New Psychoactive Substance Wave & Integrated Treatment Program in Taiwan

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Overview

- Background Information
- Integrated Treatment Program
- Conclusion and Suggestion

反毒四行動
健康一大步
毒
NO!
不
LOVE
before
after
基督教晨曦會
搖
大麻
FM2
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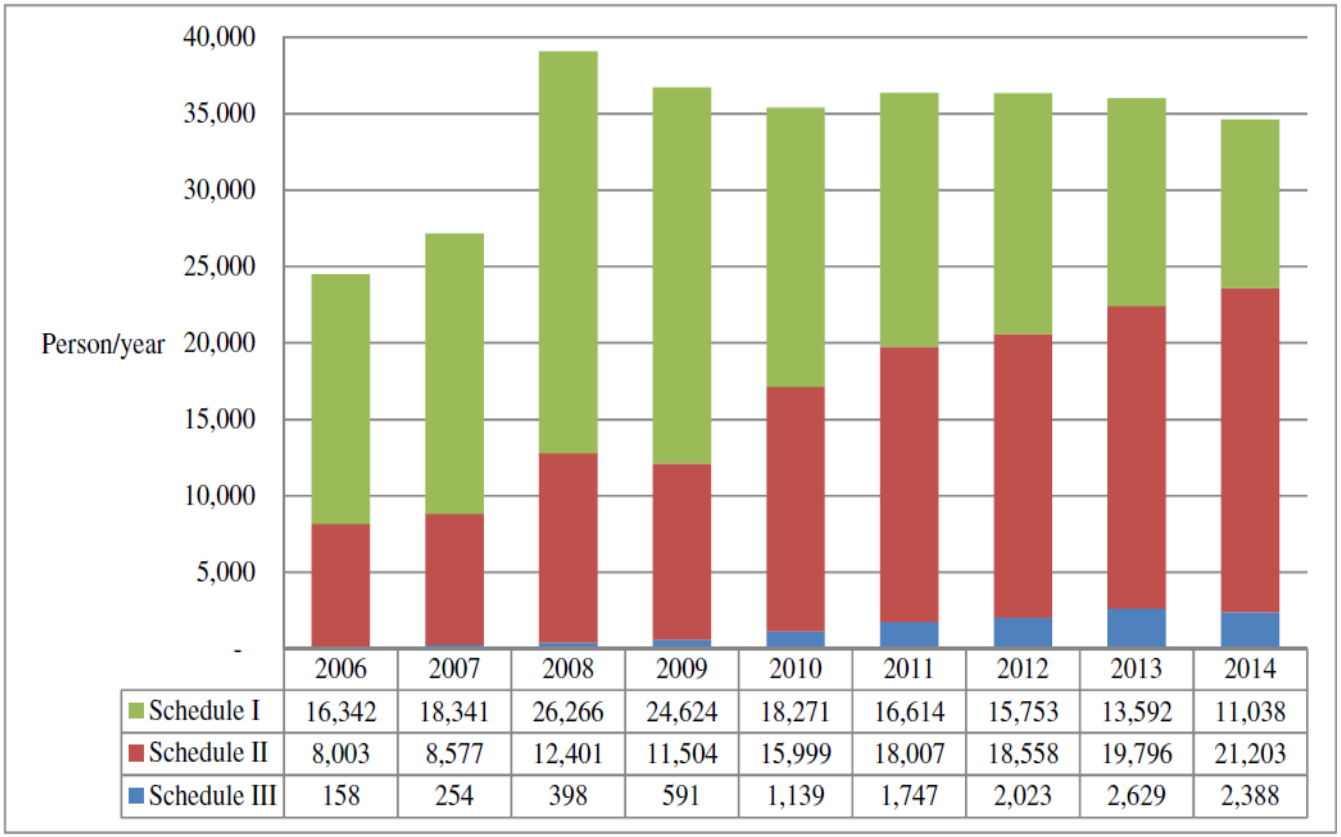
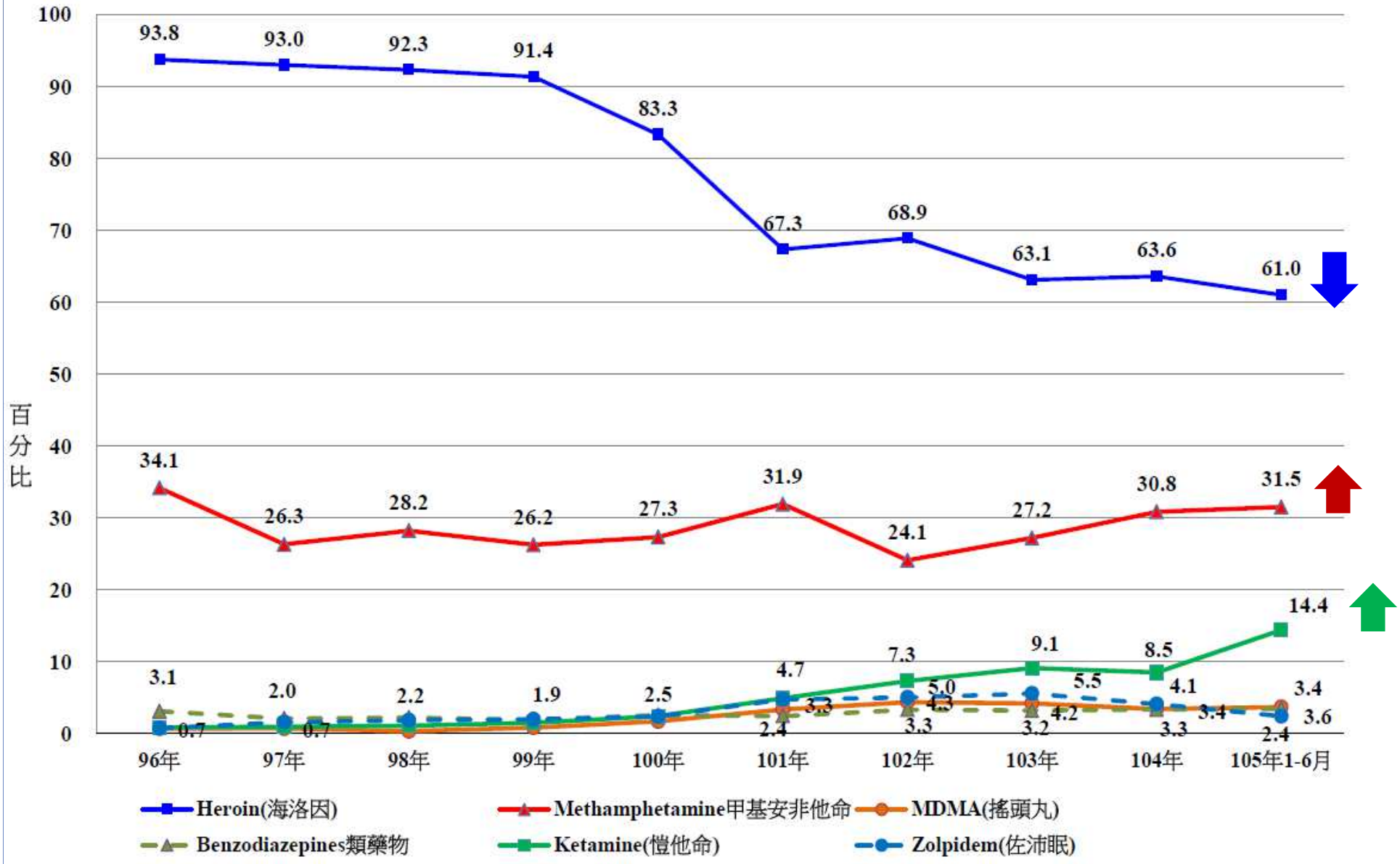
K



	2006	2007	2008	2009	2010	2011	2012	2013	2014
Schedule I	16,342	18,341	26,266	24,624	18,271	16,614	15,753	13,592	11,038
Schedule II	8,003	8,577	12,401	11,504	15,999	18,007	18,558	19,796	21,203
Schedule III	158	254	398	591	1,139	1,747	2,023	2,629	2,388

Fig. 5 Number and proportion of drug-offense related arrestees according to drug types in Taiwan from 2006 to 2014. Heroin was the major drug in Schedule I, methamphetamine in Schedule II, and ketamine in Schedule III



台灣地區醫療院所歷年通報常見藥物濫用種類統計圖

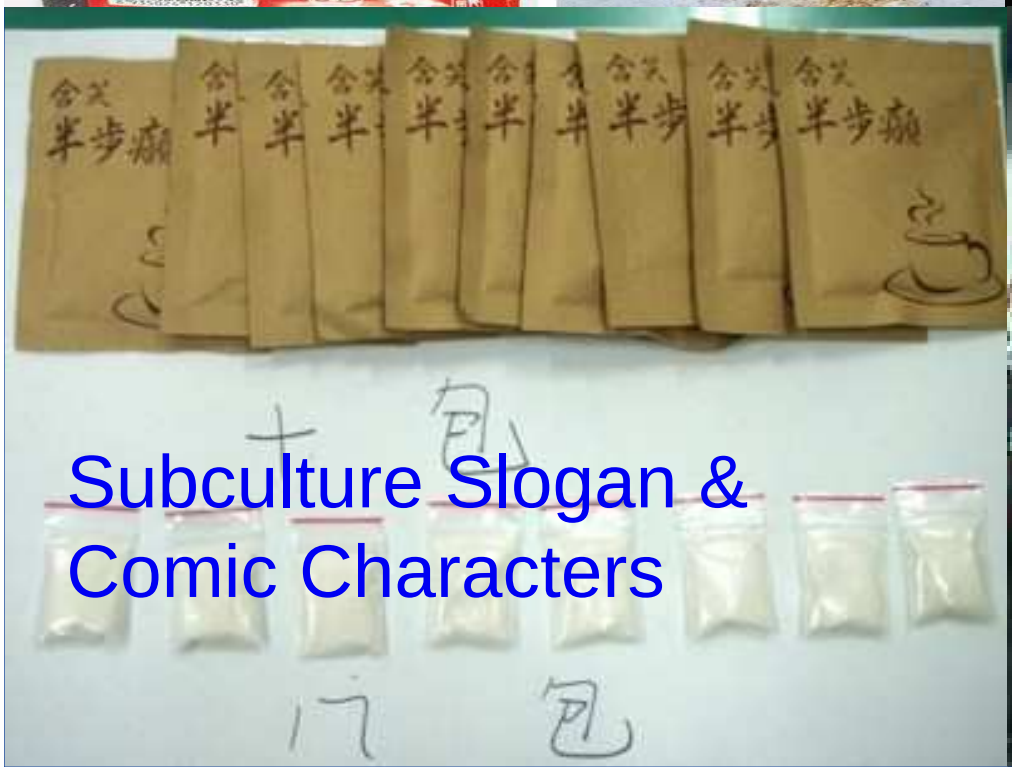
Smoking Ketamine makes a great impact on epidemics

你知道孩子在學校吸毒嗎？

未成年者首次吸毒年齡平均12.5歲，吸毒地點2成3在學校，非法藥物近4成來自同儕...

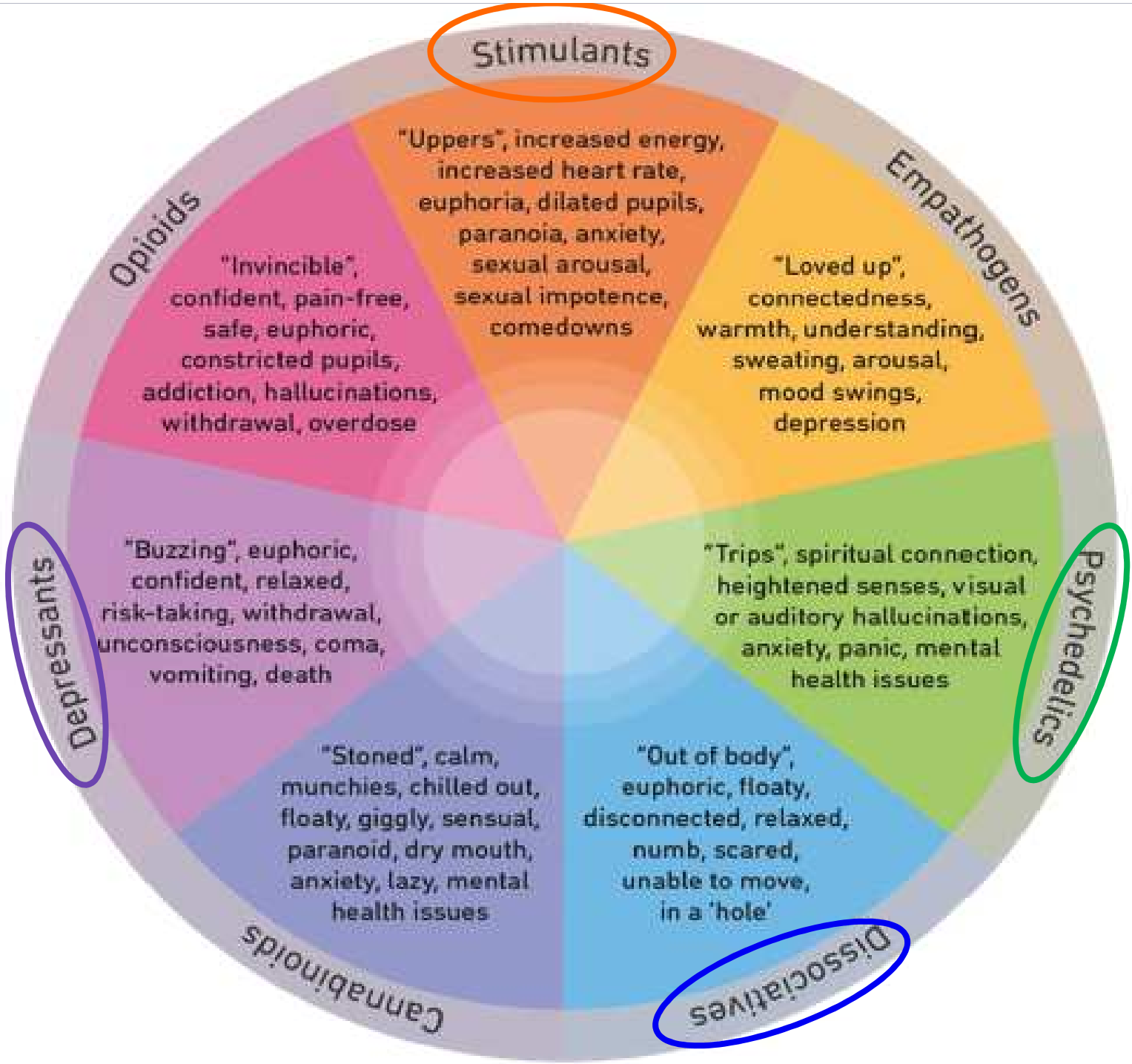
資料來源：國家衛生研究院、衛福部國健署、衛福部食藥署，2009 年「國民健康訪問暨藥物濫用調查報告」

製表：風傳媒



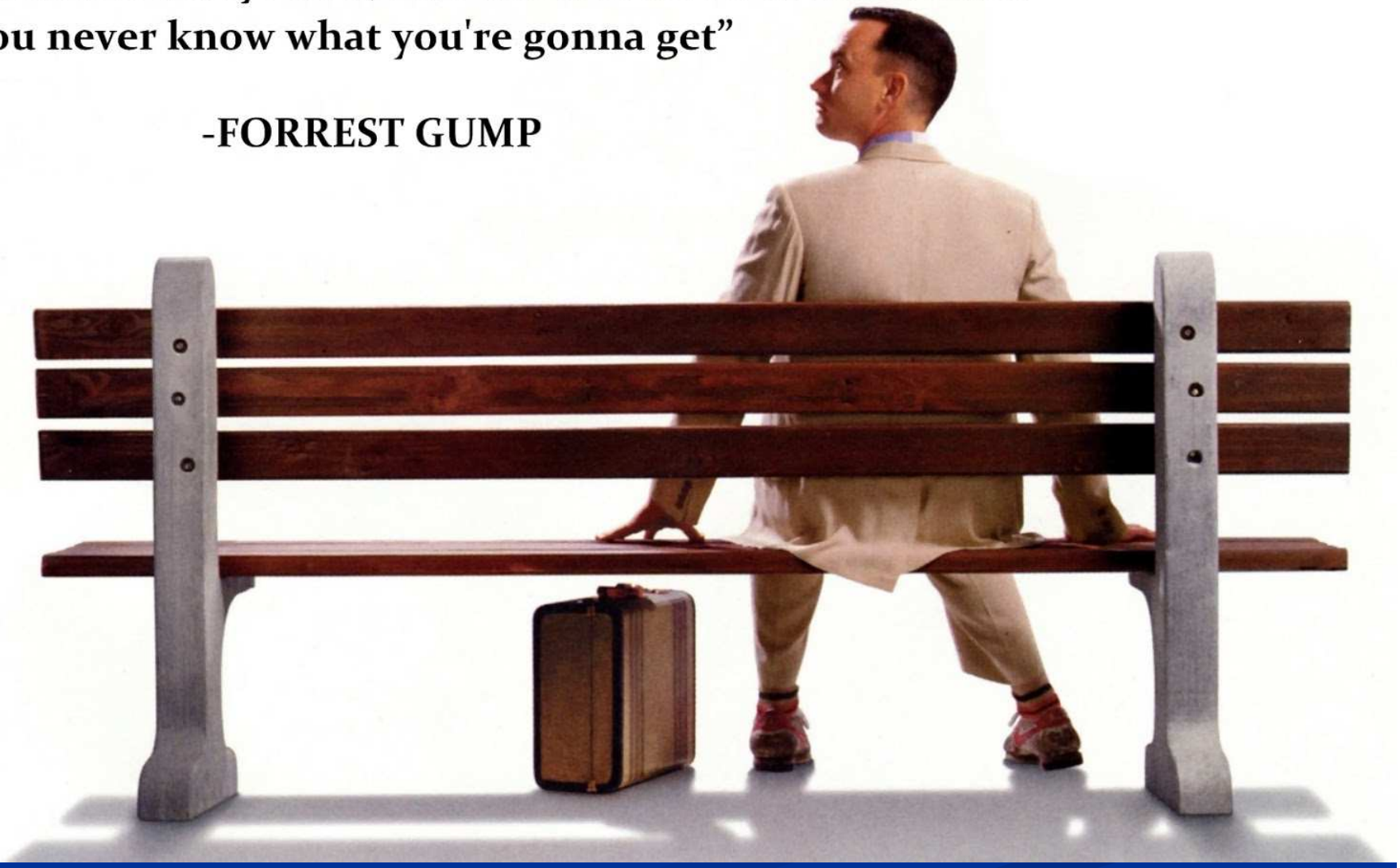
Subculture Slogan &
Comic Characters

你要周杰倫？還是蔡依林？


Stimulants
"Uppers", increased energy, increased heart rate, euphoria, dilated pupils, paranoia, anxiety, sexual arousal, sexual impotence, comedowns
Empathogens
"Loved up", connectedness, warmth, understanding, sweating, arousal, mood swings, depression
Psychedelics
"Trips", spiritual connection, heightened senses, visual or auditory hallucinations, anxiety, panic, mental health issues
Dissociatives
"Out of body", euphoric, floaty, disconnected, relaxed, numb, scared, unable to move, in a 'hole'
Cannabinoids
"Stoned", calm, munchies, chilled out, floaty, giggly, sensual, paranoid, dry mouth, anxiety, lazy, mental health issues
Depressants
"Buzzing", euphoric, confident, relaxed, risk-taking, withdrawal, unconsciousness, coma, vomiting, death
Opioids
"Invincible", confident, pain-free, safe, euphoric, constricted pupils, addiction, hallucinations, withdrawal, overdose

“My momma always said, Life was like a box of chocolates.
You never know what you're gonna get”

-FORREST GUMP

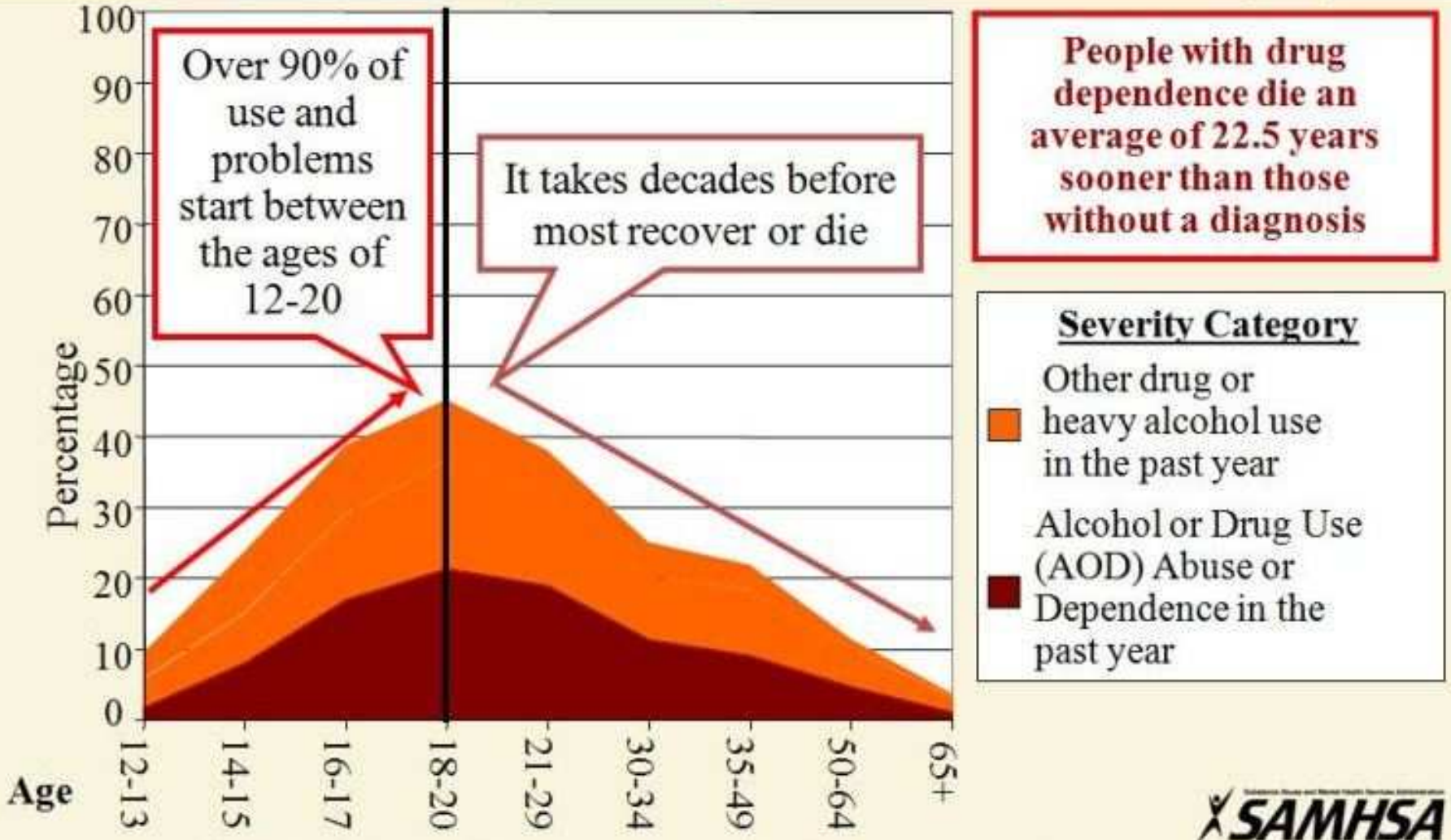


It feels like a roller coaster ride!

排名	小於 19 歲		20-29 歲		30-39 歲		40-49 歲		大於 50 歲	
	藥物種類	百分比 (%)	藥物種類	百分比 (%)	藥物種類	百分比 (%)	藥物種類	百分比 (%)	藥物種類	百分比 (%)
第一位	愷他命	47.2	(甲基)安非他命	38.7	海洛因	49.3	海洛因	66.8	海洛因	69.1
第二位	(甲基)安非他命	34.9	愷他命	36.8	(甲基)安非他命	31.7	(甲基)安非他命	21.7	(甲基)安非他命	15.3
第三位	MDMA	13.5	MDMA	11.7	愷他命	9.1	佐沛眠	3.5	佐沛眠	8.5
第四位	大麻	1.5	海洛因	6.8	MDMA	3.7	氟硝西泮(FM2)	2.4	氟硝西泮(FM2)	4.5
第五位	不明藥物	0.8	大麻	2	佐沛眠	1.5	愷他命	1.2	嗎啡	0.5

Raising number of Ketamine & Meth use in recent three years, especially among youth population

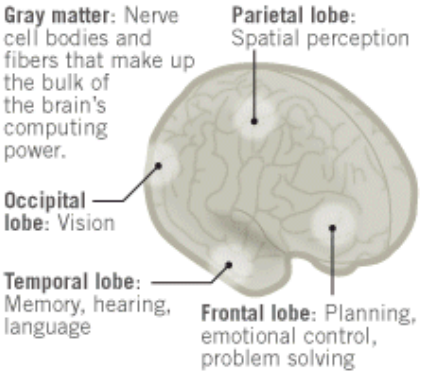
Alcohol and Other Drug Abuse, Dependence and Problem Use Peaks at Age 20



Source: 2002 NSDUH and Dennis & Scott, 2007, Neumark et al., 2000

Growing a Grown-up Brain

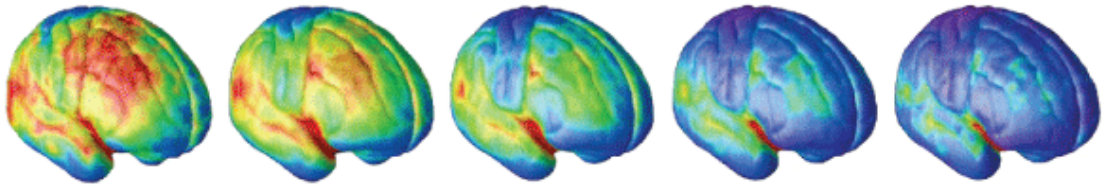
Scientists have long thought that the human brain was formed in early childhood. But by scanning children's brains with an MRI year after year, they discovered that the brain undergoes radical changes in adolescence. Excess gray matter is pruned out, making brain connections more specialized and efficient. The parts of the brain that control physical movement, vision, and the senses mature first, while the regions in the front that control higher thinking don't finish the pruning process until the early 20s.



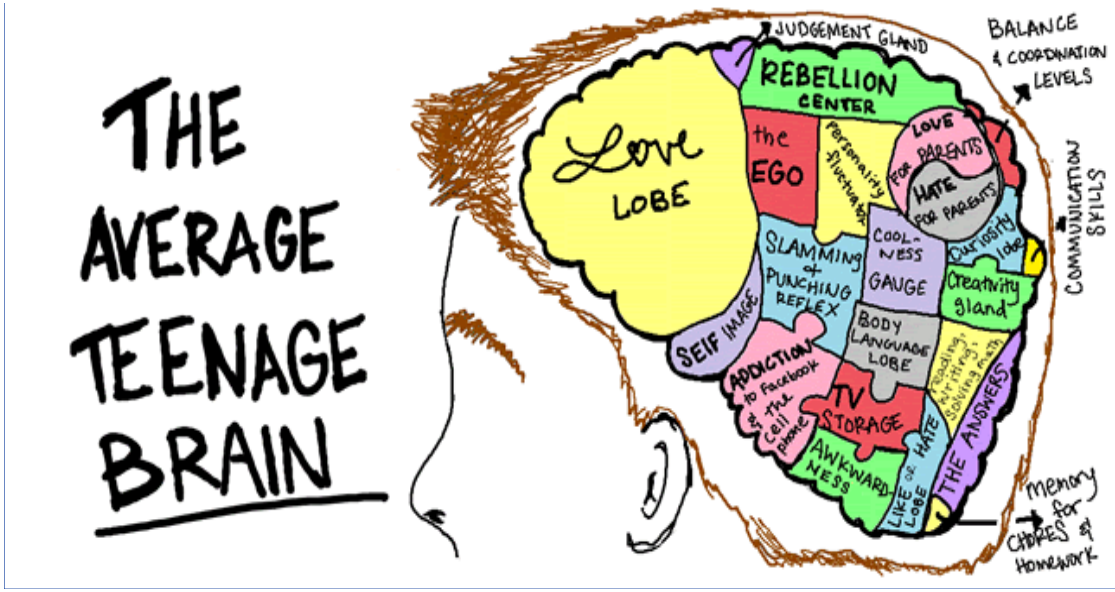
Gray matter density

Gray matter becomes less dense as the brain matures.

More dense — Less dense



Source: "Dynamic mapping of human cortical development during childhood through early adulthood," Nitin Gogtay et al., *Proceedings of the National Academy of Sciences*, May 25, 2004; California Institute of Technology



Huge Impact on Adolescent Substance use.

Chen et al. Substance Abuse Treatment, Prevention, and Policy 2014, 9:39
http://www.substanceabusepolicy.com/content/9/1/39

SUBSTANCE ABUSE TREATMENT, PREVENTION, AND POLICY

RESEARCH Open Access

Gender differences in subjective discontinuation symptoms associated with ketamine use

Wen-Yin Chen[1], Ming-Chyi Huang[1,2] and Shih-Ku Lin[1,2*]

Abstract

Background: Recent substance abuse research indicates gender differences in the substance-related epidemiology, biological responses, progression to dependence, medical consequences and treatments. Studies exploring human sex-different responses to ketamine are rare and there has been no systemic survey of gender differences in ketamine use. Determining whether females are more susceptible than males to ketamine withdrawal symptoms and adverse effects is important, because it associated with treatment retention and outcome in drug users.

Methods: The Taiwanese juridical system has implemented a new regulation on ketamine in the year 2009. Ketamine users who are caught by the police, are mandated to attend an educational program. We recruited ketamine offenders from February 2010 to May 2012 at the Kunming branch of the Taipei City Hospital, where the educational classes are held. A designed questionnaire was performed to gather information about demographic characteristics, discontinuation symptoms, concomitant use of other substances, and subjective experience of memory impairment or urinary discomforts, and to compare the gender differences.

Results: A total of 1,614 ketamine users were surveyed and most of them were males (83.8%), with an average age of 26.3 ± 5.4 years. Female ketamine users presented significantly more discontinuation symptoms such as anxiety, dysphoria, and tremors compared with male users. 72.4% of total ketamine users smoked cigarettes concomitantly. Male ketamine users had a higher rate of concomitant betel nut use, while female ketamine users had a higher rate of concomitant hypnotic and alcohol use. 76% of total ketamine users reported cognitive impairment and 51.6% mentioned urinary symptoms. Furthermore, female ketamine users self-reported significantly greater levels of severity in cognitive impairment and urinary discomforts compared with male users. Less than 10% of total ketamine users in our study reported the desire to transfer for medical intervention or treatment, despite the high rates of discontinuation symptoms and negative physical side effects.

Conclusions: Gender differences were noted in the subjective experience of discontinuation symptoms, concomitant substance use, and severity of impairment related to ketamine use. However, the probable cause of the gender differences found in this study requires further investigation. We hoped our study will stimulate further research in this field.

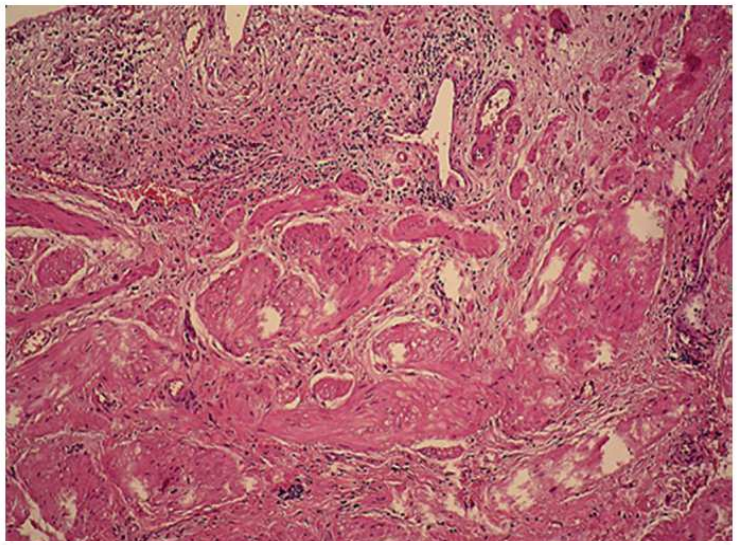
Keywords: Ketamine, Epidemiology, Discontinuance symptoms, Gender difference

Objective: Methamphetamine (MAMP) and ketamine are neurotoxic drugs whose chronic use has been linked with a cognitive decline in some users. This paper aims to assess the possible effect of concomitant ketamine use on the neurocognitive performance of MAMP users. *Methods*: This study divides 42 MAMP users into MAMP users who use ketamine (MAMP+K, $n = 16$) and MAMP users who do not use ketamine (MAMP–K, $n = 26$). The performance of these two groups was compared using the Brief Assessment of Cognition in Schizophrenia (BACS), Conners' Continuous Performance Tests (CPT), the Wisconsin Card Sorting Test (WCST), the Iowa Gambling Task (IGT), and the Barratt Impulsiveness Scale (BIS). *Results*: In comparison to the MAMP-K group, the MAMP+K group showed worse performances in verbal fluency, executive function and composite score in BACS; worse performances in total errors, perseverative errors, non-perseverative errors and conceptual level response in WCST; and greater levels of total scores and novelty-seeking in BIS. Neither the attention function evaluated with CPT nor the decision-making behavior evaluated with IGT was associated with previous ketamine use. *Conclusion*: This study detected worse executive function and higher impulsivity level among MAMP users with additional ketamine use versus their counterparts without ketamine use. Further studies with a longitudinal design and a large sample size are necessary to clarify the connection between cognitive deficits and concomitant use of MAMP and ketamine.

Methamphetamine+Ketamine group showed worse performance in verbal expression, executive function and BACS than Methamphetamine alone.

Chen YC et al. Neurocognitive Profiles of Methamphetamine Users: Comparison of Those With or Without Concomitant Ketamine Use. Subtance use & misuse.(2015) 50; 1778-1785

Fig. 1. Intravenous pyelography in a man with ketamine cystitis reveals bilateral hydronephroureters and contracted urinary bladder.

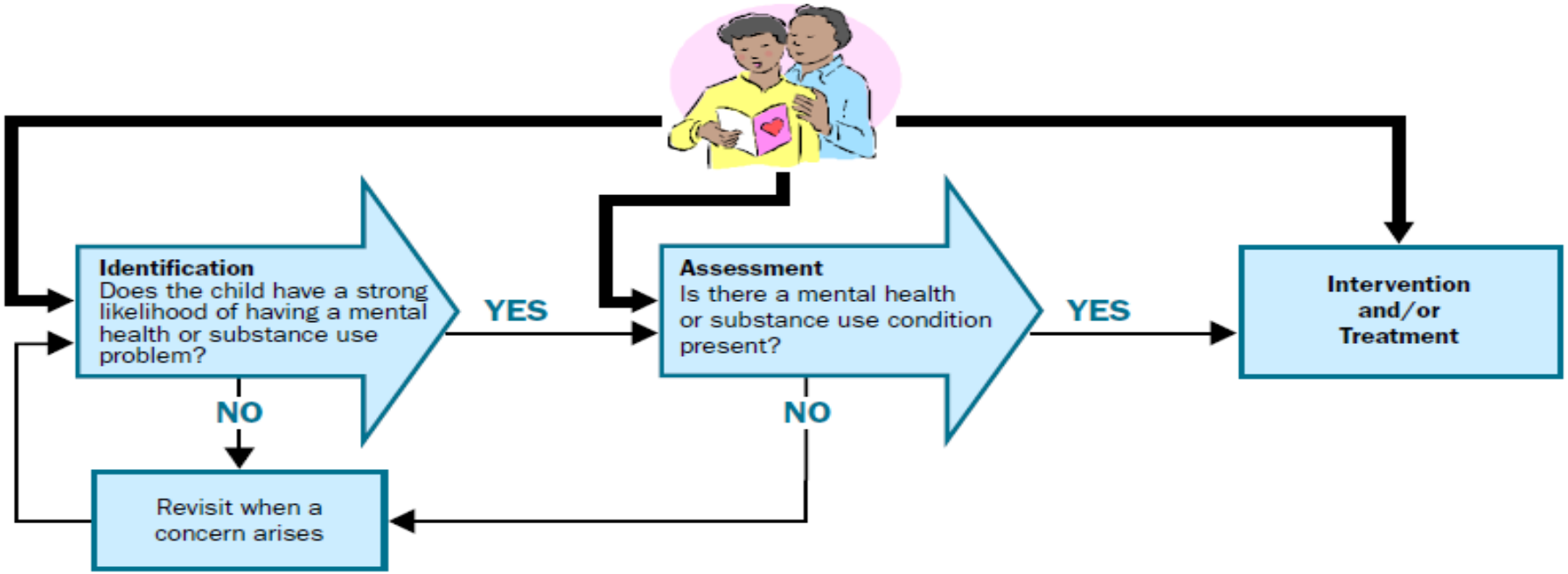


More frequent use (>2hits/week) for at least one year has greater chance of having LUTS.


Poor Academic Performance
Job Instability
Teen Pregnancy
Stealing, Vandalism, and Violence
Overdoses
Isolation and/or Depression
Exclusion of other activities
Adolescent Substance Abuse

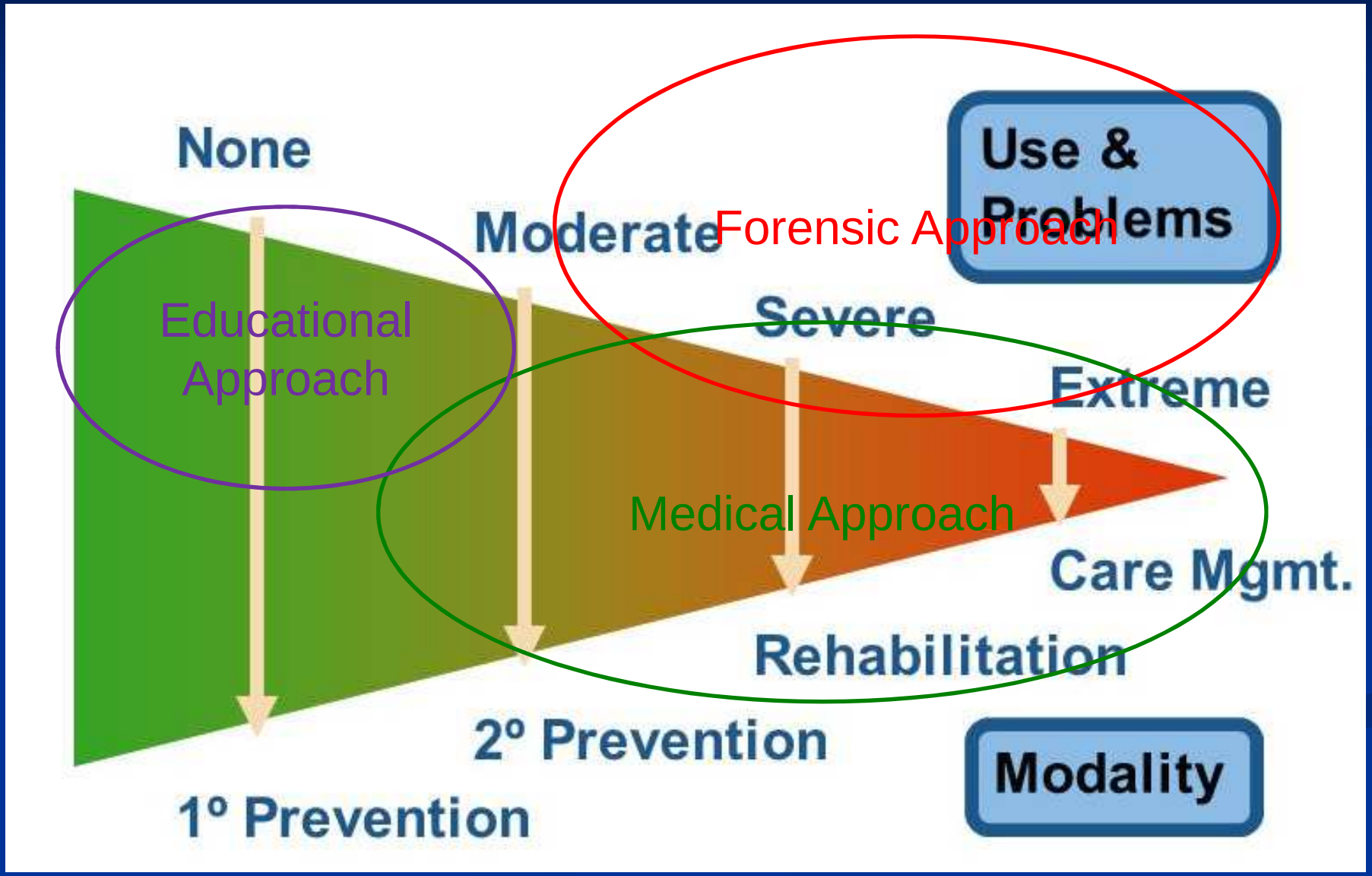

SHOW YOU CARE
ASK • REACH • ENGAGE • COMMUNITY
COMMUNICATE • BE PART OF A CARING

Figure 1
Improving Identification and Access to Care for Youths at Risk of Mental Health and Substance Use Problems



Identification	Assessment	Intervention and/or Treatment
The method of identifying possible problems must be reliable and valid.	A comprehensive assessment determines the nature of the problem and provides sufficient information for the assessor to recommend an intervention or treatment.	An appropriate intervention or treatment is recommended and selected for those children with the most serious conditions. This approach may involve a formal diagnosis and clinical treatment plan.
Caregivers and youths should be involved in decision making at every step. Parental consent and youth assent may be necessary at every step.		

Different Approaches in Public Health Model of Substance Use in Taiwan



紫錐花運動

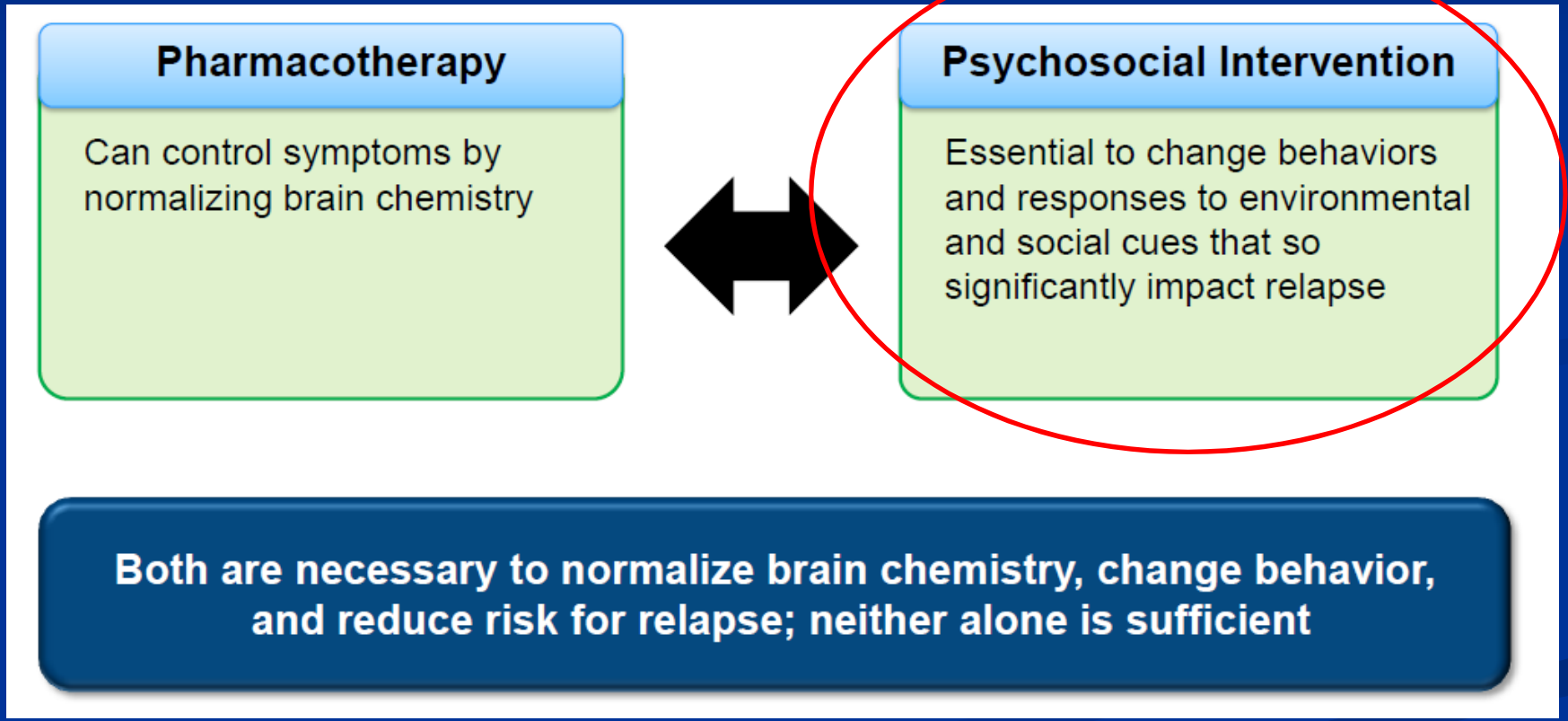
Echinacea Campaign

用堅毅的勇氣淨化對毒品的依賴，
提倡健康五愛的心，綻放生命的光彩。

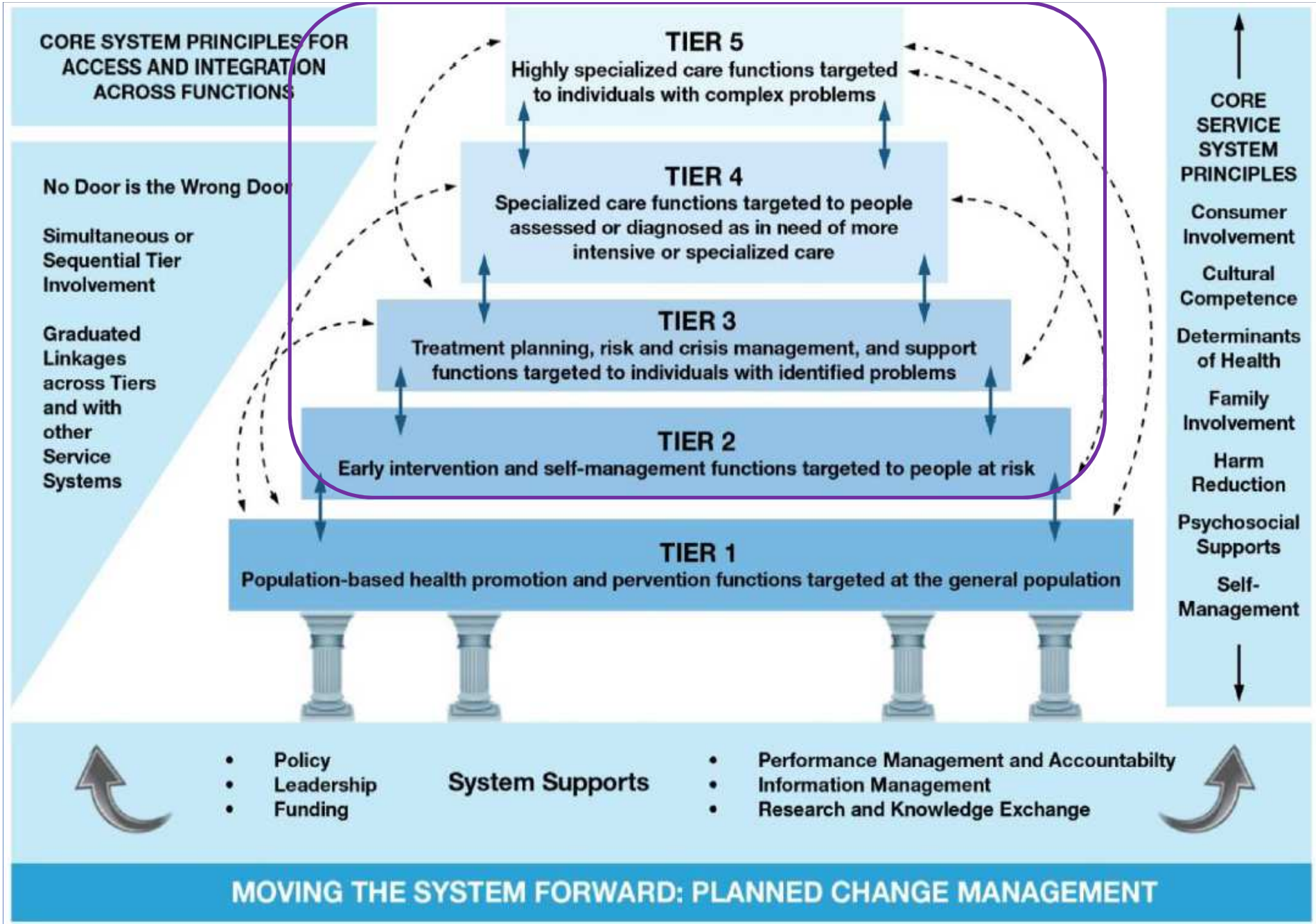
4-8 hours lectures and NT 10k-50k fine

The Components of Treatment

No adequate Pharmacotherapy
for recreational drug use



1.McLellan et al. *Addiction. 1998;93(10):1489-1499;*
2.McLellan et al. JAMA. 1993;269(15):1953-1959.



From Rush (2010) and Rush & Nadeau (2011), building upon the Tiered Model described in the National Treatment Strategy of the National Treatment Strategy Working Group (2008).

Challenges for Implantation

- Funding
- Time constraints
- Lack of familiarity with evidence-based practice
- Lack of preparation through education and training for collaborative practice
- Attitudes, stigma and discrimination working with people with addiction problems
- Lack of incentives for change or presence of disincentives
- Lack of platform for communication & Collaboration

Integrated Treatment Program

Early Identification & Basic Assessment

Delinquency, Family Support, School Performance
Kind/ Pattern/ Amount / Consequences of Drug Use

Comprehensive assessment & Intervention

Low risk: School counseling or Brief Intervention
Moderate to high risk: refer to specialized Tx

Pharmacotherapy

Individual Psychotherapy

Group Therapy

Family Therapy

Case Management

Recovery Process & Health Promotion

Case discussion & hand-off

整合資源、攜手合作

嘉療心理治療 助戒毒

記者林偉民／仁德報導

非鴉片類的新興毒品不像海洛因有替代療法可作爲治療選擇，嘉南療養院針對慢性命等新興藥物成癮者開辦「KK認知團體」，利用個別或團體心理治療來處理「心癮」問題，效果不錯，雖有補助方案可供利用，鼓勵患者不要畏懼治療。

嘉南療養院成癮整司法精神科主任李俊宏表示，受社會風氣開放影響，毒品成癮問題逐漸從過去的海洛因成癮，轉至新興毒品如慢性命、搖頭丸、神仙水、喵喵等成癮，由於此類新興毒品並不像海洛因有替代療法可作爲治療選擇，醫師僅能在戒癮過程中緩解停藥的不適，並協助處理憂鬱、焦慮等症狀。

因此在個別或團體心理治療時，藉由回溯使用的歷程、了解自我，逐步喚醒上癮者戒除的動機，並教導戒除的策略，使其能落實於生活上，成爲重要的戒癮方式。

李俊宏表示，戒癮治療成功與否，患者的動機相當重要，不能操之過急，需要讓患者透過信任的醫療關係與親人的陪伴，逐漸了解使用與不使用的利弊，從而改變生活，最怕在戒癮過程中被家庭孤立。

嘉療透過衛生福利部開辦非鴉片類毒品治療補助計畫，共有55個名額，並提供到校諮詢服務，過程除掛號等行政費用外，均由計畫經費支應，可減輕患者就醫負擔，鼓勵患者勇敢踏出戒癮第一步。

加強社會宣導

網絡單位合作

反毒志工訓練

協辦拒毒戶外課程

KK認知輔導團體

過來人經驗分享

Table 1: Descriptive statistics of Subjects: Demographic Data & Drug Use History:

Category	Brief Intervention	Standard Psychoeducation
N	77	83
Age*	20.2±5.2 (13-38)	23.4±7.3 (18-40)
Education	10.3±2.7 (6-16)	10.6±2.1 (6-17)
Gender	Male: 65 (84%)	Male: 68 (82%)
	Female:12 (16%)	Female:15 (18%)
Marital Status	Single: 73 (95%)	Single: 76 (92%)
	Married: 4 (5%)	Married: 7 (8%)
First Use (years old)	13.8±2.4 (13-33)	14.2±2.1 (13-39)
Main Reason of Use *	Just Try: 12 (16%)	Just Try: 16 (19%)
	Recreational Use: 18 (23%)	Recreational Use: 23 (28%)
	Instrumental Use: 16 (21%)	Instrumental Use: 8 (10%)
	Chronic Use: 31 (40%)	Chronic Use: 36 (43%)
Route	Pure Smoke: 47 (52%)	Pure Smoke: 43 (52%)
	Pure Sniff: 18 (23%)	Pure Sniff: 20 (24%)
	Both: 12 (16%)	Both: 20 (24%)
Dose of Use	Frequent Use: 40 (52%)	Frequent Use: 44 (53%)
	Infrequent Use: 37 (48%)	Infrequent Use: 39 (47%)
Whether Poly-Substance Use	Only Ketamine: 55 (71%)	Only Ketamine: 56 (67%)
(Except Tobacco or Alcohol)	Poly-Substance Use: 22 (29%)	Poly-Substance Use: 27 (33%)

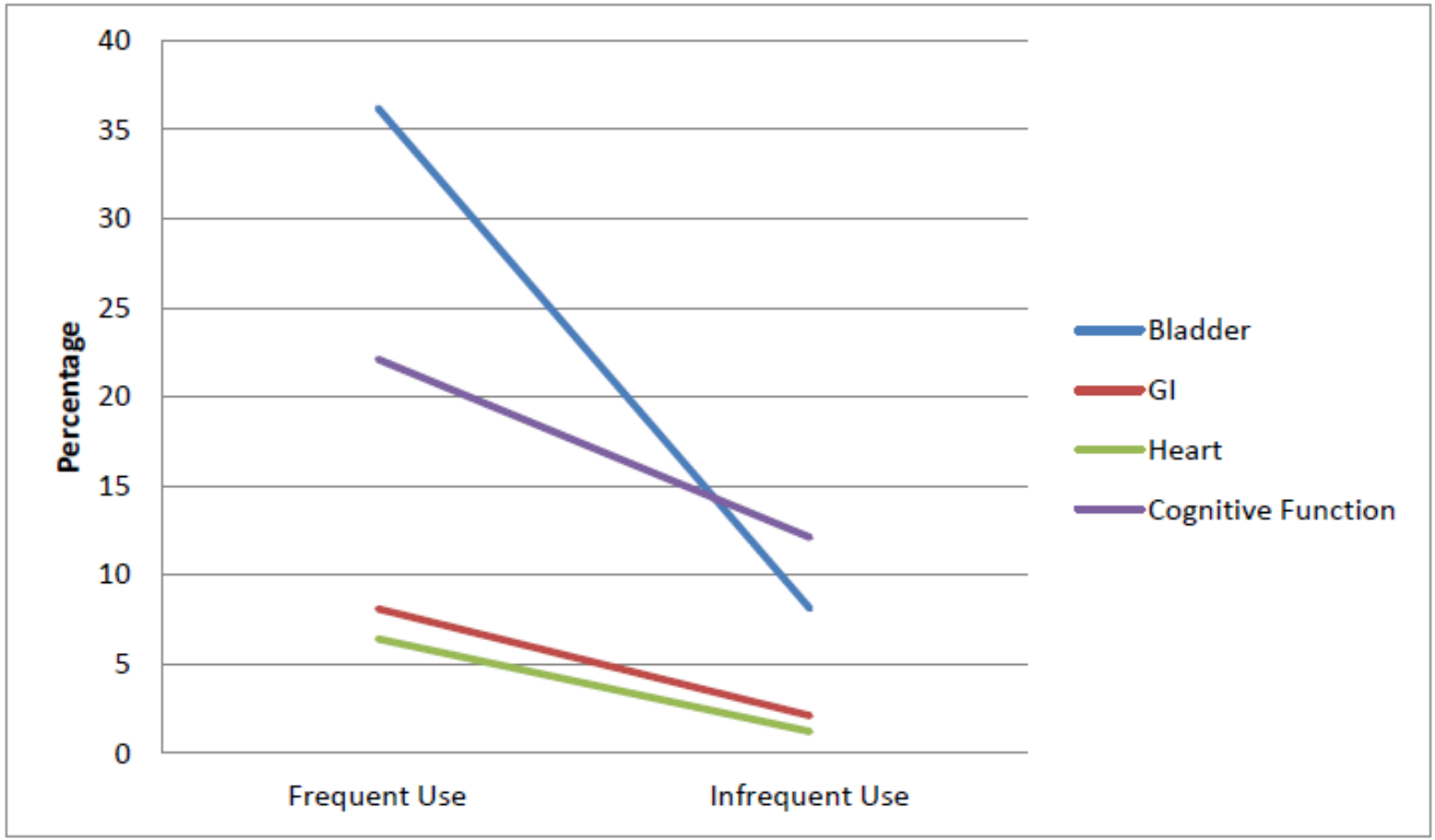
Table 2. Changes of Outcome Variables After Intervention (*: P<0.05, **P<0.01)

Category	Before Intervention	After 3-month Intervention (Completion Rate: 71%)
Self-Efficacy (Total)	82.70±10.21	92.10±8.10**
Craving (VAS)	38.0±7.2	37.2±1.9
Quality of Life (Total)	89.10±6.11	92.11±6.13
General Well-Being	6.76±1.21	7.82±1.89*
Physical Health	22.76±5.11	26.81±3.84 **
Psychological Health	19.22±4.67	19.24±8.22
Environment	26.10±4.40	27.14±7.21
Social	14.32±3.12	13.71±2.17

Table 3. Changes of Outcome Variables between Different Management (*: P<0.05)

	Self-Efficacy (Total)	**Craving (VAS)**	**Quality of Life (Total)**
Psychoeducation (N=83)			
before	84.4±7.2	17.9±6.2	89.1±2.3
after	86.9±6.3	17.6±4.4	90.1±3.5
Brief Intervention (N=77)			
before	82.7±10.2	38.0±7.2	89.1±6.1
after	92.1±8.1*	37.2±1.9	92.1±6.1, Physical Health/General Well-Being*
Group therapy (N=22)			
before	79.0±2.2	36.0±3.4	88.7±1.5
after	75.0±1.3*	35.0±2.1	91.9±2.6, Psychological Health/General Well-Being*

Figure 1. Reporting Health Problems of Ketamine Use



Lee CH, Tang HP, Chiu HJ, Liu YH: The Effectiveness of Brief Intervention for Patients with Ketamine Use Disorder. Chinese Journal of Drug Dependence 2016; 25(1) :109-114

Discussion

- Treatment is Effective; Collaboration is needed: Only take 3 months can decrease self-report drug use, increase self-efficacy & QoL significantly.
- Self-report abstinence rate after treatment: 86.4%
- Poly-substance, lack of family support, delinquency may contribute the drop out.
- However, how to keep cases in the path of recovery is much more important.

Suggestions

- Shift the focus from treating illness to supporting recovery
- Identify the client's personal recovery capital (i.e., strengths and assets that can be applied to maintain and enhance wellbeing and healthy functioning)
- Draw on family and interpersonal social capital to mobilize others who can support the client's recovery goals
- Provide resources to support education, leisure, employment and social engagement that are valued by the client

Recovery is the Bridge between who you are and who you want to be.