Marijuana Dependence: What does the treatment literature tell us?

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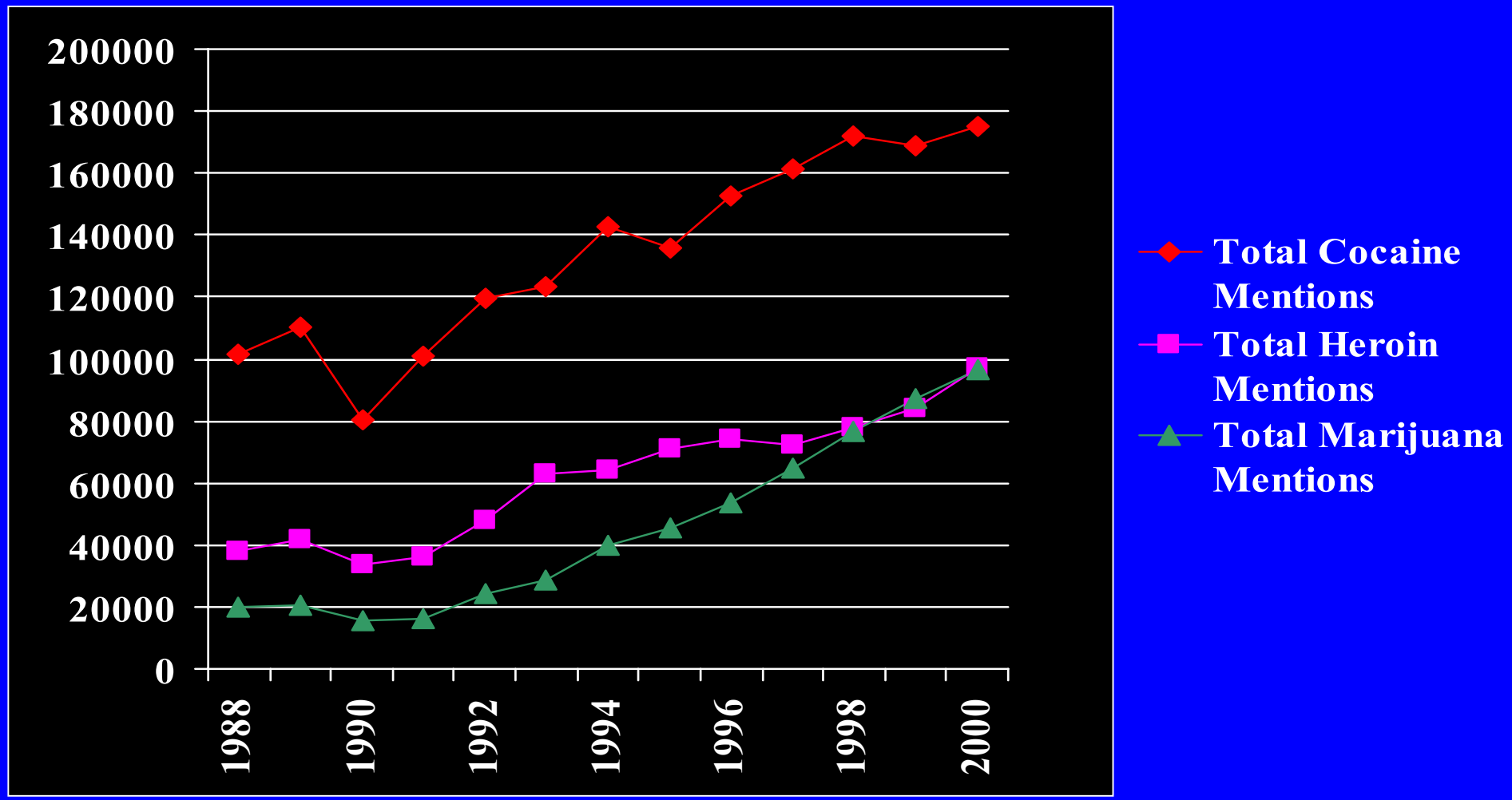
The Dangers of Marijuana

" Marihuana is an addictive drug which produces in its users insanity, criminality and death"

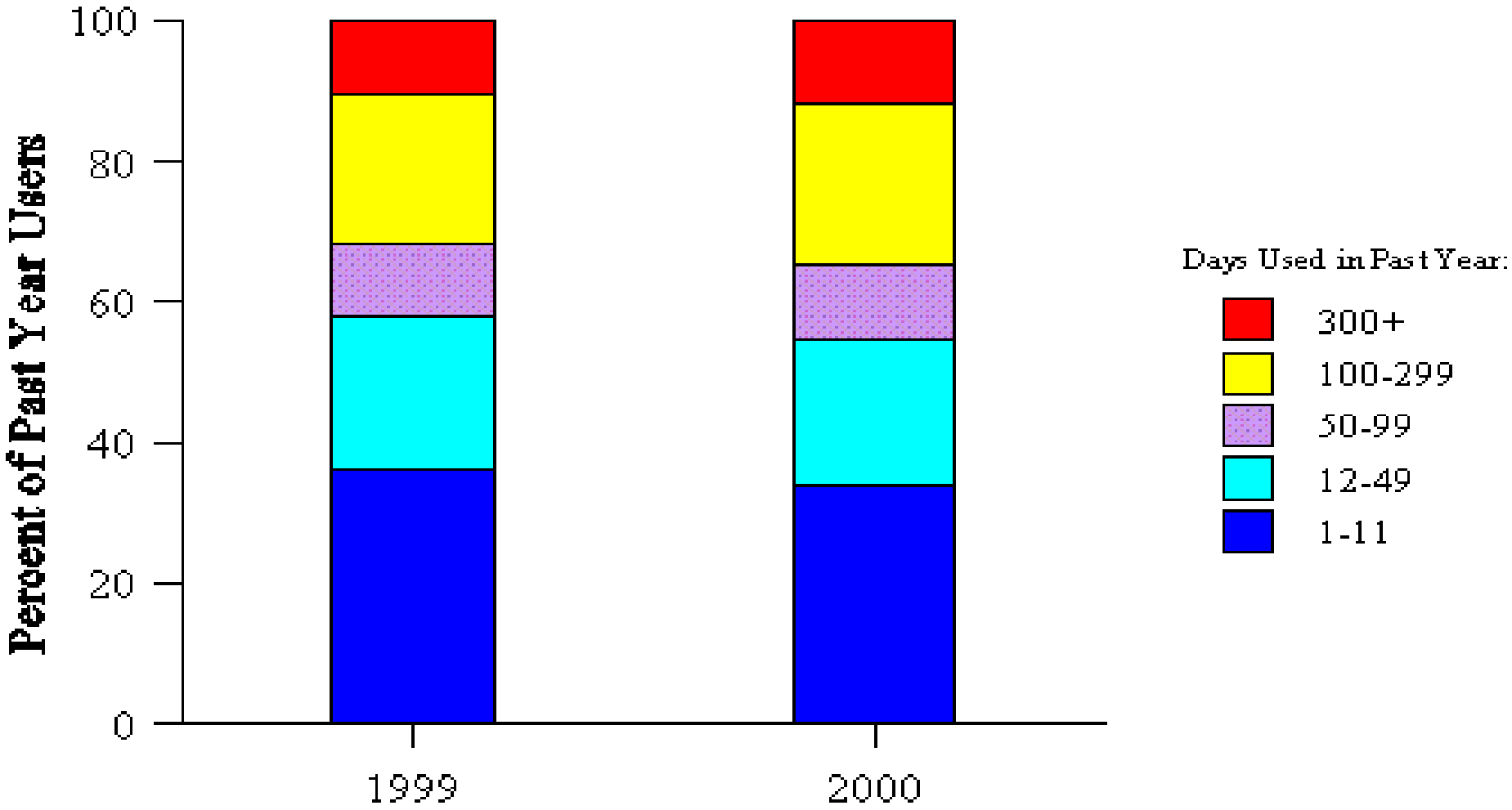
Congressional Testimony of Commissioner Anslinger Based on Information Provided by New Orleans DA Stanley

Trends in Drug-Related Emergency Room Episodes and Selected Drug Mentions, 1988-2000



Source: *Drug Abuse Warning Network*, National Institute on Drug Abuse (1988-1991) and Substance Abuse and Mental Health Services Administration (1992-2000)

Figure 2.15. Frequency of Marijuana Use Among Past Year Users Aged 12 and Older: 1999 and 2000



Source: 2000 National Household Survey on Drug Abuse (NHSDA)

Marijuana Abusers Seeking Treatment

- In 1997, 25% of admissions to state-funded drug abuse clinics for marijuana abuse, comparable to cocaine and heroin
- This rate is almost a 2-fold increased in the demand for marijuana treatment since 1992 (SAMHSA)
- As many as 9% of those who have used marijuana at least once will qualify for the dependence diagnosis at some time in their life

Marijuana Abusers Seeking Treatment

- Relative risk of dependence may be as high as 20-30% for those who have used marijuana more than a few times

- Some evidence that users are more likely to seek treatment when interventions are tailored specifically to marijuana use problems

Cannabis Youth Treatment Experiment (SAMHSA)

- Five treatment protocols of differing intensity of treatment, higher intensity treatments incorporated family therapy or integrated family therapy and substance abuse treatment throughout all sessions

- Among youths treated in these model programs, the percentage of no use in the past month increased from 4% at baseline to 34% at end of treatment and no depressive symptoms increased from 19% at baseline to 61% at end of treatment

- Days of use were reduced by 36% from baseline to end of treatment

Cannabis Youth Treatment Experiment (Cont'd)

- Early in treatment, low intensity treatment works best for low severity clients but all treatments work equally well at 6 months
- High severity clients do best with greater intensity of treatment
- The costs of all five therapies appear to be affordable with weekly costs ranging from $105 to $244 per week
- CSAT is producing a separate manual for each of the five protocols

A Randomized Controlled Trial of Brief Cognitive-Behavioral Interventions for Cannabis Use Disorder

Journal of Substance Abuse Treatment

J Copeland, W Swift, R Roffman, R Stephens (2001)

- 229 participants randomized to: CBT-6 sessions, Single Session CBT, or a Delayed-Treatment Control (DTC) compared
- Followed a median of 237 days
- Treatment groups did better in terms of abstinence, fewer cannabis-related problems than DTC group

A Randomized Controlled Trial of Brief Cognitive-Behavioral Interventions for Cannabis Use Disorder

Journal of Substance Abuse Treatment

J Copeland, W Swift, R Roffman, R Stephens (2001)

- CBT groups with 6 sessions consumed significantly less cannabis use than DTC group
- Treatment same, length different
- Urinalysis for THC at 24 weeks, post treatment completion but no other time points. Used to confirm accuracy of self-reporting

Treating Adult Marijuana Dependence: A Test of the Relapse Prevention Model

Journal of Consulting and Clinical Psychology (1994)
R Stephens, R. Roffman, and L. Curtin

- 212 randomized to ten 2-hour relapse prevention or ten social support discussion groups with booster sessions at 3 and 6 months
- No significant difference in abstinence 12 months after therapy
- Significant reduction in number of days of cannabis use and problems compared to pretreatment in both treatment groups
- 17% of sample totally abstinent one year after intervention
- No urine toxicologies done

Comparison of Extended Versus Brief Treatment for Marijuana Use

Journal of Consulting and Clinical Psychology (2000)

R Stephens, R. Roffman, and L. Curtin

- 291 participants randomized: 1)14 group sessions of relapse prevention over 18 weeks with 4 optional group sessions with partner, 2) 2 sessions of MI one month apart, second of which partner can be included, or 3) DTC
- 4 month follow-up: Treatment groups had greater abstinence rates, fewer days of cannabis use and problems, less dependence symptoms

Comparison of Extended Versus Brief Treatment for Marijuana Use (Cont'd)

Journal of Consulting and Clinical Psychology (2000)

R Stephens, R. Roffman, and L. Curtin

- Treatment groups did not differ on any outcome measures at repeated follow-ups to 16 months, abstinence rates at 29%
- Possibly MI is a more cost-effective treatment?
- No urine toxicologies done

Adding Voucher-Based Incentive to Coping Skills and Motivational Enhancement Improves Treatment Outcomes During Treatment for Marijuana Dependence (I)

Journal of Consulting and Clinical Psychology (2000)

A.J. Budney, S.T. Higgins, K.J. Radonovich, P.L. Novy

- 60 participants randomly assigned to 1) 4 sessions of MI, 2) MI+ 14 weekly Behavioral Coping Skills (MBT) or 3) MI + BT + voucher-based incentives (MBVT)
- End of treatment: No significant differences between MI and MBT in abstinence rates during treatment but significantly higher abstinence rates for MBVT group compared to other 2 groups

Adding Voucher-Based Incentive to Coping Skills and Motivational Enhancement Improves Treatment Outcomes During Treatment for Marijuana Dependence (II)

Journal of Consulting and Clinical Psychology (2000)

A.J. Budney, S.T. Higgins, K.J. Radonovich, P.L. Novy

- Percentage of group achieving 7 weeks of continuous abstinence: MI- 5%, MBT-5%, MBVT-40%
- THC urines collected
- No follow-up post-study

Future Directions for Treatment (Pharmacological)

- Agonists
- Antagonists
- Partial agonists
- Agents which will alleviate withdrawal
- Co-morbid conditions

CB Agonists and Antagonists

- CB1 selective antagonist SR141716A (blocks THC-induced analgesia yet no lowering of pain threshold)
- CB2 selective antagonist SR144528
- Non selective agonists (HU210, CP55940, WIN552122)
- CB1 selective agonists (methanandamide, ACPA, ACEA)
- CB2 selective agonists (JWH015, L759633, L759656, HU308)

Cannabinoid Antagonism in Humans

- SR 141716 has recently been studied in Humans (Huestis et. al, 2001)
- SR 141716 blocked (at least partially) the acute psychological and physiological effects of smoked marijuana without altering THC pharmacokinetics
- Findings confirmed the central role of CB1 in the mediation of marijuana's effects

Pharmacotherapy for Marijuana Dependence: A Double-Blind, Placebo-Controlled Pilot Study of Divalproex Sodium

American Journal on Addictions (in press)

F.R. Levin, D. McDowell, S.M. Evans, E. Akerele, S. Donovan, E. Nunes

- 25 patients with marijuana dependence randomized to a 12-week, cross-over, placebo-controlled trial
- Doses of up to 1500 mg/day of divalproex
- Self-reported use decreased in both placebo and medication groups

Pharmacotherapy for Marijuana Dependence: A Double-Blind, Placebo-Controlled Pilot Study of Divalproex Sodium

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F.R. Levin, D. McDowell, S.M. Evans, E. Akerele, S. Donovan, E. Nunes

- Average weeks of abstinence was low (2 weeks for both groups) and percentage of positive urines was high (divalproex sodium:78%; placebo: 87%)
- Use of different urine cut-offs (30 ng/ml versus 100 ng/ml) did not affect findings
- Because compliance may have been an issue, difficult to say if divalproex sodium worthy of further investigation

Rates of Psychiatric Comorbidity Among United States Residents with Lifetime Cannabis Dependence

V. Agosti, F. Levin, E. Nunes (Submitted)

- Data downloaded from the National Comorbidity Survey Homepage
- DSM-III-R diagnoses made using a modified version of the Composite International Diagnostic Interview given by trained interviewers to > 8000 individuals
- 90% of individuals with cannabis dependence had a lifetime mental disorder (strongest associations: Alcohol dependence, conduct disorder, anxiety and mood disorders)

Rates of Psychiatric Comorbidity Among United States Residents with Lifetime Cannabis Dependence

V. Agosti, F. Levin, E. Nunes (Submitted)

- Perhaps a new direction is to study comorbidity and treatment of both marijuana dependence and coexisting psychiatric disorders
- Respondents with a lifetime diagnosis of cannabis dependence, who used cannabis during the past month were 2x as likely to have a current mood or anxiety disorder
- No studies to date have targeted treatments to comorbid samples

Fluoxetine Versus Placebo for the Marijuana Use of Depressed Alcoholics

Addictive Behaviors (1999)

Cornelius, Salloum, Haskett, Ehler, Jarrett, Thase, Perel

- 12-week randomized, placebo-controlled study initially designed to assess efficacy of fluoxetine for depressed alcoholics (n=51)
- 21 patients had concurrent marijuana use
- Placebo group consumption of marijuana cigarettes was 20 times higher than those on fluoxetine during the study

Fluoxetine Versus Placebo for the Marijuana Use of Depressed Alcoholics

Addictive Behaviors (1999)

Cornelius, Salloum, Haskett, Ehler, Jarrett, Thase, Perel

- Placebo group days of marijuana use was five times higher than those on fluoxetine during the study
- Fluoxetine group had significantly greater improvement in depressive symptoms using the Hamilton Rating Scale
- Interesting finding- needs replication and confirmation with urine toxicological data

Conclusions

- Substantial number of individuals seek treatment for marijuana dependence
- Treatment better than no treatment
- More CBT may be better than less CBT
- However, brief MI may work as well as extended CBT
- Addition of voucher-incentives may improve treatment outcome but unclear if added benefit sustained post-treatment

Conclusions (II)

- Limitations include: 3/4 Studies comparing psychotherapeutic approaches did not use urine toxicological data, samples predominantly Caucasian males, psychiatric comorbidity not addressed
- Very few controlled studies (n=1) using pharmacological interventions
- No adult studies have specifically targeted marijuana abusers with psychiatric comorbidity
- More empirical work to be done
- Study what has worked in the community