reimbursement

Abbreviation: POA, pain and opioid addiction.
*Facilitators.

Barry et al., 2010, J Pain

Next Step?

"He's complaining of chest pain, shortness of breath, cramps and dizziness. Do you sell earplugs?"

Medication for Pain Relief

- Opioid medications routinely used for cancer related pain management

- Opioids for chronic pain management
  - Efficacious?
  - Lose efficacy over time?
  - Addiction or misuse liability

- Even with tamper-resistant medications
  - How to promote self-management or functioning?
  - What to do with individuals addicted to opioids?

Treatment Approach

- Optimal medical management
  - Opioid agonist treatment (methadone, buprenorphine)
  - Psychosocial treatment
  - May also include:
    - Other pharmacologic and somatic pain treatments
    - Complementary health approaches
- Cognitive-behavioral therapy (CBT)
  - Efficacious in separately treating chronic pain and SUDs
  - Feasibility and acceptability of CBT for co-occurring chronic pain and substance-related disorders[1,2]

1. Currie et al., J Pain 2003, 2. Ilgen et al., Cogn Behav Prac. 2011

Cognitive-Behavioral Therapy Modules

- Education
- Exercise and Behavioral Activation
- Relaxation Training
- Distress Tolerance
- Functional Analysis of Behavior
- Resilience Training

Randomized Clinical Trials

- Setting
  - Methadone Clinic
- Sample Size
  - 40
- Opioid Medication
  - Methadone
- Counseling
  - CBT
  - Drug Counseling

- Setting
  - Office-based
- Sample Size
  - 90
- Opioid Medication
  - Buprenorphine/naloxone
- Counseling
  - Physician Management (PM)
  - PM + CBT
  - PM + Health Education

Group Treatments

- Examined feasibility and acceptability
  - Walking meditation
  - Group singing
  - Psychoeducation with goal setting
  - Relaxation training

Barry et al., 2014, J Addict Med

Drug Counselors

- Among nonpharmacological treatments for chronic pain, cognitive-behavioral therapy had highest ratings for:
  - Perceived efficacy
  - Willingness to refer

Oberleitner et al.,J Addict Med, In Press

Summary and Conclusions

- Co-occurring chronic pain and opioid use disorders
  - Prevalent
  - Elevated psychopathology
  - Frustration for office-based and MMT providers
- Psychosocial pain management interventions and medication-assisted treatment
  - Safe, feasible, and acceptable
  - Initial investigations of efficacy are promising
  - Need more research