



Intentional Non-Adherence to Antiretroviral Medications among Alcohol Drinkers: Prospective Study of Interactive Toxicity Beliefs

**Supported by an America Reinvestment and Recovery Act (ARRA)
Challenge Grant from the National Institute of Alcohol Abuse and
Alcoholism (NIAAA) RC1AA018983**



Alcohol interferes with adherence...

- **Intoxication**
- **Impaired memory**
- **Over Sleeping**
- **Hangovers**

Interactive Toxicity Beliefs

Beliefs that mixing alcohol with medications will lead to adverse reactions.

Can result in.....

Abstinence from alcohol when on ART

Intentionally interrupting ART when drinking

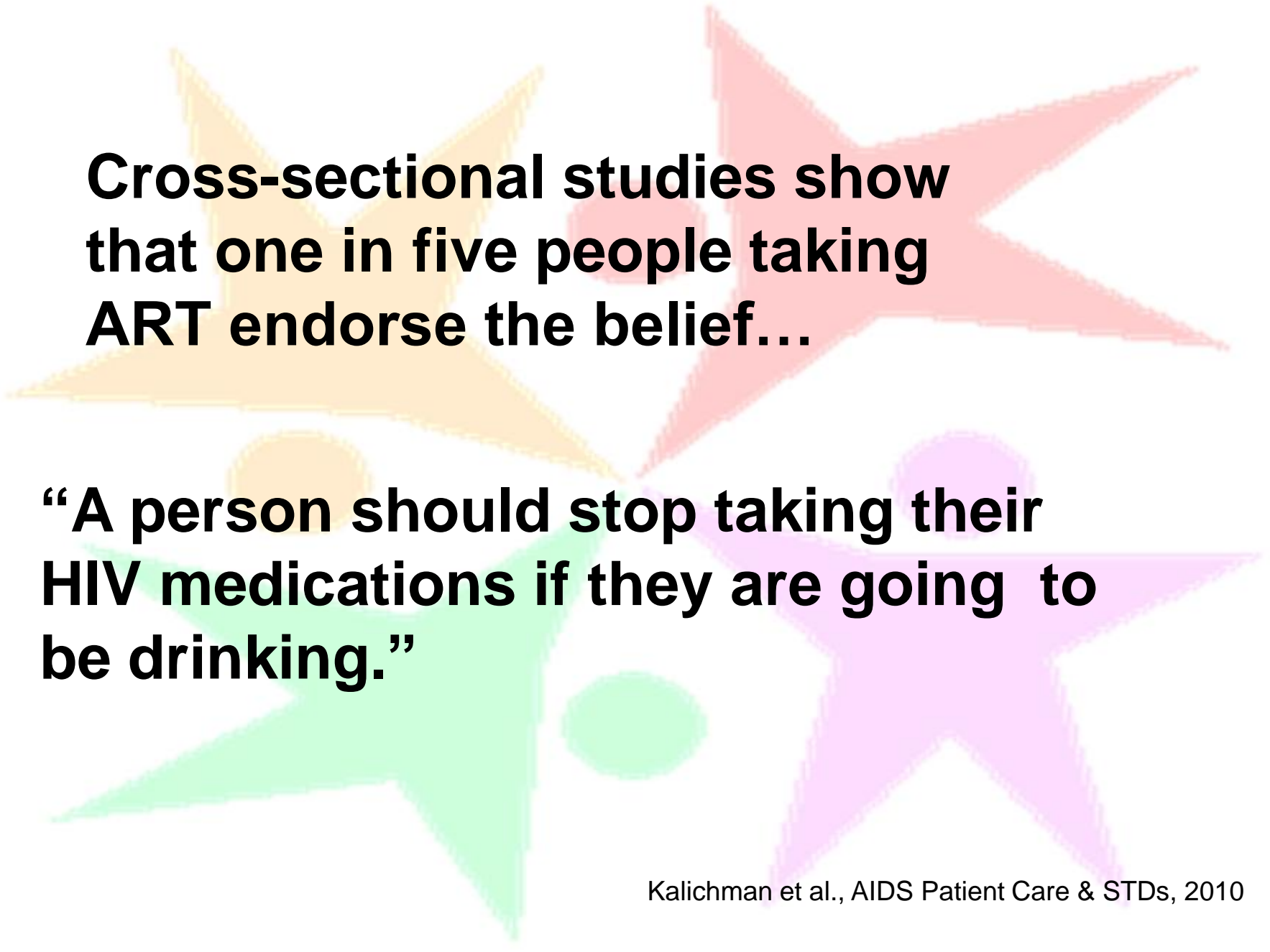
Interactive Toxicity Beliefs

85% “ART and alcohol do not mix”

90% “It’ s common knowledge that you should never drink alcohol with any type of prescription medication.”

53% heavy drinkers believe it is harmful to mix alcohol and ARVs

Sankar et al., AIDS & Behavior, 2007



**Cross-sectional studies show
that one in five people taking
ART endorse the belief...**

**“A person should stop taking their
HIV medications if they are going to
be drinking.”**

**We also found that
interactive toxicity
beliefs predict ART
non-adherence
over and above
drinking**



Purpose of the current study...



**To examine the
whether interactive
toxicity beliefs
predict non-
adherence in
prospective and
day-level analyses.**

PARTICIPANTS

139 men and 39 women

All participants were HIV+, taking ART & current drinkers

Community recruited by word-of-mouth

93% African-American

58% have incomes under \$10,000/year

Mean age 45 years

KEY MEASURES

ACAS-Interview

- **Demographics**
- **Substance use**
- **Alcohol Use Identification Test (AUDIT)**
- **Alcohol Interactive Toxicity Beliefs**



**ART Adherence:
Monthly
unannounced cell-
phone pill counts &
3-day self-report**

**Drinking:
Daily cell-phone text
surveys of alcohol use**



STUDY DESIGN

Initial screening for
alcohol use
(N = 449)

Currently treated with ART and
reported current alcohol use
(N=178)

Baseline
Interview
(N=178)

Daily drinking
diaries linked to telephone
adherence assessments
Completion rates:
First block, 85%
Fourth block, 84%
Final block, 70%
(Mean 82% completion)

0 1 2 3 4 5 6 7 8 9 10 11 12
Unannounced pill counts and telephone adherence assessments
(6 month completion, N =176, 98%
12 month completion, N = 171, 96%)

12-Month
Interview and blood draw
(N=174, 97%)



RESULTS

52% endorsed either of two items that defined intentional non-adherence:

“I skip taking my medicine if I have been drinking”

“I stop taking my HIV medications if I will be drinking alcohol”

Characteristics of Intentionally Non-Adherent Groups

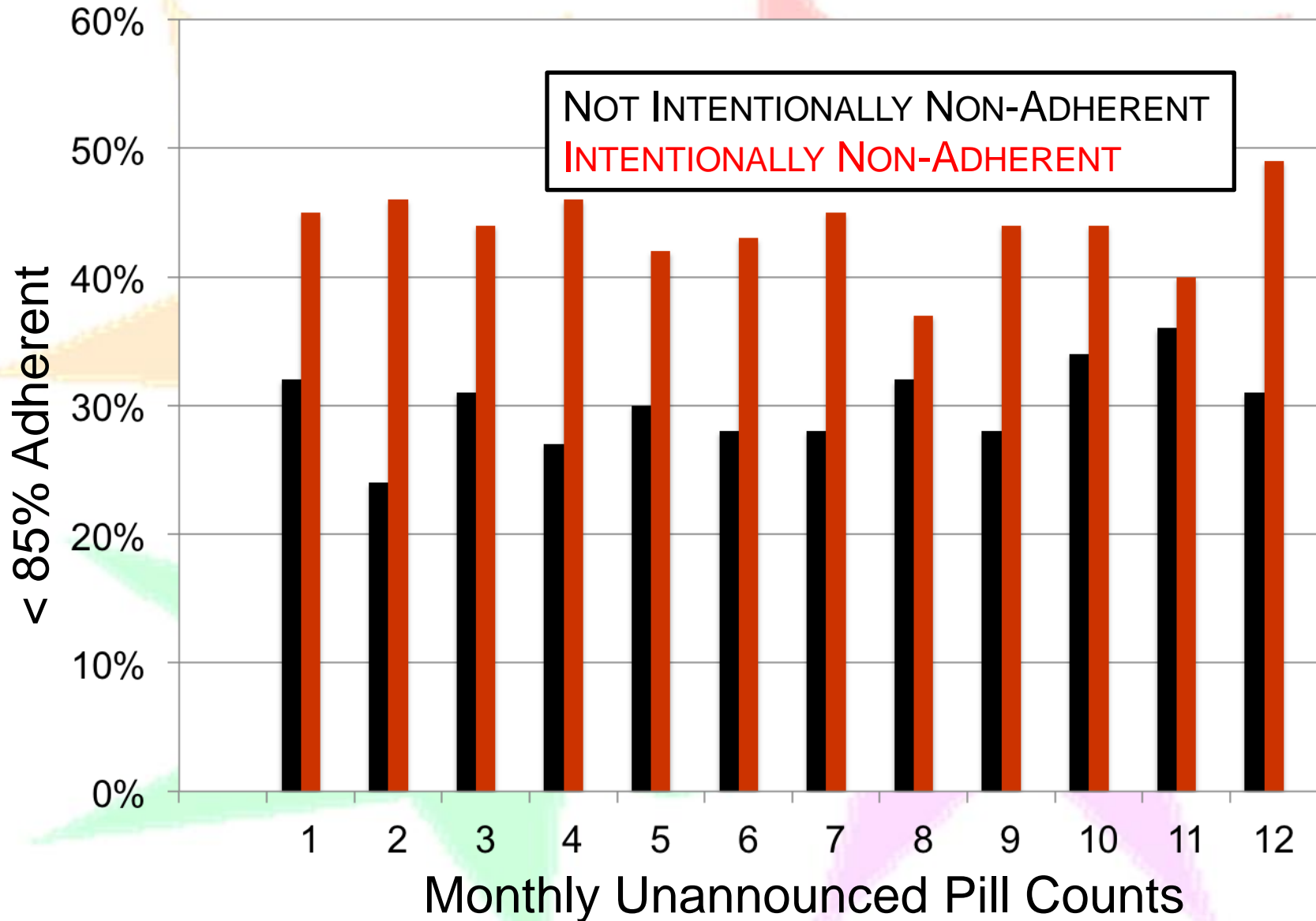
N	Not Intentionally Non-Adherent (N = 88)		Intentionally Non-Adherent (N = 90)		X ²	
	%	N	%	N		
Men		71	81	68	46	.68
Women		17	19	22	24	
African American		79	90	86	96	2.8
Marijuana (4-mos)		29	33	40	44	1.4
Cocaine (4-mos)		11	13	39	43	20.9**
Liver Disease		15	17	12	13	1.01
Viral Load > 75		28	33	44	50	5.4*
	M	SD	M	SD	t	
Age		46.7	7.4	45.1	6.8	1.3
Education		12.7	1.2	12.4	1.5	1.6
AUDIT (alcohol) score		4.2	4.2	7.2	7.1	3.3**

Note: * p < .05, ** p < .01

Alcohol-ART Behaviors among Intentionally Non-Adherent Groups

	Not Intentionally Non-Adherent (N = 88)		Intentionally Non-Adherent (N = 90)			
	N	%	N	%	X ²	
I wait at least a couple hours after I take my medicine to drink.	48		54	67	74	7.7**
I get sick if I mix HIV medications and alcohol together.	15		17	39	44	14**
I do not mix alcohol and HIV medications because it is not safe.	27		31	47	52	8.5**

Pill Count Adherence for Intentionally Non-Adherent Groups



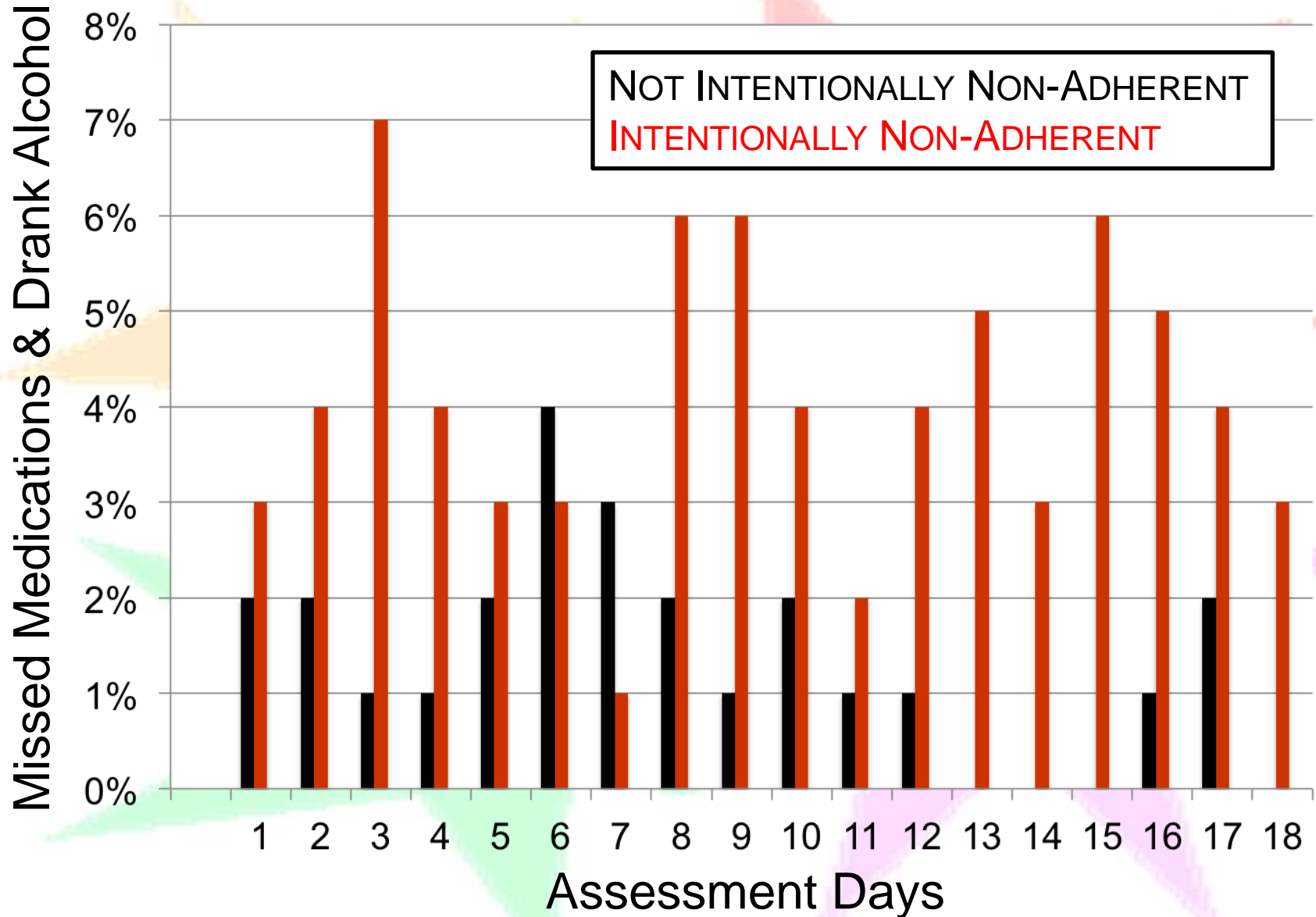
GEE Wald $X^2 = 4.90$, $p < .05$; controlling for AUDIT score and drug use

Day-Level Self-Report Adherence and e-Diary Drinking among Intentionally Non-Adherent Groups

	Not Intentionally Non-Adherent (N = 88)		Intentionally Non-Adherent (N = 90)		OR	
	M	SD	M	SD		
Days Non-Adherent		1.9	3.4	3.4	3.8	1.10*
Number of Drinking Days		2.9	3.6	3.6	4.3	1.04
Drinks Per Day		9.0	12.6	11.5	13.2	1.01

Note: Logistic Regressions

Day-Level Non-Adherence When Drinking



GEE Wald $X^2 = 90.7$, $p < .001$; controlling for AUDIT score and drug use

Conclusions

Interactive toxicity beliefs are common among people living with HIV/AIDS.

Prospective analyses confirm beliefs that medications should be stopped when drinking predict non-adherence over and above alcohol and drug use.

Interventions to correct erroneous beliefs about mixing medications with substances may be easily implemented in clinical settings.

**Chauncey Cherry
Christina Amaral
Tamar Grebler
Moira Kalichman
Denise White
Mich'l Jones
Megan McNerney
Ginger Hoyt
Cyndi Merly
Brandi Welles
Daniel Driffin
Harlan Smith
Lisa Eaton
Demetria Cain
Jennie Pellowski**

The SHARE Project



**Supported by the National Institutes of
Health (NIMH, NIAAA, NINR, NIDA)**