Motivations for using khat

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Motivation

Motivation is the internal condition that activates behavior and gives it direction; and energizes and directs goal-oriented behavior.

Wikipedia

Drives/Motives underlying motivation

avoid

- Hunger
- Thirst
- Cold, hot
- Pain
- Social exclusion

seek

- Sexuality
- Power
- Curiosity
- Pleasure
- Justice, humanity

Natural vs. Learned Incentives

Food vs. Drugs

Traditional motivations to use khat

- Pleasure, altered state of consciousness
  - Euphoria, relaxation (upper class)
  - Creativity (upper class)
  - Alertness (travel, warship, study)
  - Transcendental experiences (Sufism)

Gros, 1982; Al-Motarreb et al., 2002; Krikorian, 1984

- Social functions
  - Inclusion, participation, strengthen social relations
  - Information exchange, solve problems
  - Learned incentives: Business, politics
- Reduce pain, hunger, fatigue (farmers, workers)
- Escapism (poor, psychological problems)
- Medical use (depression)

High culture vs. everyday use

High culture: Social regulation mechanisms

- Formalization: Embedded in a ritual/setting
- Rites of initiation in early adulthood
- Rules for minimizing negative effects
  - Social use setting (khat party)
  - After a meal
  - Having a walk before
  - Moderate amount
  - Stop to use early evening
  - Only weekend

What is different today?

- Different motivations today?
- Are the motivations still the same?
- What is the composition of motivations among users?

- Availability increased
- More users outside traditional user groups without traditional knowledge
- New khat cultures and use patterns develop

=> Khat is more and more an everyday drug

econometric approach

Khat expenditure analysis (Milanovic, 2008)

Djibouti

- Household Income Survey, 1997
- 2,380 households
- 15,701 individuals
- Khat consumption

Yemen

- Household Survey, 1998
- 13,641 households
- 97,544 individuals
- Khat purchases (underestimation)

Table 1: *Food Shares and Incidence of Households with the Presence of Qat Users by Welfare Decile*

Welfare decile (according to expenditures per equivalent adult)	Yemen		Djibouti	
	Food share in total expenditures	Incidence of qat users	Food share in total expenditures	Incidence of qat users
First (poorest)	0.69	0.62	0.65	0.07
Second	0.54	0.64	0.58	0.29
Third	0.43	0.63	0.51	0.34
Fourth	0.35	0.66	0.48	0.42
Fifth	0.30	0.69	0.46	0.52
Sixth	0.26	0.68	0.42	0.57
Seventh	0.24	0.70	0.41	0.64
Eighth	0.21	0.74	0.39	0.70
Ninth	0.18	0.76	0.35	0.75
Tenth (richest)	0.17	0.81	0.28	0.71
Average share	*0.26*	*0.69*	*0.46*	*0.50*

Note: Expenditure per equivalent adult are defined as: total expenditures divided by (household size)$^{0.75}$.

Milanovic, 2008

Comparison

Yemen

- Male > female
- Rural = urban
- Higher education

⇒ Less chewers

⇒ Higher expenditures

- Rich = poor
- No food substitution

Djibouti

- Male > female
- Rich > poor
- Khat substitutes food

Conclusions

- Motivations to use khat differ in Yemen and Djibouti

- Yemen:
  - social motivation
  - khat is part of social life
  - not chewing = social exclusion

individual approach

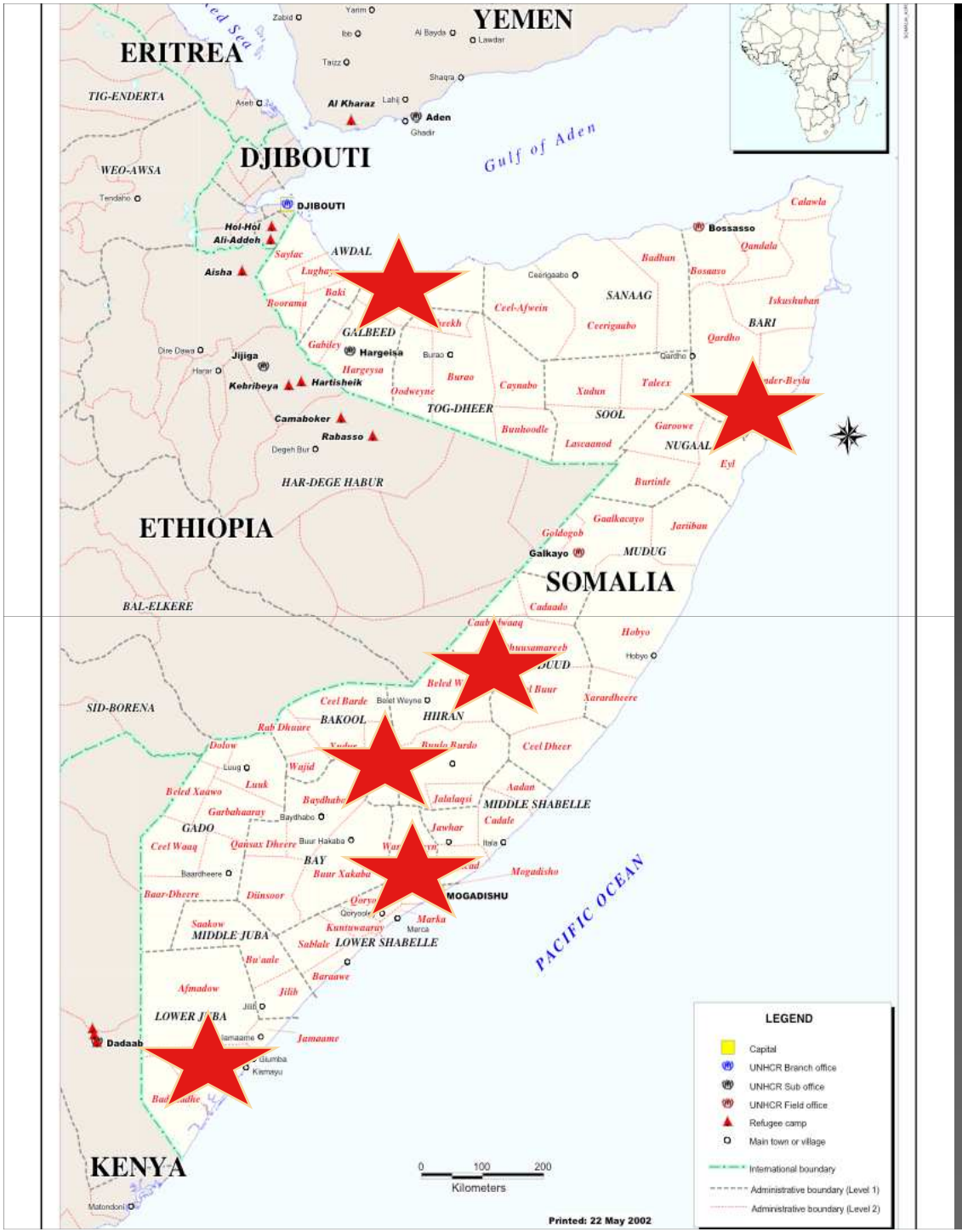
“ Most men and women lead lives at the worst so painful, at the best so monotonous, poor, and limited that the urge to escape, the longing to transcend themselves if only for a few moments, is and has always been one of the principal appetites of the soul. Art and religion, carnivals and saturnalia, dancing and listening to oratory - all these have served in the H.G. Well’s phrase, as Doors in the Wall. And for private and everyday use, there have always been chemical intoxicants. All the vegetable, sedatives and narcotics, all the euphorics that grow on trees, the hallucinogens that are in berries or can be squeezed from roots - all without exception, have been known and systematically used by human beings from time immemorial.”

Aldous Huxley, Doors of Perception, 1954

Escapism - “Door in the wall”

- Unemployment
- Hopelessness
- Unfulfilled wishes (academic career, leaving the country)
- No alternative spare-time activities
- Chewing = social support

Bhui et al., 2003, 2006; Nabuzoka & Badhadhe, 2000; Rousseau et al., 1998; Zarowsky, 2000; Hansen, 2009



Assessment of
> 8.700 militia in 6 regions

of Somalia

Somali Peace Conference Mbaghati, 2003: preparation of DDR in all Somalia

Odenwald et al. (2007) *PLoS Med*
Odenwald et al. (2009) *Soc Sci Med*

Deutsche Gesellschaft für
Technische Zusammenarbeit (GTZ) GmbH

Methods and Design

Design:

- Convenience samples in 6 regions of Somalia
- Trained local interviewers
- 8.723 militia members approached
- 8.124 included (93.1%) , i.e. 11.4% of all men under arms in Somalia

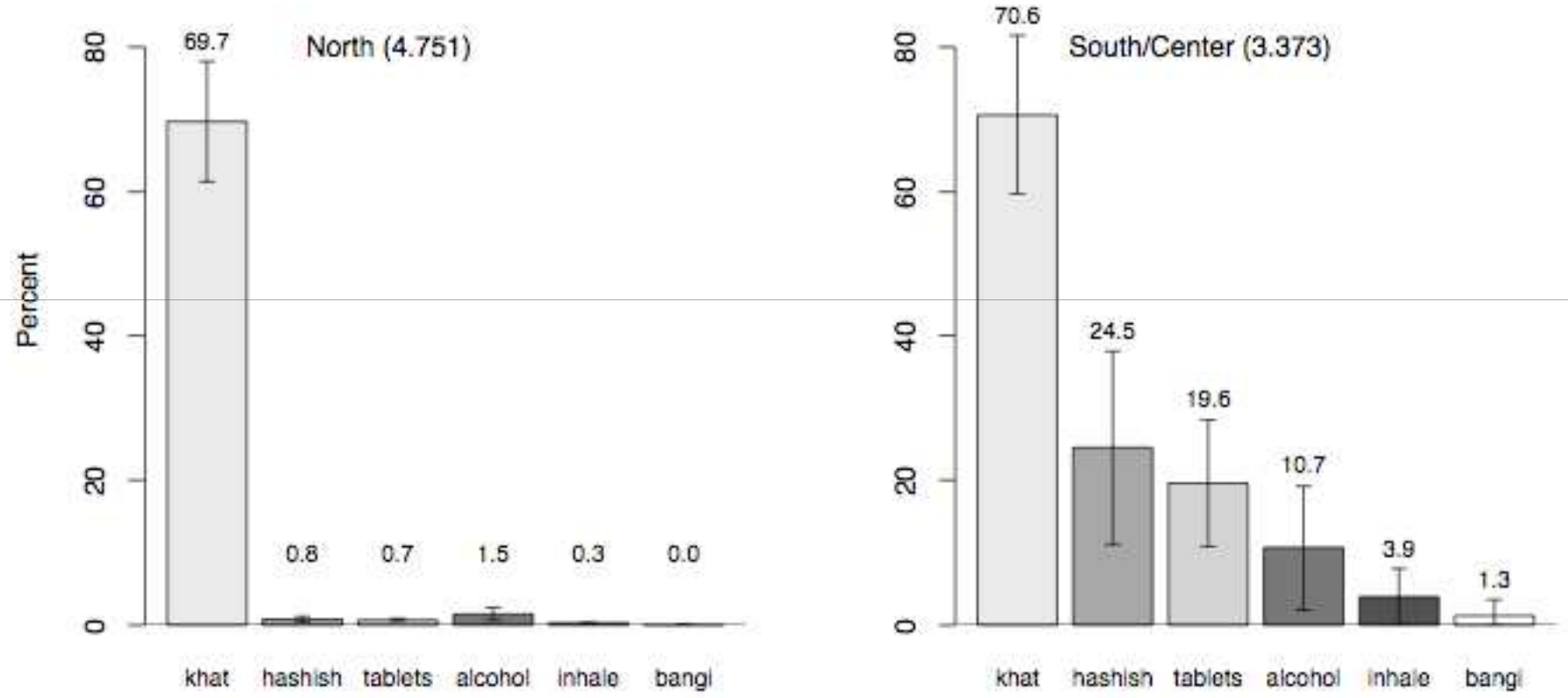
Instruments:

- Short version of Somali PDS (Odenwald et al., 2007)

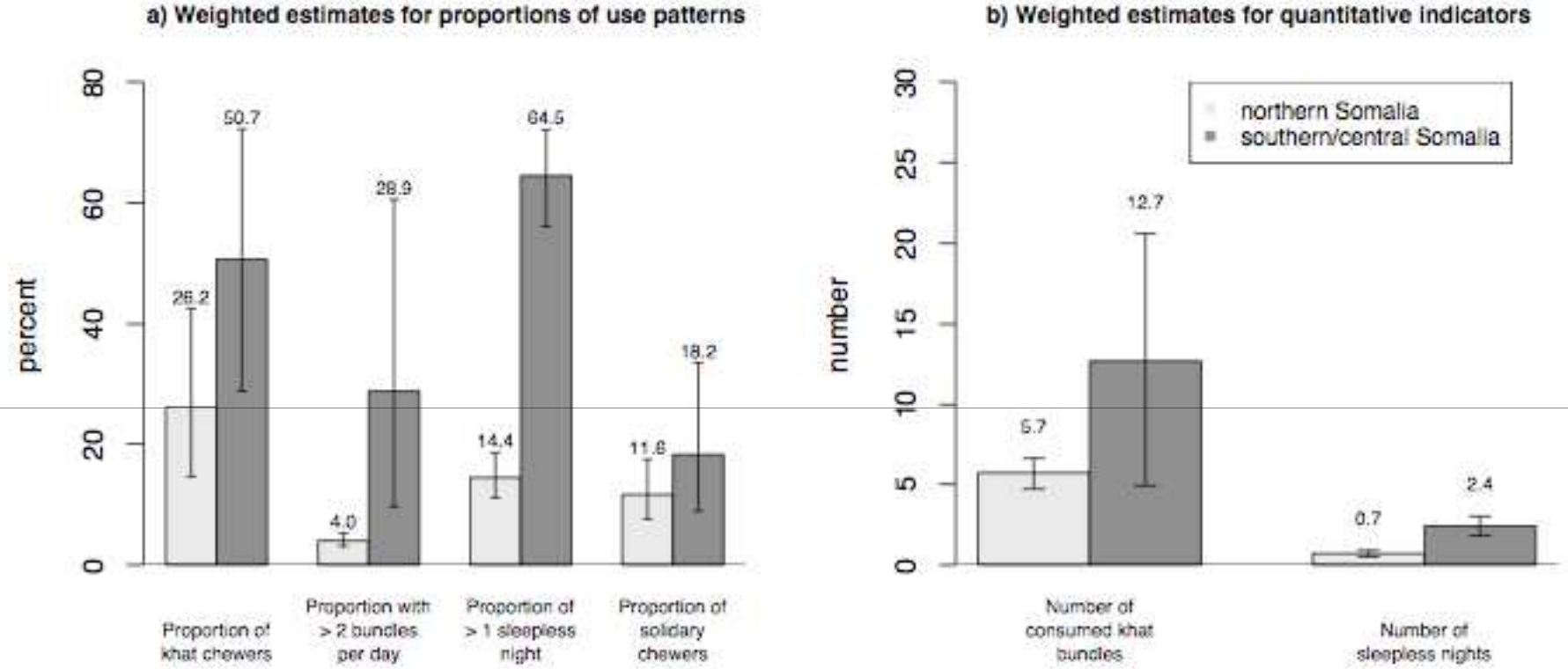
  Against CIDI (expert):

  - Specificity .96
  - Sensitivity .55
  - Kappa = .57 ($p < .001$)
- Paranoia: CIDI-item, rating: bizarre
- Khat bundles last week
- Self-medication

Perceived drug use in military units in the previous week (weighted estimates for perceived proportion of users)



Different khat consumption patterns between northern and southern/central Somalia (related to the week before the interview)

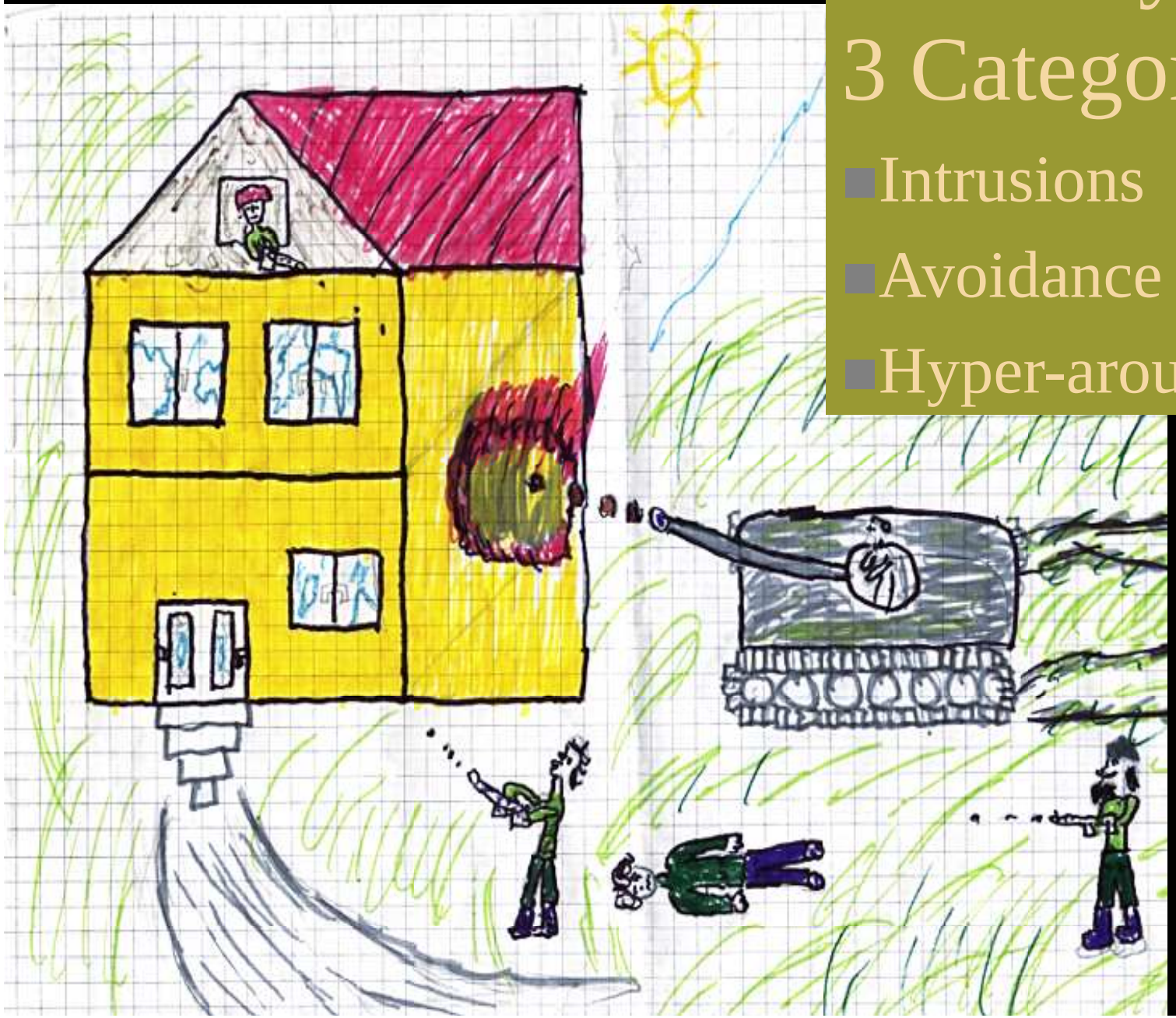


Functional use

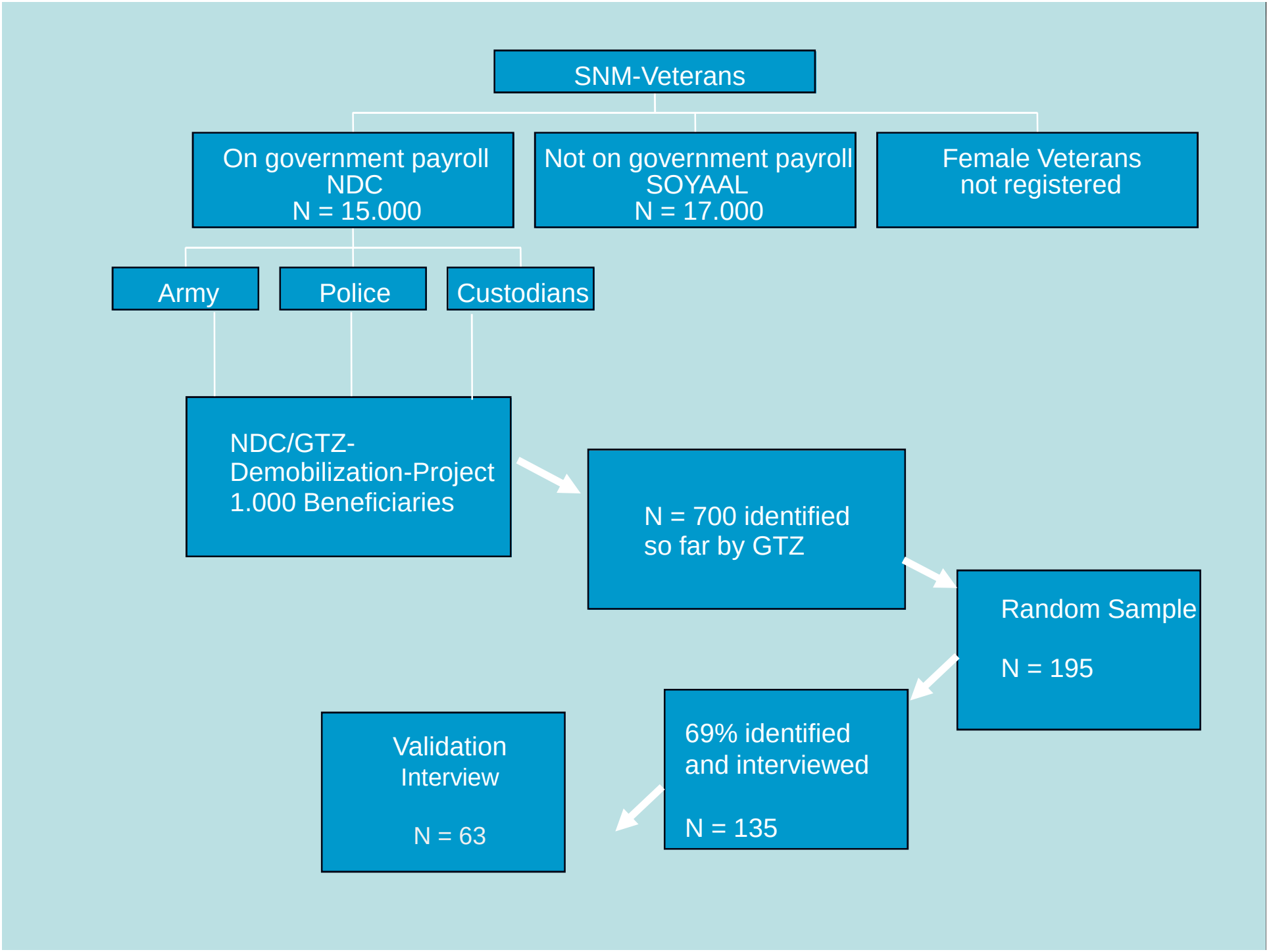
Use of substances to modify unpleasant emotional states, often related to clinical syndromes like depression or anxiety

PTSD Symptoms 3 Categories:

- Intrusions
- Avoidance
- Hyper-arousal




EC/GTZ DRP Somaliland
Psycho-social needs assessment of ex-combatants, 2002
Deutsche Gesellschaft für
Technische Zusammenarbeit (GTZ) GmbH

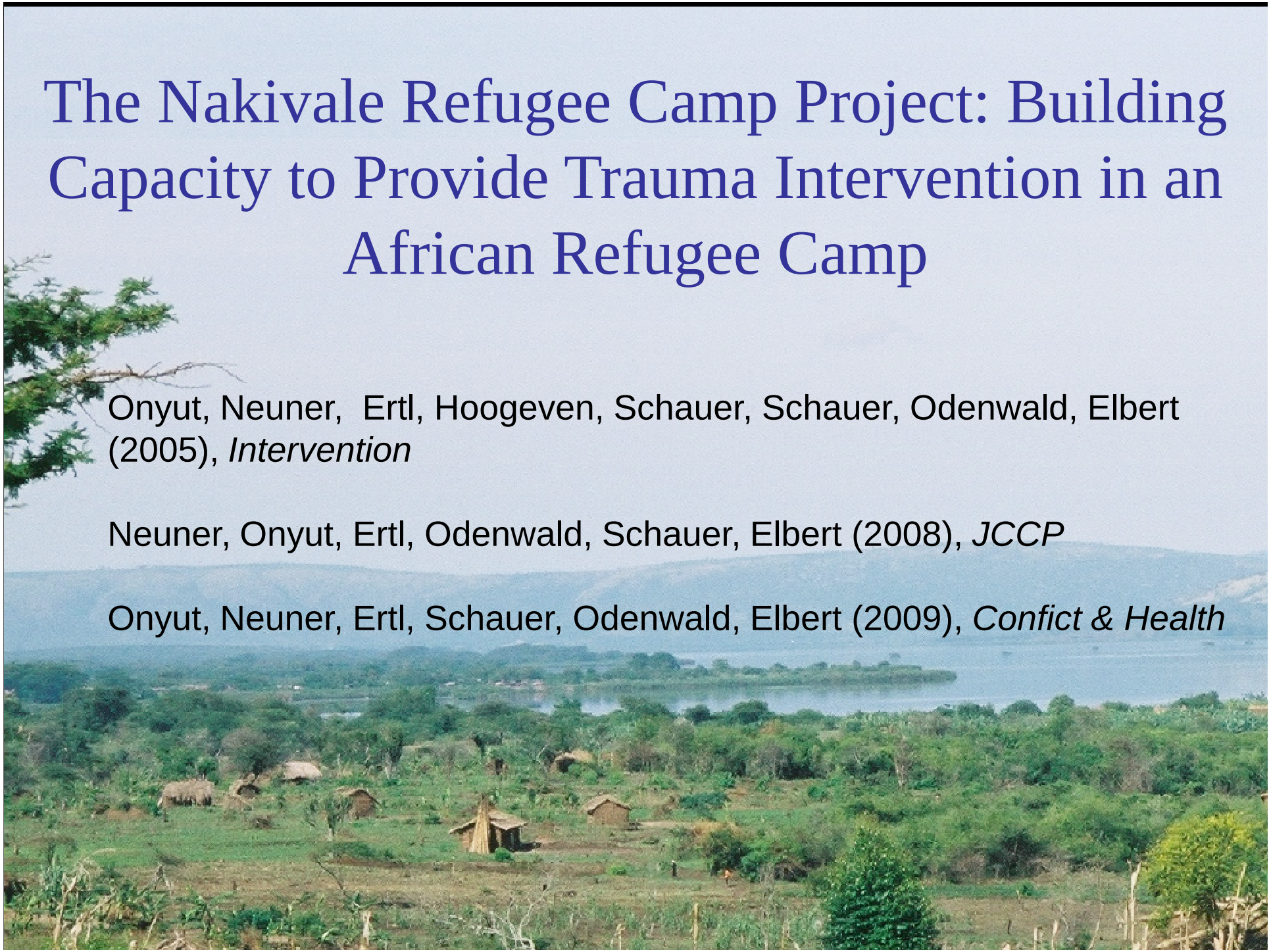

SNM-Veterans
On government payroll
NDC
N = 15.000
Not on government payroll
SOYAAL
N = 17.000
Female Veterans
not registered
Army
Police
Custodians
NDC/GTZ-
Demobilization-Project
1.000 Beneficiaries
N = 700 identified
so far by GTZ
Random Sample
N = 195
69% identified
and interviewed
N = 135
Validation
Interview
N = 63

Validation interview: PTSD and associated symptoms

	PTSD (14)	No PTSD (48)	p
SRQ-20 sum score	9.07 (5.05)	2.52 (4.11)	< .001
Average hours chewing khat per day in last week	5.54 (5.94)	3.14 (2.46)	.037
Hours of sleep per 24 h in previous week	6.43 (2.95)	8.54 (2.39)	.007

Odenwald et al., 2007, *Conflict & Health*

The Nakivale Refugee Camp Project: Building Capacity to Provide Trauma Intervention in an African Refugee Camp



Onyut, Neuner, Ertl, Hoogeven, Schauer, Schauer, Odenwald, Elbert (2005), *Intervention*

Neuner, Onyut, Ertl, Odenwald, Schauer, Elbert (2008), *JCCP*

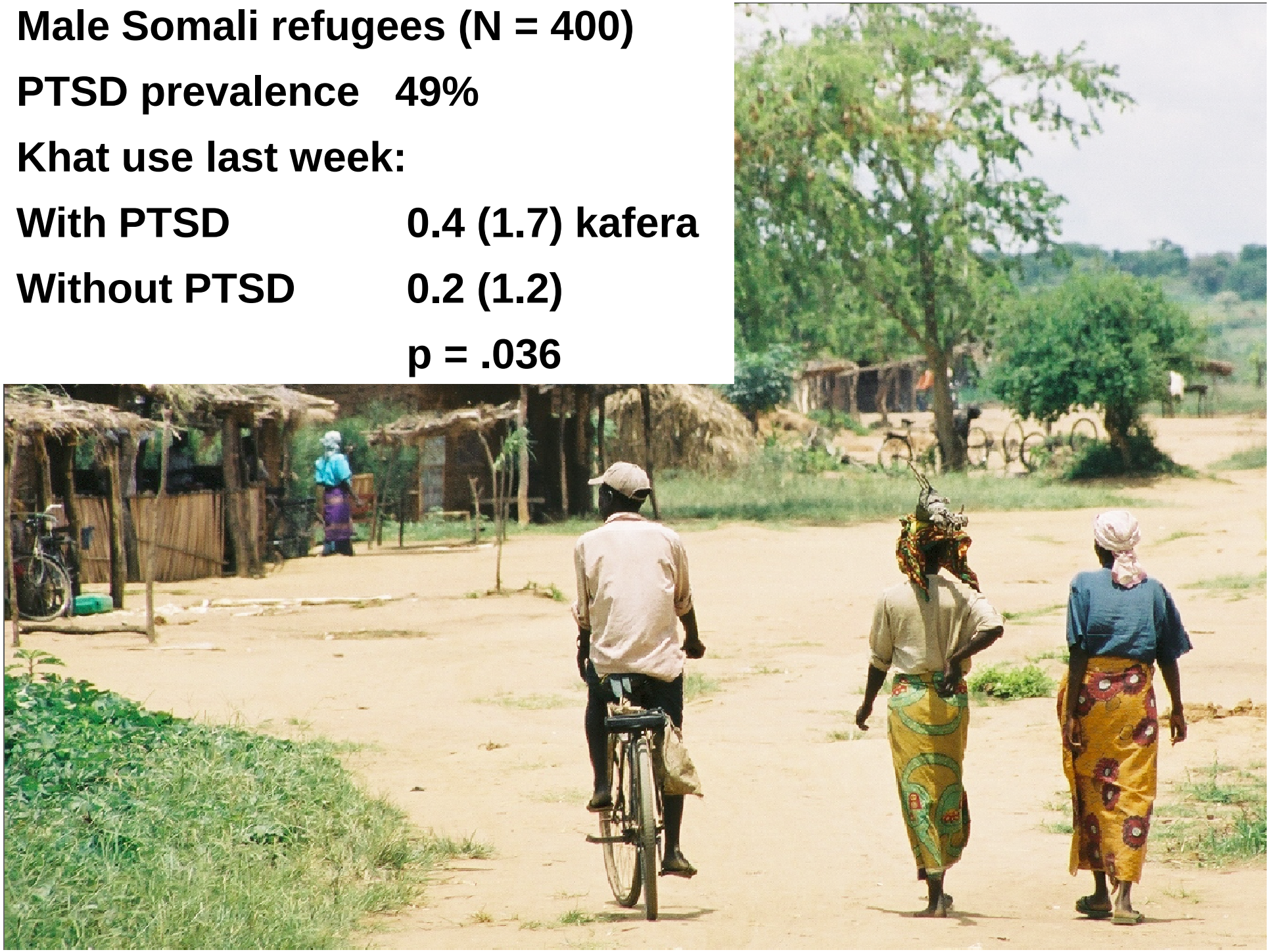
Onyut, Neuner, Ertl, Schauer, Odenwald, Elbert (2009), *Confict & Health*

Male Somali refugees (N = 400)

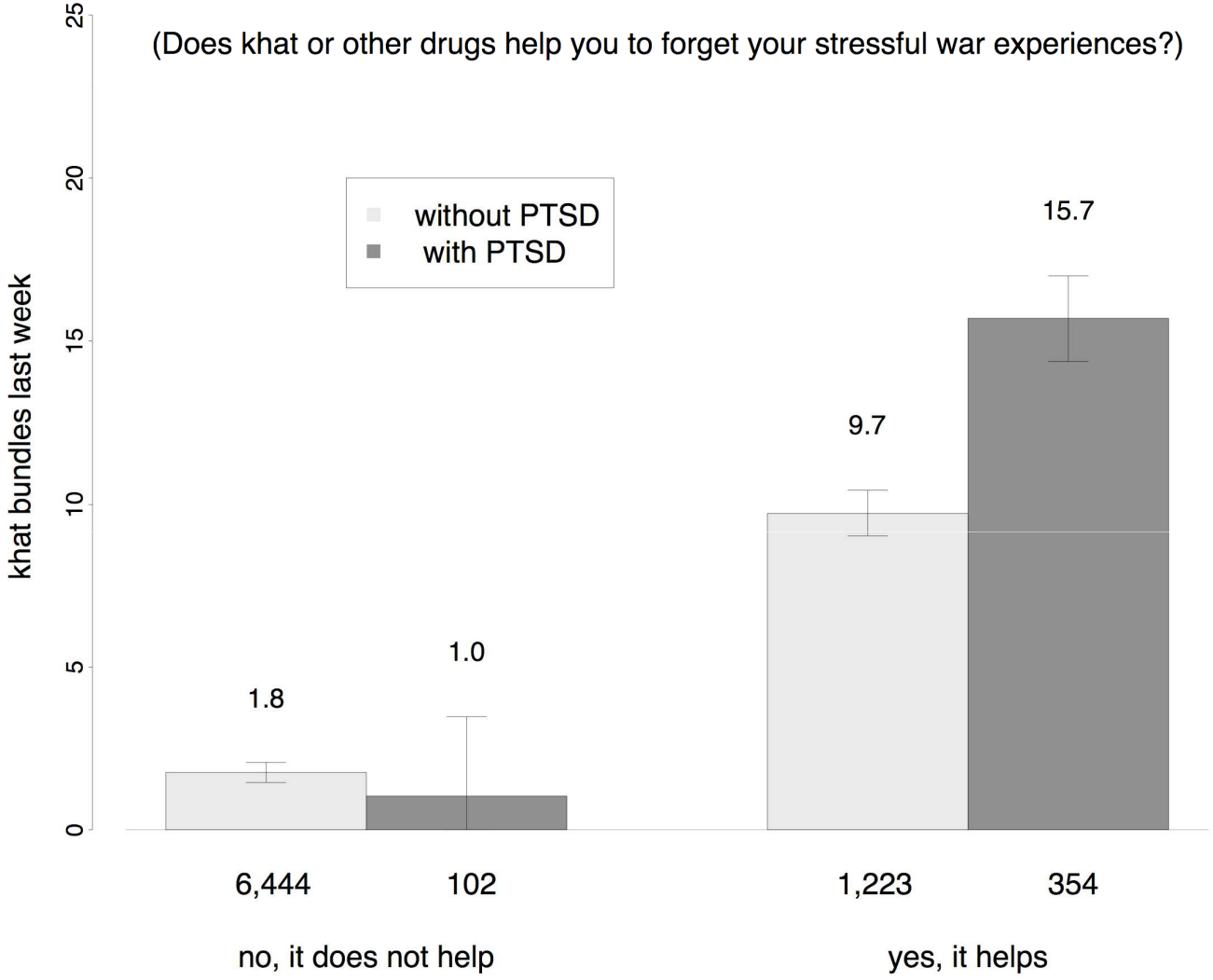
PTSD prevalence 49%

Khat use last week:

With PTSD	**0.4 (1.7) kafera**
Without PTSD	**0.2 (1.2)**
	p = .036



Khat use (means and 99% CI) by PTSD and functional use



ANOVA (dependent: khat bundles)

	F	df	p
PTSD	37.2	1	<.001
Self-medication	693.1	1	<.001
interaction	60.5	1	<.001

Total Adjusted R^2 .214

Odenwald et al., 2009, *Soc Sci Med*

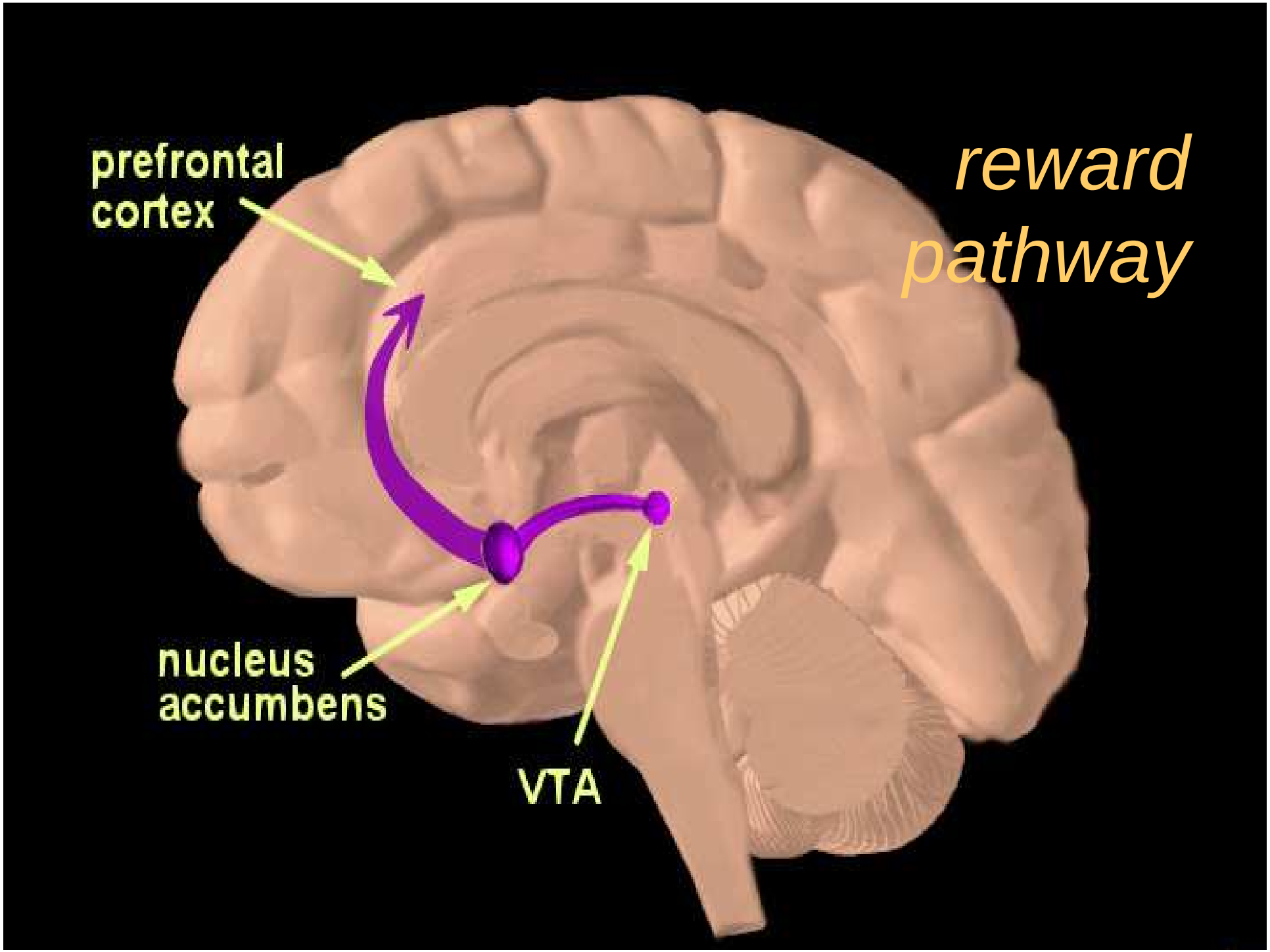
Khat Addiction

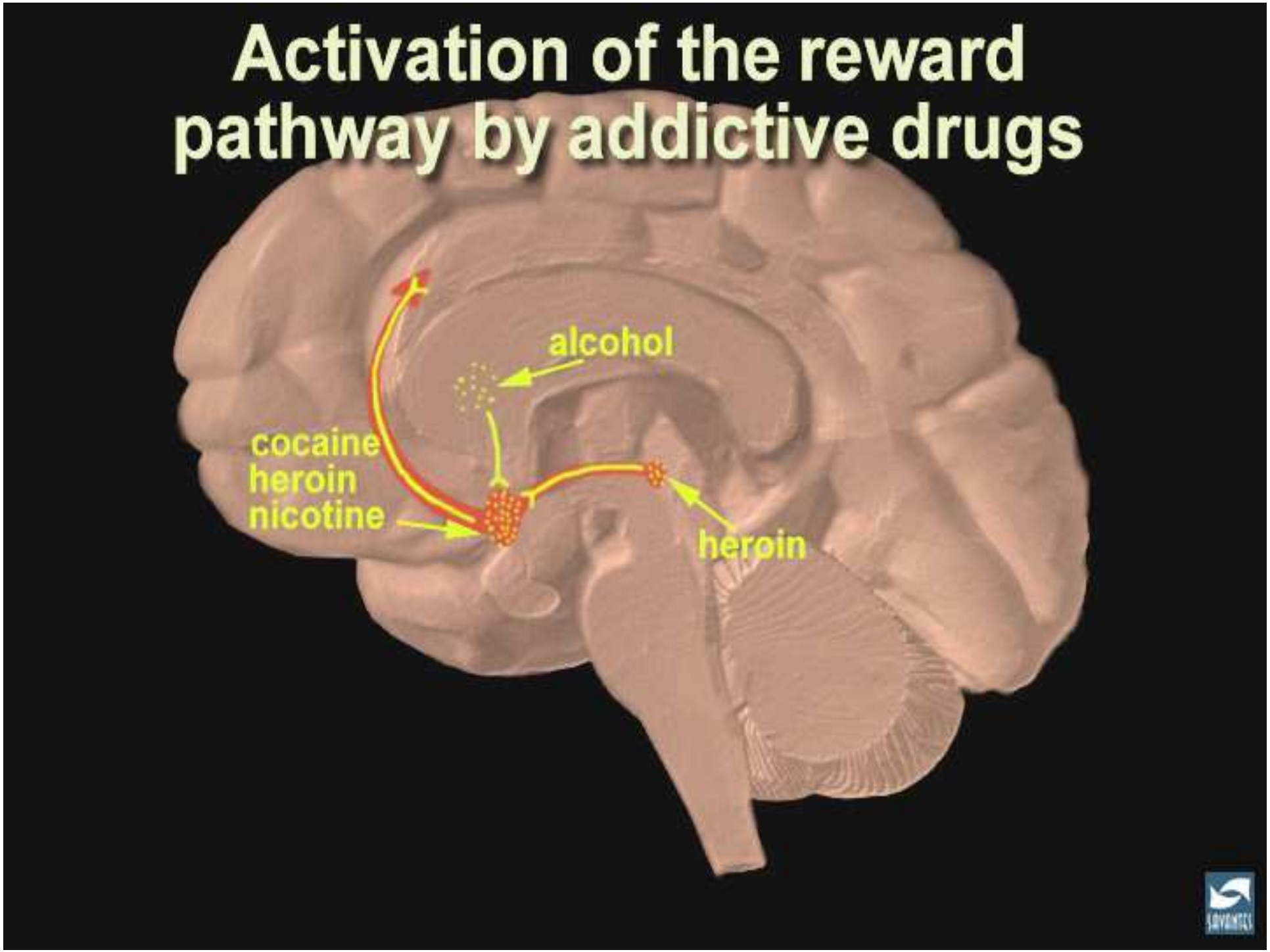
Substance Dependence (DSM IV)

- Continued use despite of substance-related problems
- Symptoms:
  - Tolerance
  - Withdrawal
  - Attempts to quit
  - Significant time spent
  - Continued use despite of knowledge
- Lifetime prevalence (high income countries): 5%

Prevalence of dependence

- Amphetamines (USA; Anthony et al., 1994):
  - Lifetime use (adult general population): 15%
  - Proportion who develop dependence: 11%
  - Prevalence in adult general population: 1,7%
- Khat (Ethiopia, khat producing area, Awas et al., 1999):
  - Lifetime prevalence of khat dependence among adult males: 5%


prefrontal cortex
reward pathway
nucleus accumbens
VTA


Activation of the reward pathway by addictive drugs
alcohol
cocaine
heroin
nicotine
heroin

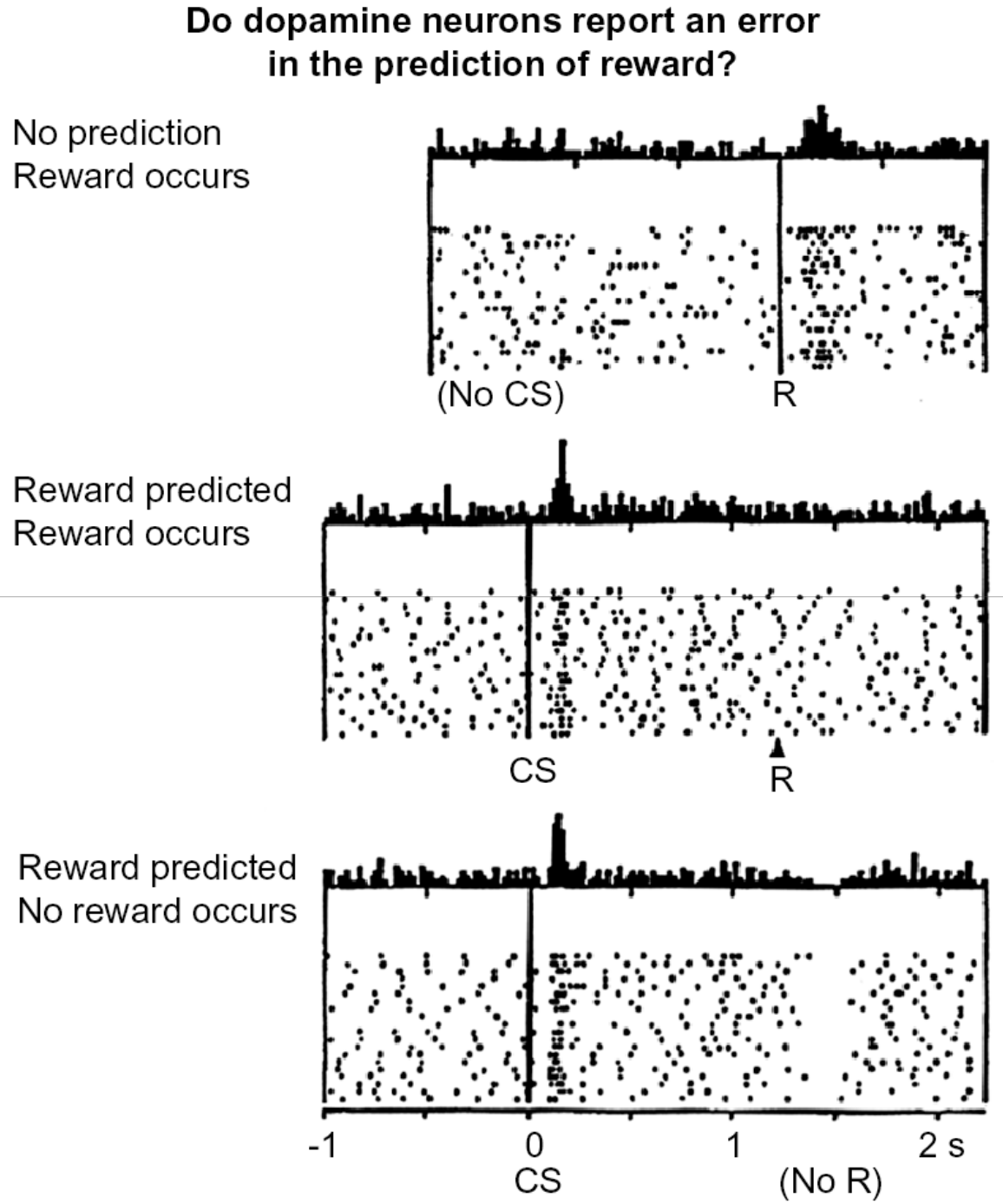
Neurophysiological view on dependence

Tim Condon, Vice-President , NIDA (2008):

- Reward/Saliency (Nacc, Ventral Pallidum)
- Memory/Craving (Amygdala, Hippocampus)
- Motivation/Drive (OrbitoFC, Superior Cingulate Cortex)
- Inhibitory Control (PFC, Anterior Cingulate Gyrus)

Repeated intracranial measurement at single neuron level (VTA), monkey

Schultz et al., 1997, Science



Severity of psychological dependence

- SDS (Gossop et al., 1995)
- Numerous studies with addicts around the world

In the last four weeks, ...

did you ever think your ... use was out of control?

did the prospect of not taking ... make you anxious or nervous ?

did you worry about your ... use?

did you wish you could stop?

would you find it difficult to stop?

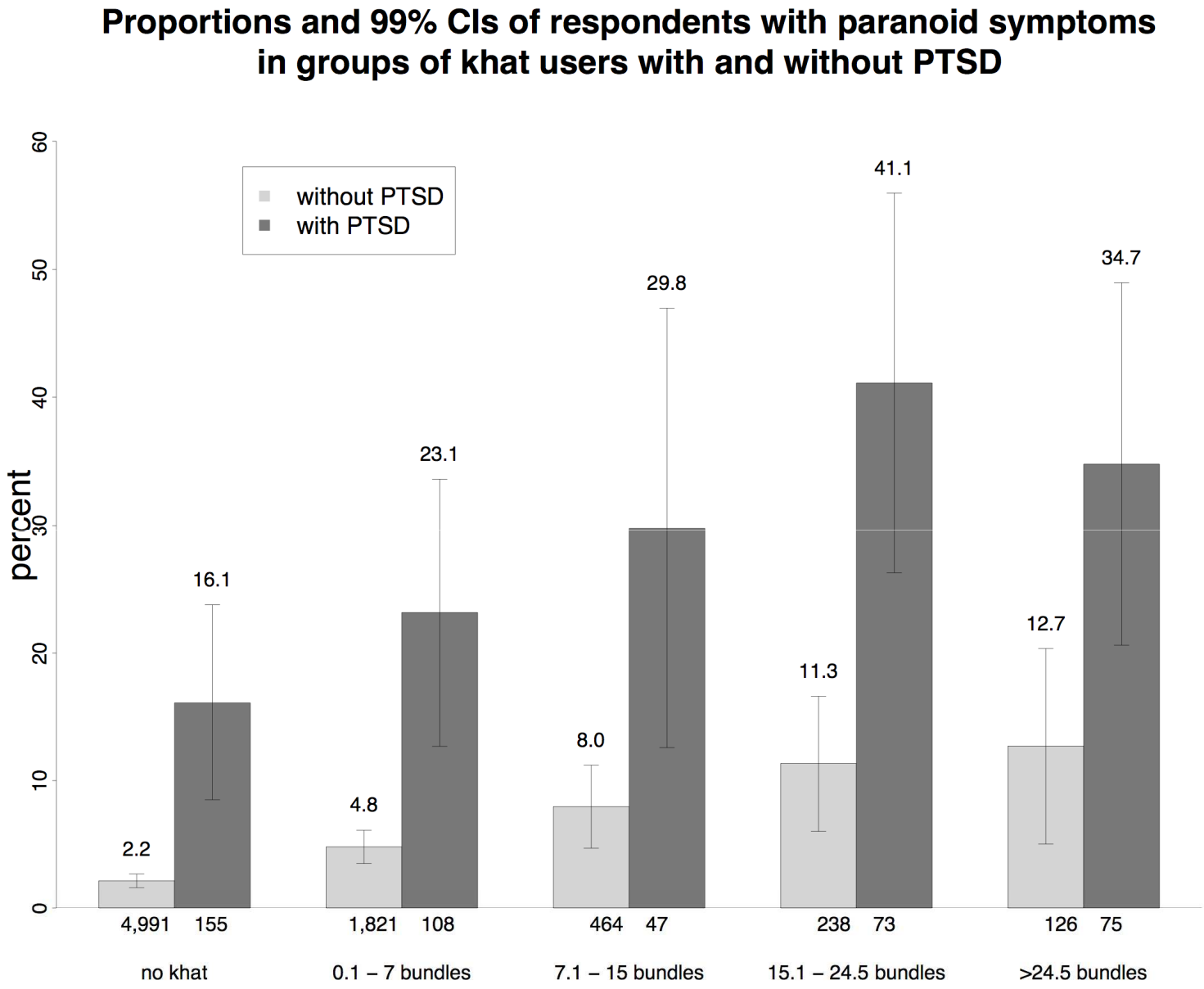
Proportion of extreme dependent

How many khat users score above a critical value?

Griffiths, 1998	155 Somalis, London	10%
Kassim & Croucher, 2006	75 Yemenis, Sheffield, Birmingham	39%

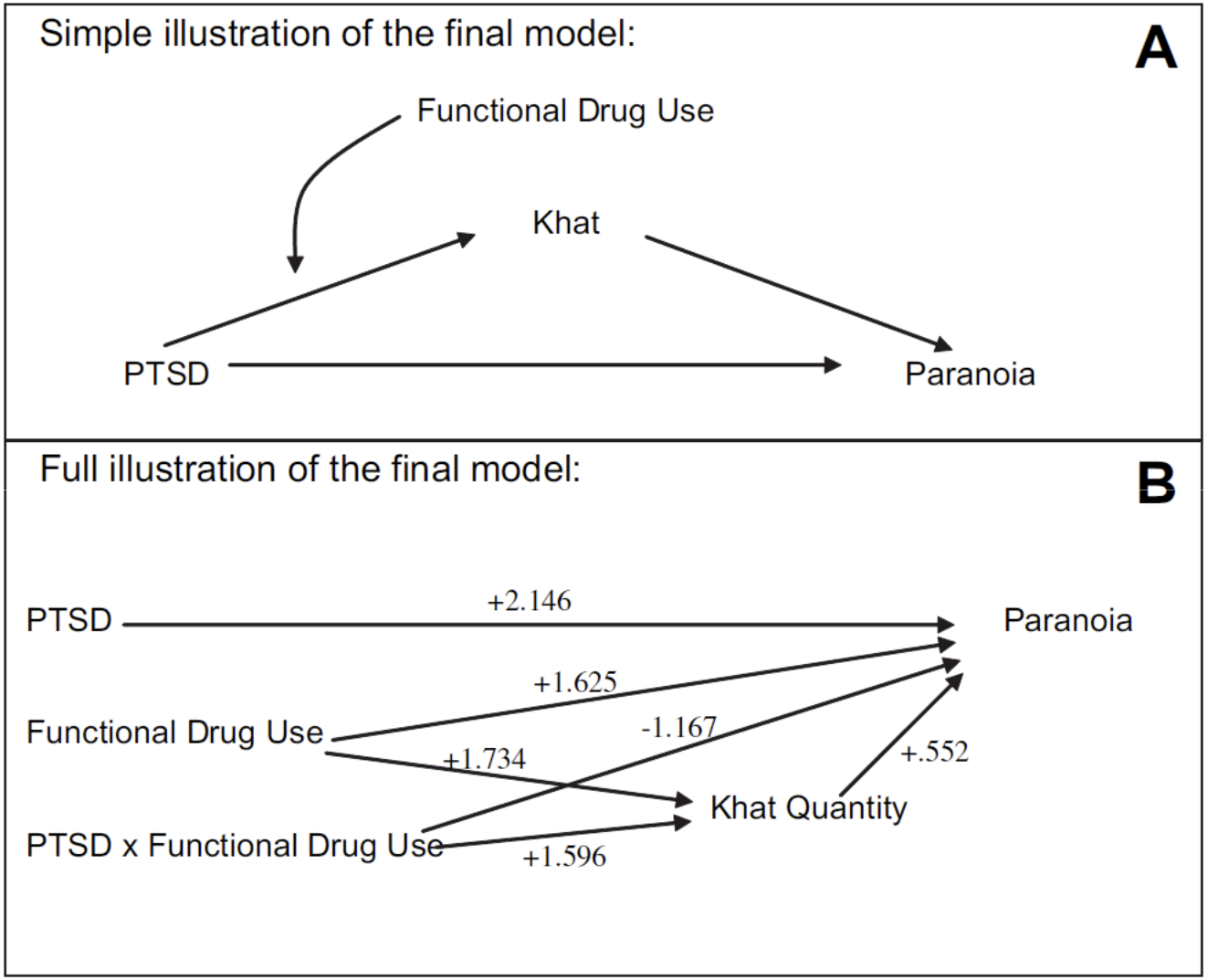
Psychotic symptoms
Psychosis

How do escapism, functional use and addiction contribute to psychosis?



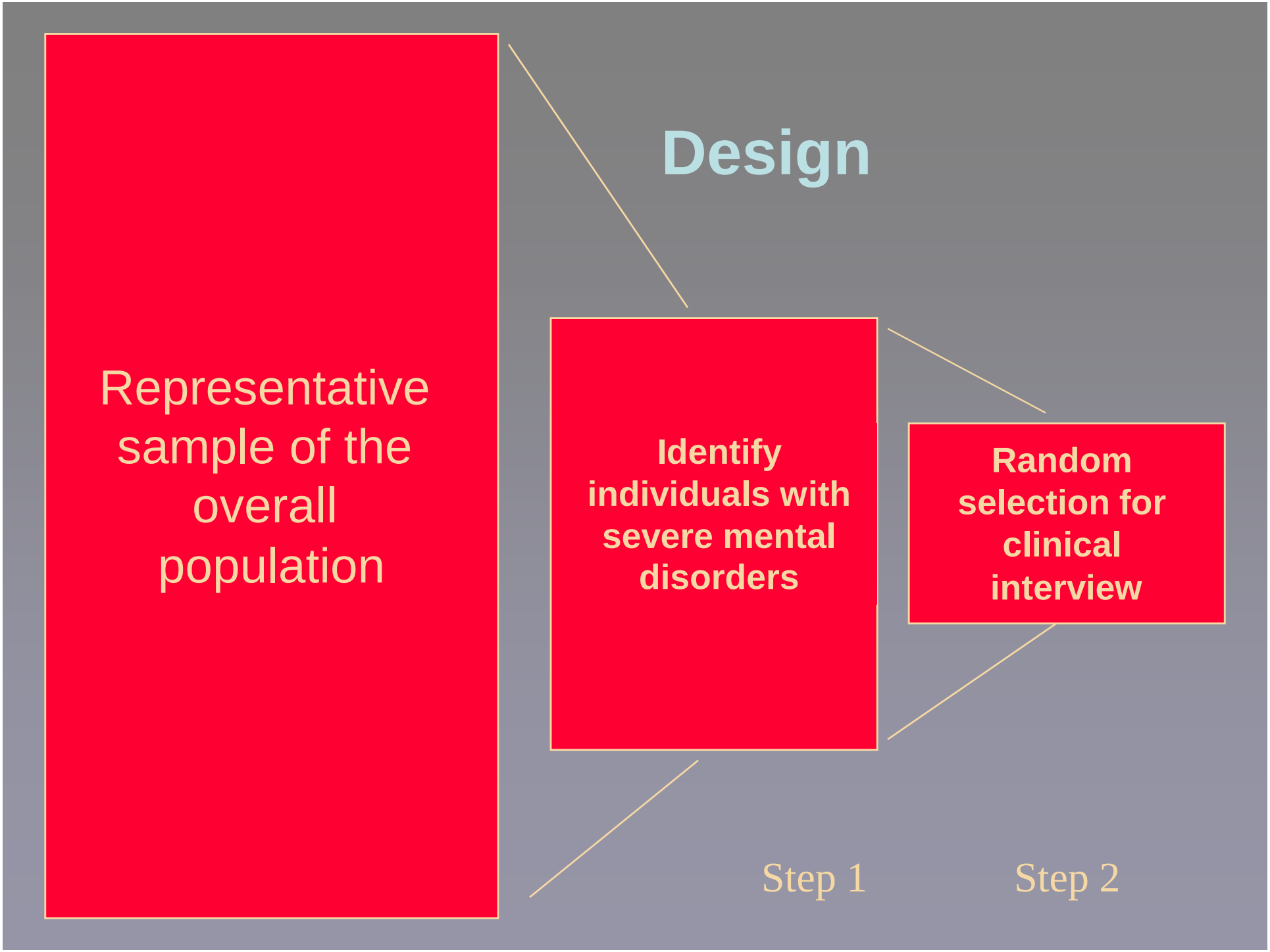
Odenwald et al., 2009, *Social Science and Medicine*

Causal Path Model of Paranoid Development



Odenwald et al., 2009, *Social Science and Medicine*


Odenwald (2005), *BMC Med*, 3:5
612 households in Hargeisa


Design
Representative sample of the overall population
Identify individuals with severe mental disorders
Random selection for clinical interview
Step 1
Step 2

169 Cases identified

Functioning problems due to severe mental disorder

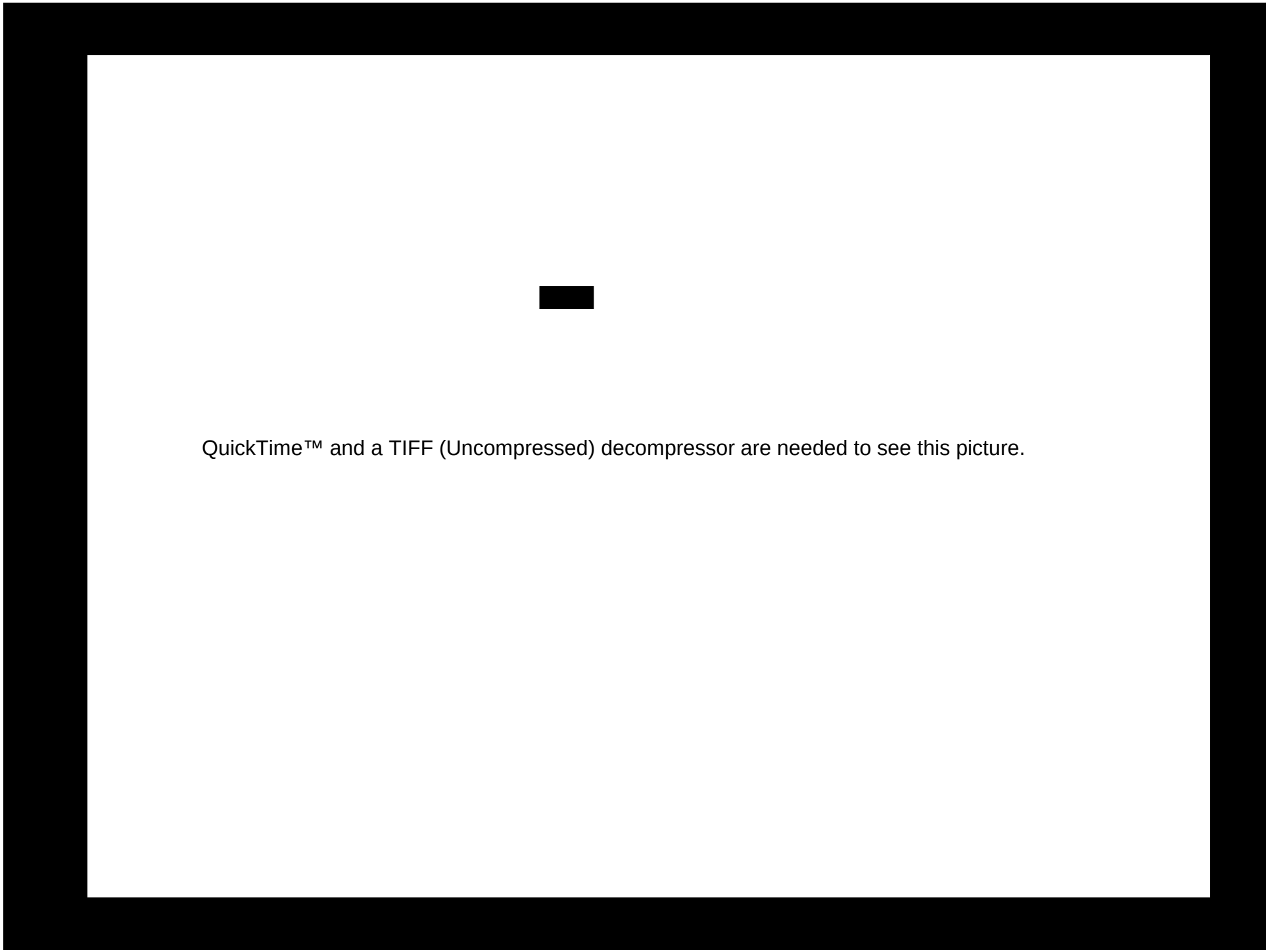
	With	**Without**	% (among > 12 years)
Male	137	2.312	8.4
Female	32	2.373	1.9

Every 5th household cares for family members with mental disorder

85% of them have a psychotic disorder

Management of severe mental disorders

	Men N = 137	Women N = 31
Years in Chains	3.1 (3.9)	1.0 (2.9)
Years locked in (not chained)	3.6 (4.7)	4.9 (6.3)


QuickTime™ and a TIFF (Uncompressed) decompressor are needed to see this picture.

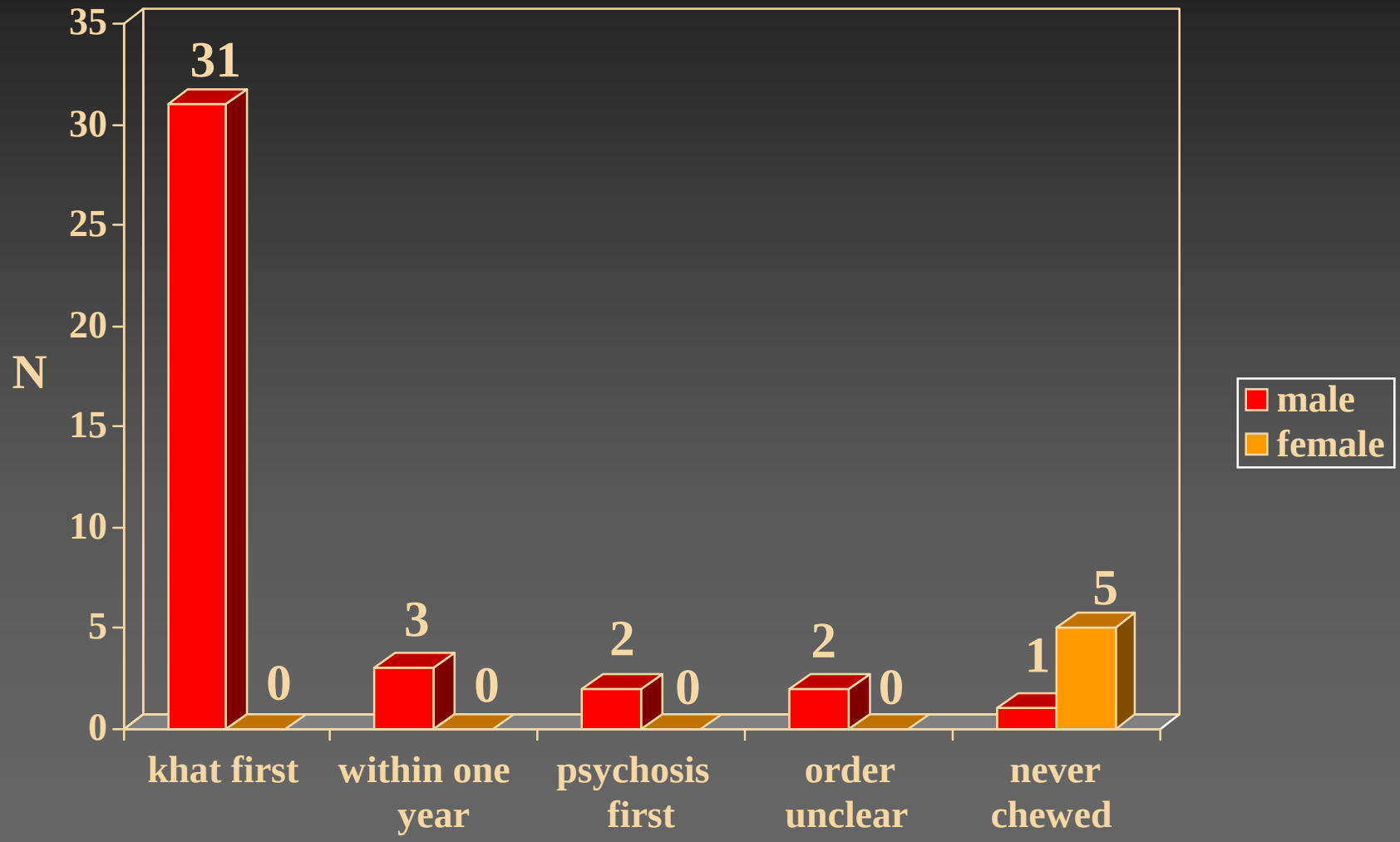
Randomly selected groups of cases

	Psychosis N = 43	Control N = 43	
Age of first khat intake	16.5 (4.2)	20.4 (7.0)	p = .008
Age of psychosis onset	23.4 (9.8)	-	

Mean difference 8.6 years (6.6), median 7

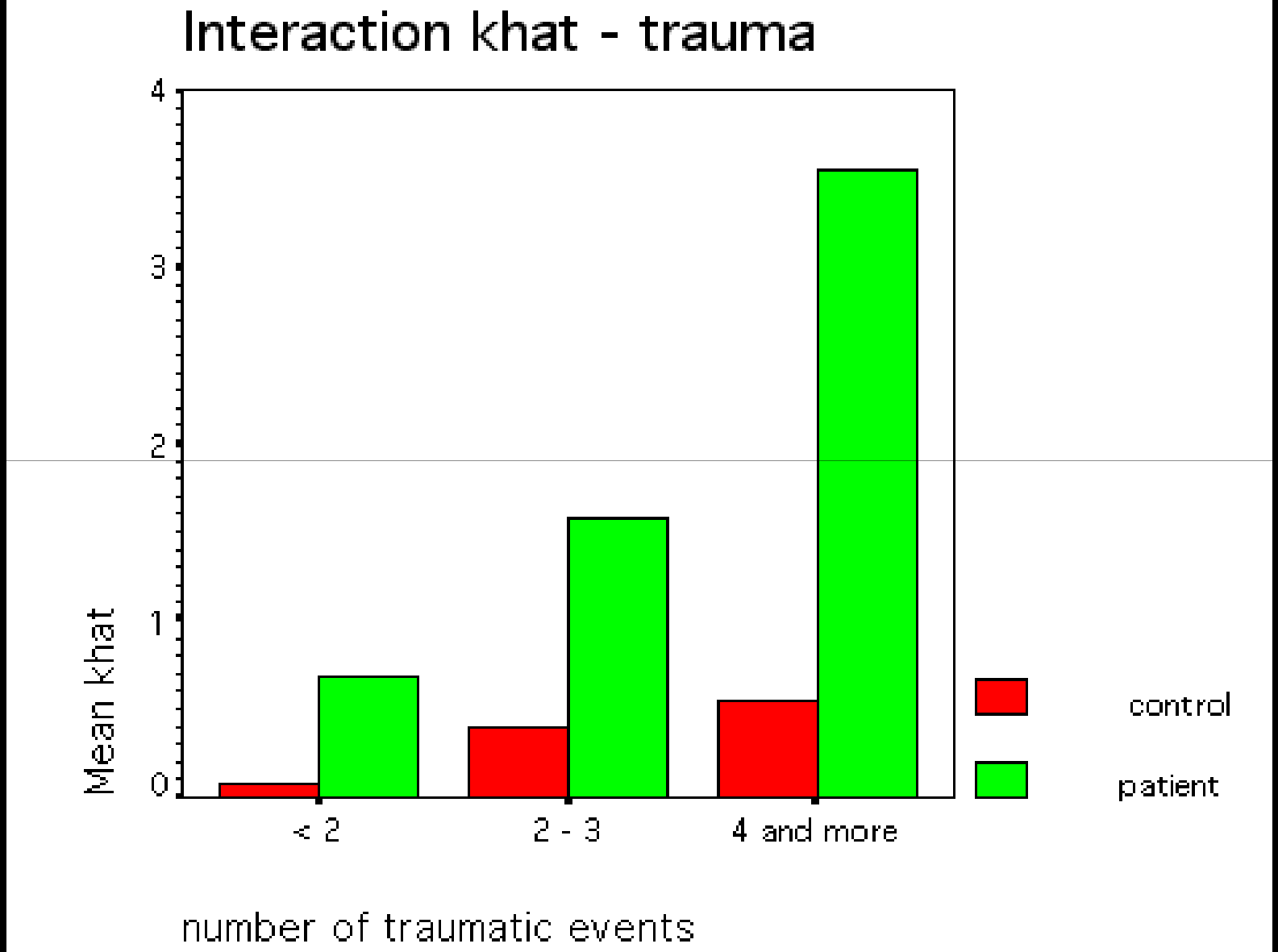
Order of onset

43 cases with psychosis



Odenwald et al., 2005

	Psychosis N = 43	Control N = 43	
Ever chewed khat in life	88.6%	59.1%	p = .008
Khat per day week before interview	1.1 (2.4)	0.3 (0.7)	p = .024
Khat per day weeks before onset	2.1 (2.0)	0.3 (0.6)	p < .001


Interaction khat - trauma
Mean khat
4
3
2
1
0
< 2
2 - 3
4 and more
number of traumatic events
control
patient

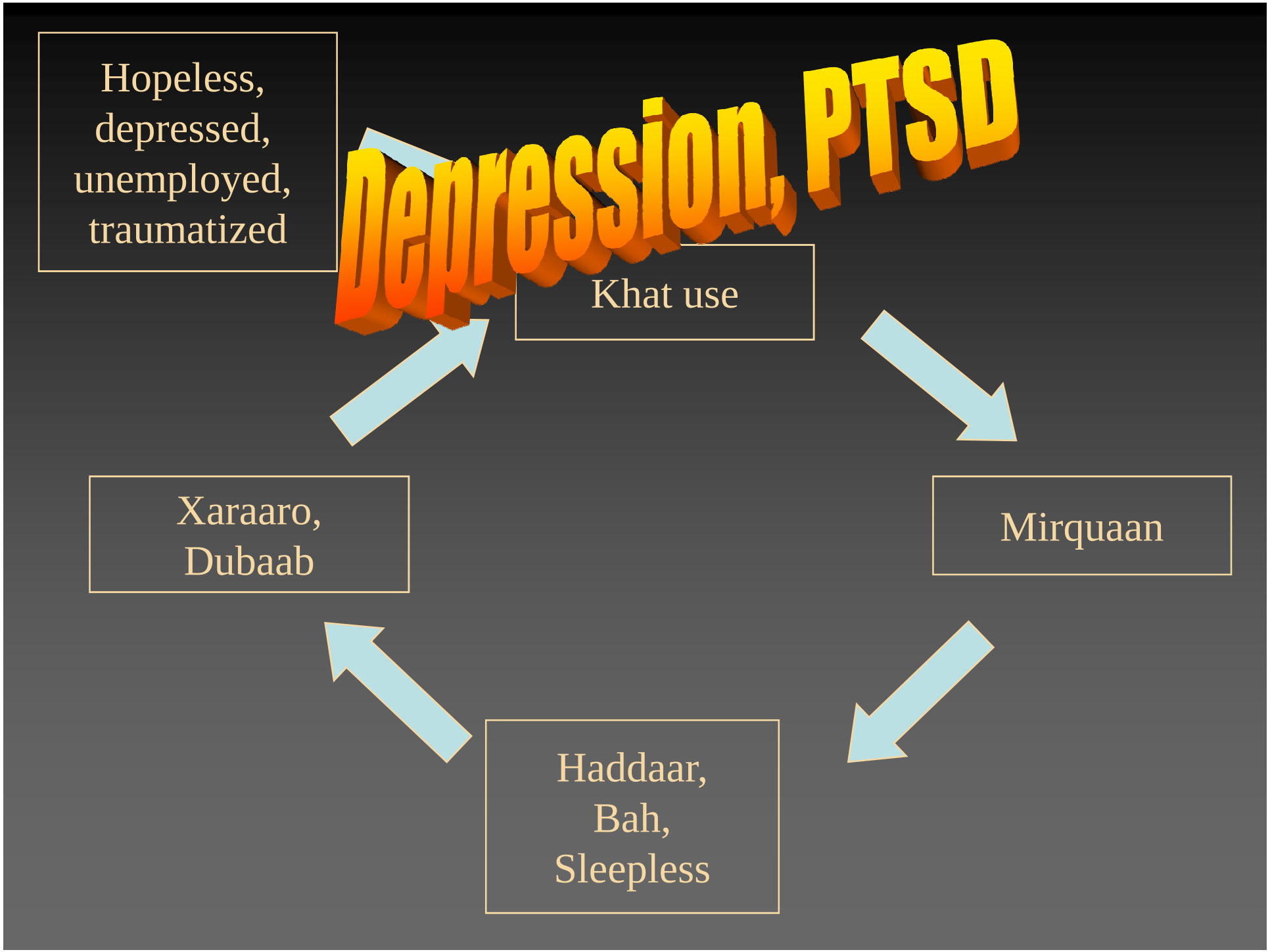
Two risk factors:

- Excessive khat use
- Traumatic experiences

Window of vulnerability:

- Adolescence

Conclusion


Hopeless, depressed, unemployed, traumatized
Depression, PTSD
Khat use
Mirquaan
Haddaar, Bah, Sleepless
Xaraaro, Dubaab


Hopeless, depressed, unemployed, traumatized
Khat use
Addiction
Xaraaro
prevent Du
Mirquaan
Haddaar, Bah, Sleepless


Hopeless, depressed, unemployed, traumatized, stigmatized
Psychosis
Mirquaan, Grandiosity, Desorientation
Haddaar, Bah, Sleepless, Paranoia, Voices, Aggression

Escapism, functional use: excessive khat use

Addiction

Psychotic symptom, brief psychotic disorder

Chronic psychotic disorder

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Thank you