Appendices

Appendix 1: Australian amphetamine withdrawal study instruments

APPENDIX 1.1

Criteria for Amphetamine Dependence	Study number			
Current (DSM-IV)	Study Initials			

Date: …….. / …….. / 200……

These questions are about your amphetamine use in the last year

		(tick one box) **YES**	**NO**
1	Have you found that you needed to use more amphetamine to get the same effect that you did when you first started taking it?		
2	When you reduced or stopped using amphetamine, did you have withdrawal symptoms (aches, shaking, fever, weakness, diarrhea, nausea, sweating, heart pounding, difficulty sleeping, or feeling agitated, anxious, irritable, or depressed)? Did you use any drug(s) to keep yourself from getting sick (withdrawal symptoms) or so that you would feel better?		
3	Have you often found that when you used amphetamine, you ended up taking more than you thought you would?		
4	Have you tried to reduce or stop taking amphetamine but failed?		
5	On the days that you used amphetamine, did you spend substantial time (>2 HOURS), obtaining, using or in recovering from the drug, or thinking about the drug?		
6	Did you spend less time working, enjoying hobbies, or being with family or friends because of your amphetamine use?		
7	Have you continued to use amphetamine, even though it caused you health or mental problems?		

TOTAL SCORE ☐

Sheehan, D., Lecrubier, Y., Harnett-Sheehan, K., Janavs, J., Weiller, E., Bonara, L., Keskiner, A., Schinka, J., Knapp, E., Sheehan, M., & Dunbar, G. (1997). Reliability and Validity of the MINI International Neuropsychiatric Interview (M.I.N.I.): According to the SCID-P. European Psychiatry, 12, 232-241.

APPENDIX 1.2

Criteria for Alcohol Dependence*	Study number			
Current (DSM-IV)	Study Initials			

Date: …….. / …….. / 200……

These questions are about your drinking in the last year

(tick one box)

		YES	**NO**
1	Did you need to drink more in order to get the same effect that you got when you first started drinking?		
2	When you cut down on drinking did your hands shake, did you sweat or feel agitated? Did you drink to avoid these symptoms or to avoid being hungover, for example, "the shakes", sweating or agitation?		
3	During the times when you drank alcohol, did you end up drinking more than you planned when you started?		
4	Have you tried to reduce or stop drinking alcohol but failed?		
5	On the days that you drank, did you spend substantial time in obtaining alcohol, drinking, or in recovering from the effects of alcohol?		
6	Did you spend less time working, enjoying hobbies, or being with others because of your drinking?		
7	Have you continued to drink even though you knew that the drinking caused you health or mental problems?		

TOTAL SCORE ☐

*From: Sheehan, D., Lecrubier, Y., Harnett-Sheehan, K., Janavs, J., Weiller, E., Bonara, L., Keskiner, A., Schinka, J., Knapp, E., Sheehan, M., & Dunbar, G. (1997). Reliability and Validity of the MINI International Neuropsychiatric Interview (M.I.N.I.): According to the SCID-P. European Psychiatry, 12, 232-241.

APPENDIX 1.3

Criteria for Substance Dependence*	Study number			
(DSM-IV)	Study Initials			

Date: …….. / …….. / 200……

These questions are about your ..... use in the last year

(tick one box)

		YES	**NO**
1	Have you found that you needed to use more ..... to get the same effect that you did when you first started taking it?		
2	When you reduced or stopped using ....., did you have withdrawal symptoms (aches, shaking, fever, weakness, diarrhea, nausea, sweating, heart pounding, difficulty sleeping, or feeling agitated, anxious, irritable, or depressed)? Did you use any drug(s) to keep yourself from getting sick (withdrawal symptoms) or so that you would feel better?		
3	Have you often found that when you used ....., you ended up taking more than you thought you would?		
4	Have you tried to reduce or stop taking ..... but failed?		
5	On the days that you used ....., did you spend substantial time (>2 HOURS), obtaining, using or in recovering from the drug, or thinking about the drug?		
6	Did you spend less time working, enjoying hobbies, or being with family or friends because of your drug use?		
7	Have you continued to use ....., even though it caused you health or mental problems?		

TOTAL SCORE ☐

*From: Sheehan, D., Lecrubier, Y., Harnett-Sheehan, K., Janavs, J., Weiller, E., Bonara, L., Keskiner, A., Schinka, J., Knapp, E., Sheehan, M., & Dunbar, G. (1997). Reliability and Validity of the MINI International Neuropsychiatric Interview (M.I.N.I.): According to the SCID-P. European Psychiatry, 12, 232-241.

APPENDIX 1.4

SDS

Study number ☐☐☐

Study Initials ☐☐☐

Date: …….. / …….. / 200……

These questions are about your <u>amphetamine</u> <u>or</u> <u>methamphetamine</u> <u>use</u> in the <u>last year.</u> *(Circle one answer to each question, 0–3)*

1. Did you ever think your amphetamine use was out of control?

Never or almost never	*Sometimes*	*Often*	*Always or nearly always*

2. Did the prospect of missing a dose make you very anxious or worried? (e.g. going without amphetamine)

Never or almost never	*Sometimes*	*Often*	*Always or nearly always*

3. Did you worry about your amphetamine use?

Not at all	*A little*	*Quite a lot*	*A great deal*

4. Did you wish you could stop?

Never or almost never	*Sometimes*	*Often*	*Always or nearly always*

5. How difficult would you find it to stop or go without?

Not difficult	*Quite difficult*	*Very difficult*	*Impossible*

APPENDIX 1.5

AMPHETAMINE WITHDRAWAL QUESTIONNAIRE (AWQ) Study number

Date ……. / ……. / 200 ……. Study initials

DURING THE PAST 24 HOURS:		**CIRCLE ONE ANSWER PER QUESTION**				
1	**Have you been craving amphetamine or methamphetamine?**	*Not at all*	*Very little*	*A little*	*Quite a lot*	*Very much*
2	**Have you felt sad?**	*Not at all*	*Very little*	*A little*	*Quite a lot*	*Very much*
3	**Have you lost interest in things or no longer take pleasure in them?**	*Not at all*	*Very little*	*A little*	*Quite a lot*	*Very much*
4	**Have you felt anxious?**	*Not at all*	*Very little*	*A little*	*Quite a lot*	*Very much*
5	**Have you felt as if your movements are slow?**	*Not at all*	*Very little*	*A little*	*Quite a lot*	*Very much*
6	**Have you felt agitated?**	*Not at all*	*Very little*	*A little*	*Quite a lot*	*Very much*
7	**Have you felt tired?**	*Not at all*	*Very little*	*A little*	*Quite a lot*	*Very much*
8	**Has your appetite increased or are you eating too much?**	*Not at all*	*Very little*	*A little*	*Quite a lot*	*Very much*
9	**Have you had any vivid or unpleasant dreams**	*Not at all*	*Very little*	*A little*	*Quite a lot*	*Very much*
10	**Have you been craving for sleep or sleeping too much?**	*Not at all*	*Very little*	*A little*	*Quite a lot*	*Very much*

Srisurapanont, M., Jarusuraisin, N., & Jittiwutikarn, J. (1999). Amphetamine withdrawal: 1. Reliability, validity and factor structure of a measure. Australian and New Zealand Journal of Psychiatry, 33, 89-93.

APPENDIX 1.6

AMPHETAMINE WITHDRAWAL STUDY Study number ☐☐☐

AMPHETAMINE SELECTIVE SEVERITY ASSESSMENT Study Initials ☐☐☐

Date / /

		THESE QUESTIONS REFER TO SYMPTOMS EXPERIENCED OVER THE PREVIOUS 24 HOURS	**Score**
1	**Hyperphagia**	0 = normal appetite; 3–4 = eats a lot more than usual; 7- eats more than twice usual amount of food	
2	**Hypophagia**	0 = normal appetite; 3–4 = eats less than half of normal amount of food; 7 = no appetite at all	
3	**Carbohydrate craving**	0 = no craving; 3–4 = strong craving for sweets, cakes and biscuits half the time; 7 = strong craving for sweets, cakes and biscuits all the time	
4	**Craving intensity**	(from scale below 0–7)	
5	**Craving frequency**	(from scale below 0–7)	
6	**Bradycardia**	Radial pulse 0 = > 64; 1 = 64–63; 2 = 62–61; 3 = 60–59; 4 = 58–57; 5 = 56–55; 6 = 54–53; 7 = < 53	
7	**Sleep I**	0 = normal amount of sleep; 3–4 = half of normal amount of sleep; 7 = no sleep at all	
8	**Sleep II**	0 = normal amount of sleep; 3–4 = could sleep or does sleep half the day; 7 = sleeps or could sleep all the time	
9	**Anxiety**	0 = usually does not feel anxious; 3–4 = feels anxious half the time; 7 = feels anxious all the time	
10	**Energy Level**	0 = feels alert and has usual amount of energy; 3–4 = feels tired half the time; 7 = feels tired all the time	
11	**Activity Level**	0 = no change in usual activities; 3–4 = participates in half of usual activities; 7 = no participation in usual activities	
12	**Tension**	0–1 = rarely feels tense; 3–4 = feels tense half the time; 7 = feels tense most or all the time	
13	**Attention**	0 = able to concentrate on reading, conversation, tasks, and make plans without difficulty; 3–4 = has difficulty with the above half the time; 7 = has difficulty with the above all the time	
14	**Paranoid Ideation**	0 = no evidence of paranoid thoughts; 3–4 unable to trust anyone; 5 = feels people are out to get him/her; 7 = feels a specific person/group is plotting against him/her	
15	**Anhedonia**	0 = ability to enjoy himself/herself remains unchanged; 3–4 = able to enjoy himself/herself half of the time; 7 = unable to enjoy himself/herself at all	
16	**Depression**	0 = no feelings related to sadness or depression; 3–4 feels sad or depressed half the time; 7 = feels sad or depressed all of the time	
17	**Suicidality**	0 = does not think about being dead; 3–4 = feels that life is not worth living; 7 = feels like actually ending his/her life	
18	**Irritability**	0 = feels that most things are not irritating; 3–4 = feels that many things are irritating; 7 = feels that mostly everything is irritating and upsetting	

Please rate the highest intensity of the desire for amphetamines you have felt in the last 24 hours by placing a vertical slash across the line below

No desire at all **Unable to resist**

Please identify on the line below, how often you have felt the urge to use amphetamines in the last 24 hours by placing a vertical slash across the line below

Never **All the time**

Adapted from Kampman K, Volpicelli J, McGinnis D, Alterman A, Weinrieb R, D'Angelo L & Epperson L (1998) Reliability and validity of the Cocaine Selective Severity Assessment. Addictive Behaviors Jul-Aug;23:449-461.

APPENDIX 1.7

AMPHETAMINE CRAVING QUESTIONNAIRE (ACQ) Study number…….

Study Initials …….

Date: …….. / …….. / 200…….

ACQ PAGE 1 **PLEASE CIRCLE ONE ANSWER PER QUESTION**

1	If I were using amphetamine, I could think more clearly	*Strongly disagree*	*Disagree*	*Somewhat disagree*	*Neither agree nor disagree*	*Somewhat agree*	*Agree*	*Strongly agree*
2	Right now I am not making plans to use amphetamine	*Strongly disagree*	*Disagree*	*Somewhat disagree*	*Neither agree or disagree*	*Somewhat agree*	*Agree*	*Strongly agree*
3	My desire to use amphetamine seems overpowering	*Strongly disagree*	*Disagree*	*Somewhat disagree*	*Neither agree or disagree*	*Somewhat agree*	*Agree*	*Strongly agree*
4	I am thinking of ways to get amphetamine	*Strongly disagree*	*Disagree*	*Somewhat disagree*	*Neither agree or disagree*	*Somewhat agree*	*Agree*	*Strongly agree*
5	I don't want to use amphetamine now	*Strongly disagree*	*Disagree*	*Somewhat disagree*	*Neither agree or disagree*	*Somewhat agree*	*Agree*	*Strongly agree*
6	If I were offered some amphetamine, I would use it immediately	*Strongly disagree*	*Disagree*	*Somewhat disagree*	*Neither agree or disagree*	*Somewhat agree*	*Agree*	*Strongly agree*
7	Using amphetamine would make me feel less depressed	*Strongly disagree*	*Disagree*	*Somewhat disagree*	*Neither agree or disagree*	*Somewhat agree*	*Agree*	*Strongly agree*
8	I could easily control how much amphetamine I used right now	*Strongly disagree*	*Disagree*	*Somewhat disagree*	*Neither agree or disagree*	*Somewhat agree*	*Agree*	*Strongly agree*
9	I crave amphetamine right now	*Strongly disagree*	*Disagree*	*Somewhat disagree*	*Neither agree or disagree*	*Somewhat agree*	*Agree*	*Strongly agree*
10	Using amphetamine now would make me feel powerful	*Strongly disagree*	*Disagree*	*Somewhat disagree*	*Neither agree or disagree*	*Somewhat agree*	*Agree*	*Strongly agree*
11	If there was amphetamine right here in front of me, it would be hard not to use it	*Strongly disagree*	*Disagree*	*Somewhat disagree*	*Neither agree or disagree*	*Somewhat agree*	*Agree*	*Strongly agree*
12	Using amphetamine would not help me calm down now	*Strongly disagree*	*Disagree*	*Somewhat disagree*	*Neither agree or disagree*	*Somewhat agree*	*Agree*	*Strongly agree*
13	I would feel very alert if I used amphetamine now	*Strongly disagree*	*Disagree*	*Somewhat disagree*	*Neither agree or disagree*	*Somewhat agree*	*Agree*	*Strongly agree*
14	If I had the chance to use amphetamine I don't think I would use it	*Strongly disagree*	*Disagree*	*Somewhat disagree*	*Neither agree or disagree*	*Somewhat agree*	*Agree*	*Strongly agree*
15	I would not enjoy using amphetamine right now	*Strongly disagree*	*Disagree*	*Somewhat disagree*	*Neither agree or disagree*	*Somewhat agree*	*Agree*	*Strongly agree*
16	I would do almost anything for amphetamine now	*Strongly disagree*	*Disagree*	*Somewhat disagree*	*Neither agree or disagree*	*Somewhat agree*	*Agree*	*Strongly agree*

17	I could control things better right now if I could use amphetamine	*Strongly disagree*	*Disagree*	*Somewhat disagree*	*Neither agree or disagree*	*Somewhat agree*	*Agree*	*Strongly agree*
18	Even if it were possible, I probably wouldn't use amphetamine now	*Strongly disagree*	*Disagree*	*Somewhat disagree*	*Neither agree or disagree*	*Somewhat agree*	*Agree*	*Strongly agree*
19	Using amphetamine would not be pleasant	*Strongly disagree*	*Disagree*	*Somewhat disagree*	*Neither agree or disagree*	*Somewhat agree*	*Agree*	*Strongly agree*
20	I think that I could resist using amphetamine now	*Strongly disagree*	*Disagree*	*Somewhat disagree*	*Neither agree or disagree*	*Somewhat agree*	*Agree*	*Strongly agree*
21	I have an urge for amphetamine	*Strongly disagree*	*Disagree*	*Somewhat disagree*	*Neither agree or disagree*	*Somewhat agree*	*Agree*	*Strongly agree*
22	I would not be able to control how much amphetamine I used if I had some here	*Strongly disagree*	*Disagree*	*Somewhat disagree*	*Neither agree or disagree*	*Somewhat agree*	*Agree*	*Strongly agree*
23	Starting now, I could go without using meth /amphetamine for a long time	*Strongly disagree*	*Disagree*	*Somewhat disagree*	*Neither agree or disagree*	*Somewhat agree*	*Agree*	*Strongly agree*
24	I would be less irritable now if I could use amphetamine	*Strongly disagree*	*Disagree*	*Somewhat disagree*	*Neither agree or disagree*	*Somewhat agree*	*Agree*	*Strongly agree*
25	I would feel energetic if I used amphetamine	*Strongly disagree*	*Disagree*	*Somewhat disagree*	*Neither agree or disagree*	*Somewhat agree*	*Agree*	*Strongly agree*
26	All I want to use now is amphetamine	*Strongly disagree*	*Disagree*	*Somewhat disagree*	*Neither agree or disagree*	*Somewhat agree*	*Agree*	*Strongly agree*
27	Using amphetamine would not sharpen my concentration	*Strongly disagree*	*Disagree*	*Somewhat disagree*	*Neither agree or disagree*	*Somewhat agree*	*Agree*	*Strongly agree*
28	I do not need to use amphetamine now	*Strongly disagree*	*Disagree*	*Somewhat disagree*	*Neither agree or disagree*	*Somewhat agree*	*Agree*	*Strongly agree*
29	It would be difficult to turn down amphetamine this minute	*Strongly disagree*	*Disagree*	*Somewhat disagree*	*Neither agree or disagree*	*Somewhat agree*	*Agree*	*Strongly agree*
30	If I used amphetamine right now, I would not feel less restless	*Strongly disagree*	*Disagree*	*Somewhat disagree*	*Neither agree or disagree*	*Somewhat agree*	*Agree*	*Strongly agree*
31	I will use amphetamine as soon as I get the chance	*Strongly disagree*	*Disagree*	*Somewhat disagree*	*Neither agree or disagree*	*Somewhat agree*	*Agree*	*Strongly agree*
32	Using amphetamine now would make things seem just perfect	*Strongly disagree*	*Disagree*	*Somewhat disagree*	*Neither agree or disagree*	*Somewhat agree*	*Agree*	*Strongly agree*
33	I want amphetamine so bad I can almost taste it	*Strongly disagree*	*Disagree*	*Somewhat disagree*	*Neither agree or disagree*	*Somewhat agree*	*Agree*	*Strongly agree*

34	Nothing would be better than using amphetamine right now	*Strongly disagree*	*Disagree*	*Somewhat disagree*	*Neither agree or disagree*	*Somewhat agree*	*Agree*	*Strongly agree*
35	If I used amphetamine, my anger would not decrease	*Strongly disagree*	*Disagree*	*Somewhat disagree*	*Neither agree or disagree*	*Somewhat agree*	*Agree*	*Strongly agree*
36	It would be easy to pass up the chance to use amphetamine	*Strongly disagree*	*Disagree*	*Somewhat disagree*	*Neither agree or disagree*	*Somewhat agree*	*Agree*	*Strongly agree*
37	I am going to use amphetamine as soon as possible	*Strongly disagree*	*Disagree*	*Somewhat disagree*	*Neither agree or disagree*	*Somewhat agree*	*Agree*	*Strongly agree*
38	I have no desire for amphetamine right now	*Strongly disagree*	*Disagree*	*Somewhat disagree*	*Neither agree or disagree*	*Somewhat agree*	*Agree*	*Strongly agree*
39	I could not stop myself from using amphetamine if I had some here now	*Strongly disagree*	*Disagree*	*Somewhat disagree*	*Neither agree or disagree*	*Somewhat agree*	*Agree*	*Strongly agree*
40	Using amphetamine right now would make me feel less tired	*Strongly disagree*	*Disagree*	*Somewhat disagree*	*Neither agree or disagree*	*Somewhat agree*	*Agree*	*Strongly agree*
41	Using amphetamine would not be very satisfying now	*Strongly disagree*	*Disagree*	*Somewhat disagree*	*Neither agree or disagree*	*Somewhat agree*	*Agree*	*Strongly agree*
42	If I tried a little meth /amphetamine now, I would not be able to stop using more of it	*Strongly disagree*	*Disagree*	*Somewhat disagree*	*Neither agree or disagree*	*Somewhat agree*	*Agree*	*Strongly agree*
43	I would not feel less anxious if I used amphetamine	*Strongly disagree*	*Disagree*	*Somewhat disagree*	*Neither agree or disagree*	*Somewhat agree*	*Agree*	*Strongly agree*
44	I am not missing using amphetamine now	*Strongly disagree*	*Disagree*	*Somewhat disagree*	*Neither agree or disagree*	*Somewhat agree*	*Agree*	*Strongly agree*
45	If I had some amphetamine with me right now, I probably wouldn't use it	*Strongly disagree*	*Disagree*	*Somewhat disagree*	*Neither agree or disagree*	*Somewhat agree*	*Agree*	*Strongly agree*

THANK YOU FOR COMPLETING THIS QUESTIONNAIRE

Adapted from: Tiffany, S., Singleton, E., Haertzen, C., & Henningfield, J. (1993). The development of a cocaine craving questionnaire. Drug and Alcohol Dependence, 34(1), 19-28.
Scoring range: 1-7

APPENDIX 1.8

STUDY 1: AMPHETAMINE WITHDRAWAL STUDY **Study number** | | | |

CLINICAL GLOBAL IMPRESSIONS (CGI) **Study Initials** | | | |

Date | | | / | | | / | 2 | 0 | 0 | |

SEVERITY OF ILLNESS

Considering your total clinical experience with amphetamine users in withdrawal, how ill is the client at this time? *(Circle one number)*

0 Not assessed

1 Normal, not at all ill

2 Borderline ill

3 Mildly ill

4 Moderately ill

5 Markedly ill

6 Severely ill

7 Among the most extremely ill patients

*Guy, W. (1976). ECDEU assessment manual for psychopharmacology, revised. Rockville MD: National Institute of Mental Health. DHEW Publication no. (ADM).

APPENDIX 1.9

ST MARY'S HOSPITAL SLEEP QUESTIONNAIRE (SMHSQ)

AMPHETAMINE WITHDRAWAL STUDY Study number | | | |

Study Initials | | | |

Date | | | | | | 2 | 0 | 0 | |

THIS QUESTIONNAIRE REFERS TO YOUR SLEEP OVER THE PAST 24 HOURS. PLEASE TRY AND ANSWER EVERY QUESTION.

At what time did you:

1 Settle down for the night? ……..

2 Fall asleep last night? ……..

3 Finally wake this morning? ……..

4 Get up this morning? ……..

Sleep Latency in minutes (Office use only)

5 Was your sleep? (Circle one)

1. Very light
2. Light
3. Fairly Light
4. Light average
5. Deep average
6. Fairly deep
7. Deep
8. Very deep

Total Night Sleep Period in minutes (Office use only)

Sleep Period (11pm-7am) in minutes (Office use only)

Awake Onset Latency in minutes (Office use only)

6 How many times did you wake up? (Circle one)

0. Not at all
1. Once
2. Twice
3. Three times
4. Four times
5. Five times
6. Six times
7. More than six times

How much sleep did you have:

7 Last night? ……..HOURS

8 During the day yesterday? ……..HOURS

9 How well did you sleep last night? (Circle one)

1. Very badly
2. Badly
3. Fairly badly
4. Fairly well
5. Well
6. Very well

If not well, what was the trouble? (e.g. restlessness, etc.)

1 ……
2 ……
3 ……

10 How clear-headed did you feel after getting up this morning? (Circle one)

1. Still very drowsy indeed
2. Still moderately drowsy
3. Still slightly drowsy
4. Fairly clear-headed
5. Alert
6. Very alert

11 How satisfied were you with last night's sleep? (Circle one)

1. Very unsatisfied
2. Moderately unsatisfied
3. Slightly unsatisfied
4. Fairly satisfied
5. Completely satisfied

12 Were you troubled by waking early and being unable to get off to sleep again? (Circle one)

1. No 2. Yes

13 How much difficulty did you have in getting off to sleep last night? (Circle one)

1. None or very little
2. Some
3. A lot
4. Extreme difficulty

14 How long did it take you to fall asleep last night?

……..

Ellis, B., Johns, M., Lancaster, R., Raptopoulos, P., Angelopoulos, N., & Priest, R. (1981). The St. Mary's Hospital sleep questionnaire: a study of reliability. Sleep, 4(1), 93-97.

Appendix 2: Thailand amphetamine withdrawal study instruments

APPENDIX 2.1

เกณฑ์การวินิจฉัยการติดแอมเฟตามีน (Criteria for Amphetamine Dependence, 7.5.7-2)

ผู้ร่วมวิจัยเลขที่ ……อักษรแรกของชื่อและนามสกุล……

วันที่ …../……/…… จำนวนวันที่เข้ารับรักษา

……

คำถามในข้อนี้เกี่ยวกับการใช้และปัญหาที่สัมพันธ์กับการใช้แอมเฟตามีนในช่วง 12 เดือนที่ผ่านมา

1. ท่านพบว่าท่านต้องใช้แอมเฟตามีนมากขึ้นเพื่อให้ได้ความรู้สึกเหมือนเดิมตอนที่เริ่มใช้	☐1 ไม่	☐2 ใช่
2. เมื่อท่านลดหรือหยุดใช้แอมเฟตามีน ท่านมักมีอาการถอนยาเกิดขึ้น (เช่น นอนมาก, รับประทานอาหารมาก, ซึมเศร้า, เคลื่อนไหวช้า, กระวนกระวาย เป็นต้น) หรือต้องใช้ยาหรือสารเสพติดอื่นทดแทน	☐1 ไม่	☐2 ใช่
3. บ่อยครั้งที่ท่านตั้งใจจะใช้แอมเฟตามีนเพียงเล็กน้อย แต่กลับใช้มากกว่าที่ตั้งใจไว้	☐1 ไม่	☐2 ใช่
4. ท่านเคยพยายามที่จะลดหรือหยุดใช้แอมเฟตามีน แต่ไม่สำเร็จ	☐1 ไม่	☐2 ใช่
5. ในหลายๆ วันที่ท่านใช้แอมเฟตามีน ท่านใช้เวลามากกว่า 2 ชั่วโมงในการหา, ใช้ (หรือเสพ), ฟื้นจากฤทธิ์ยา หรือครุ่นคิดเกี่ยวกับการใช้ยา	☐1 ไม่	☐2 ใช่
6. บ่อยครั้งที่ท่านใช้เวลาสำหรับการเรียน, การพักผ่อนหย่อนใจ หรือการสังสรรค์กับญาติหรือเพื่อนน้อยลงเนื่องจากการใช้แอมเฟตามีน	☐1 ไม่	☐2 ใช่
7. บ่อยครั้งที่ท่านยังคงใช้แอมเฟตามีน แม้ว่ามันจะเป็นตัวการทำให้ท่านเกิดปัญหาทางสุขภาพหรือจิตใจ	☐1 ไม่	☐2 ใช่

APPENDIX 2.2

เกณฑ์การวินิจฉัยการติดสุรา (Criteria for Alcohol Dependence, 7.5.7-1)

ผู้ร่วมวิจัยเลขที่ ……อักษรแรกของชื่อและนามสกุล……

วันที่ …../……./……. จำนวนวันที่เข้ารับรักษา ……

คำถามเหล่านี้เกี่ยวกับการดื่มสุราของท่านในช่วง 12 เดือนที่ผ่านมา

1. ท่านพบว่าท่านต้องดื่มสุรามากขึ้นเพื่อให้ได้ความรู้สึกเหมือนเดิมตอนที่เริ่มดื่ม	☐[1] ไม่	☐[2] ใช่
2. เมื่อท่านลดหรือหยุดดื่มสุรา ท่านมักมีอาการมือสั่น, เหงื่อออก หรือกระวนกระวาย หรือท่านดื่มสุราเพื่อหลีกเลี่ยงอาการถอนสุราหรืออาการถอนสุราตอนเช้า ซึ่งก่อให้เกิดอาการบางอย่าง เช่น มือสั่น, เหงื่อออก หรือกระวนกระวาย	☐[1] ไม่	☐[2] ใช่
3. บ่อยครั้งที่ท่านตั้งใจจะดื่มสุราเพียงเล็กน้อย แต่กลับดื่มมากกว่าที่ตั้งใจไว้	☐[1] ไม่	☐[2] ใช่
4. ท่านเคยพยายามที่จะลดหรือหยุดดื่มสุรา แต่ไม่สำเร็จ	☐[1] ไม่	☐[2] ใช่
5. ในหลายๆ วันที่ท่านดื่มสุรา ท่านใช้เวลามากกว่า 2 ชั่วโมงในการหา, ใช้ (หรือเสพ), ฟื้นจากฤทธิ์สุรา หรือครุ่นคิดเกี่ยวกับการดื่มสุรา	☐[1] ไม่	☐[2] ใช่
6. บ่อยครั้งที่ท่านใช้เวลาสำหรับการเรียน, การพักผ่อนหย่อนใจ หรือการสังสรรค์กับญาติหรือเพื่อนน้อยลงเนื่องจากการดื่มสุรา	☐[1] ไม่	☐[2] ใช่
7. บ่อยครั้งที่ท่านยังคงดื่มสุรา แม้ว่ามันจะเป็นตัวการทำให้ท่านเกิดปัญหาทางสุขภาพหรือจิตใจ	☐[1] ไม่	☐[2] ใช่

APPENDIX 2.3

เกณฑ์การวินิจฉัยการติดสารเสพติดอื่น (Criteria for Other Substance Dependence, 7.5.7-3)

ผู้ร่วมวิจัยเลขที่ ……อักษรแรกของชื่อและนามสกุล……

วันที่ …../……./…… จำนวนวันที่เข้ารับรักษา ……

คำถามในข้อต่อไปนี้เกี่ยวกับการใช้และปัญหาที่สัมพันธ์กับการใช้ ……ในช่วง 12 เดือนที่ผ่านมา (ต่อไปนี้ คำว่า "สารเสพติดดังกล่าว" หมายถึง ……..)

1. ท่านพบว่าท่านต้องใช้สารเสพติดดังกล่าวมากขึ้นเพื่อให้ได้ความรู้สึกเหมือนเดิมตอนที่เริ่มใช้	☐1 ไม่	☐2 ใช่
2. เมื่อท่านลดหรือหยุดใช้สารเสพติดดังกล่าว ท่านมักมีอาการถอนยาเกิดขึ้น (เช่น หงุดหงิด, กระวนกระวาย เป็นต้น) หรือต้องใช้ยาหรือสารเสพติดอื่นทดแทน	☐1 ไม่	☐2 ใช่
3. บ่อยครั้งที่ท่านตั้งใจจะใช้สารเสพติดดังกล่าวเพียงเล็กน้อย แต่กลับใช้มากกว่าที่ตั้งใจไว้	☐1 ไม่	☐2 ใช่
4. ท่านเคยพยายามที่จะลดหรือหยุดใช้สารเสพติดดังกล่าว แต่ไม่สำเร็จ	☐1 ไม่	☐2 ใช่
5. ในหลายๆ วันที่ท่านใช้สารเสพติดดังกล่าว ท่านใช้เวลามากกว่า 2 ชั่วโมงในการหา, ใช้ (หรือเสพ), ฟื้นจากฤทธิ์ยา หรือครุ่นคิดเกี่ยวกับการใช้ยา	☐1 ไม่	☐2 ใช่
6. บ่อยครั้งที่ท่านใช้เวลาสำหรับการเรียน, การพักผ่อนหย่อนใจ หรือการสังสรรค์กับญาติหรือเพื่อนน้อยลงเนื่องจากการใช้สารเสพติดดังกล่าว	☐1 ไม่	☐2 ใช่
7. บ่อยครั้งที่ท่านยังคงใช้สารเสพติดดังกล่าว แม้ว่ามันจะเป็นตัวการทำให้ท่านเกิดปัญหาทางสุขภาพหรือจิตใจ	☐1 ไม่	☐2 ใช่

APPENDIX 2.4

แบบประเมินความรุนแรงของการติดแอมเฟตามีน (SDS, 7.5.6)

ผู้ร่วมวิจัยเลขที่ ……อักษรแรกของชื่อและนามสกุล……

วันที่ …../……./…… จำนวนวันที่เข้ารับรักษา ……

คำถามต่อไปนี้เกี่ยวกับการใช้ยาแอมเฟตามีนของท่านในช่วง 1 ปีที่ผ่าน (กรุณาวงกลมคำตอบที่ตรงกับตัวท่าน)

1. ท่านเคยคิดหรือไม่ว่าท่านไม่สามารถควบคุมการใช้แอมเฟตามีน

ไม่เคยหรือเกือบไม่เคยคิดเลย	*บางครั้งก็คิดว่าไม่สามารถควบคุม*	*คิดอยู่บ่อยๆว่าไม่สามารถควบคุม*	*คิดอยู่เสมอหรือเกือบเสมอว่าไม่สามารถควบคุม*

2. บ่อยเพียงใดที่ท่านรู้สึกวิตกกังวลเนื่องจากการไม่ได้ใช้แอมเฟตามีน

ไม่เคยหรือเกือบเคยไม่วิตกกังวลเลย	*บางครั้งก็วิตกกังวล*	*บ่อยครั้งที่รู้สึกวิตกกังวล*	*รู้สึกวิตกกังวลเสมอหรือเกือบตลอดเวลา*

3. ท่านรู้สึกกังวลเกี่ยวกับการใช้แอมเฟตามีนของท่านหรือไม่

ไม่รู้สึกกังวลเลย	*รู้สึกกังวลบ้าง*	*รู้สึกกังวลค่อนข้างมาก*	*รู้สึกกังวลเป็นอย่างมาก*

4. บ่อยเพียงใดที่ท่านรู้สึกอยากหยุดใช้แอมเฟตามีน

ไม่เคยหรือเกือบไม่เคยรู้สึกอยากหยุดเลย	*บางครั้งก็รู้สึกอยากหยุด*	*บ่อยครั้งที่รู้สึกว่าอยากหยุด*	*รู้สึกเสมอหรือเกือบเสมอๆ ว่าอยากหยุด*

5. ท่านคิดว่าการหยุดหรือเลิกใช้แอมเฟตามีนเป็นเรื่องยากเย็นเพียงใด

ไม่ยากเลย	*ยากบ้าง*	*ยากมาก*	*คิดว่าไม่สามารถหยุดหรือเลิกได้*

APPENDIX 2.5

แบบสอบถามอาการถอนยาแอมเฟตามีน (AWQ, 7.5.2)

ผู้ร่วมวิจัยเลขที่ .....อักษรแรกของชื่อและนามสกุล.....

วันที่ ...../...../..... จำนวนวันที่เข้ารับรักษา

.....

กรุณาขีดเครื่องหมาย √ ลงในช่องที่บรรยายอาการของท่านได้ใกล้เคียงที่สุด ใน 24 ชั่วโมงที่ผ่านมา

หมายเหตุ: แอมเฟตามีนในที่นี้ หมายถึง สารที่ถูกเรียกว่า แอมเฟตามีน, เมธแอมเฟตามีน, ยาขยัน, ยาม้า และยาบ้า

อาการ	ไม่มีเลย = 0	มีน้อยมาก = 1	มีพอควร = 2	มีมาก = 3	มีมากอย่างยิ่ง = 4
1. รู้สึกอยากยา					
2. รู้สึกซึมเศร้า					
3. รู้สึกเบื่อ, หมดความสนใจ หรือความสุขใจ					
4. รู้สึกวิตกกังวล					
5. รู้สึกเคลื่อนไหวเชื่องช้า					
6. รู้สึกกระวนกระวาย					
7. ไม่มีเรี่ยวแรงหรืออ่อนเพลีย					
8. รู้สึกอยากอาหารมากขึ้นหรือทานอาหารมากขึ้น					
9. ฝันร้ายหรือรู้สึกว่าความฝันเหมือนจริง					
10. รู้สึกอยากนอนหรือนอนมาก					

1. Hyperarousal subscale score (items 1+6+9) .....
2. Anxiety subscale score (items 3+4+5) .....
3. Reversed vegetative subscale score (items 7+8+10) .....
4. Total AWQ (3-subscale scores + item 2) .....

APPENDIX 2.6

แบบประเมินความรุนแรงของปัญหาที่สัมพันธ์กับแอมเฟตามีน (ASSA, 7.5.9)

ผู้ร่วมวิจัยเลขที่ .....อักษรแรกของชื่อและนามสกุล.....

วันที่ ...../...../..... จำนวนวันที่เข้ารับรักษา .....

คำถามเหล่านี้เกี่ยวข้อกับอาการต่างๆ ที่เกิดขึ้นในช่วง 24 ชั่วโมงที่ผ่านมา

หมายเหตุ: แอมเฟตามีนในที่นี้ หมายถึง สารที่ถูกเรียกว่า แอมเฟตามีน, เมธแอมเฟตามีน, ยาขยัน, ยาม้า และยาบ้า

			Score
1	การรับประทานอาหารมากขึ้น	0 = อยากอาหารปกติ; 3–4 = รับประทานอาหารมากกว่าปกติ; 7- รับประทานอาหารมากกว่าปกติประมาณ 2 เท่า	
2	การรับประทานอาหารน้อยลง	0 = อยากอาหารปกติ; 3–4 = รับประทานอาหารประมาณครึ่งหนึ่งของปกติ; 7 = ไม่อยากอาหารเลย	
3	อยากรับประทานแป้ง, น้ำตาล และของที่มีรสหวาน	0 = ไม่อยากเลย; 3–4 = อยากแป้ง, น้ำตาล และอาหารที่มีรสหวานประมาณครึ่งหนึ่งของเวลา; 7 = อยากแป้ง, น้ำตาล และอาหารที่มีรสหวานตลอดเวลา	
4	ความอยาก	(คะแนนระหว่าง 0–7)	
5	ความถี่ของความอยาก	(คะแนนระหว่าง 0–7)	
6	หัวใจเต้นช้า	ชีพจร 0 = 0-79; 1 = 80-86; 2 = 87-93; 3 = 94-100; 4 = 101-107; 5 = 108-114; 6 = 115-120; 7 = >120	
7	การนอน I	0 = ปริมาณการนอนปกติ; 3–4 = ปริมาณน้อยลงครึ่งหนึ่ง; 7 = นอนไม่หลับเลย	
8	การนอน II	0 = ปริมาณการนอนปกติ; 3–4 = ง่วงนอนหรือนอนประมาณครึ่งวัน; 7 = ง่วงนอนหรือนอนทั้งวัน	
9	วิตกกังวล	0 = ไม่ค่อยรู้สึกวิตกกังวล; 3–4 = รู้สึกวิตกกังวลครึ่งหนึ่งของเวลา; 7 = รู้สึกวิตกกังวลตลอดเวลา	
10	เรี่ยวแรง	0 = รู้สึกตื่นตัวและเรี่ยวแรงเป็นปกติดี; 3–4 = รู้สึกเหนื่อยอ่อนประมาณครึ่งหนึ่งของเวลา; 7 = รู้สึกเหนื่อยอ่อนตลอดเวลา	
11	การเข้าร่วมกิจกรรม	0 = ไม่มีการเปลี่ยนแปลงของกิจกรรมต่างๆ ; 3–4 = เข้าร่วมประมาณครึ่งหนึ่งของกิจกรรม; 7 = ไม่เข้าร่วมกิจกรรมเลย	

แบบประเมินความรุนแรงของปัญหาที่สัมพันธ์กับแอมเฟตามีน (ต่อ)

12	ตึงเครียด	0–1 = รู้สึกตึงเครียดน้อยมา; 3–4 = รู้สึกตึงเครียดครึ่งหนึ่งของเวลา; 7 =	
13	สมาธิ	0 = มีสมาธิทำให้ไม่มีปัญหาในการอ่าน, พูดคุย, ทำกิจกรรม และวางแผนในเรื่องต่างๆ ได้โดยไม่; 3–4 =	
14	ความคิดหวาดระแวง	0 = ไม่มีความคิดหวาดระแวงเลย; 3–4 ไม่ไว้ใจผู้อื่น; 5 = รู้สึกว่ามีคนแกล้ง; 7 =	
15	ความรู้สึกหดหู่	0 = รู้สึกสนุกสนานโดยไม่เปลี่ยนแปลง; 3–4 = รู้สึกสนุกสนานประมาณครึ่งหนึ่งของเวลา; 7 =	
16	ความรู้สึกซึมเศร้า	0 = ไม่มีความรู้สึกซึมเศร้าหรือเสียใจเลย; 3–4 = รู้สึกซึมเศร้าหรือเสียใจครึ่งหนึ่งของเวลา; 7 =	
17	การฆ่าตัวตาย	0 = ไม่มีความคิดเกี่ยวกับการตายเลย; 3–4 = รู้สึกว่าตนเองไม่น่ามีชีวิตอีกต่อไป; 7 =	
18	ความรู้สึกหงุดหงิด	0 = ไม่รู้สึกหงุดหงิดเลย; 3–4 = รู้สึกว่ามีหลายอย่างทำให้หงุดหงิด; 7 = รู้สึกว่าหงุดหงิดแทบทุกเรื่อง	
	รวม		

โปรดระบุว่า ในช่วง 24 ชั่วโมงที่ผ่าน
ในขณะที่ท่านรู้สึกอยากใช้แอมเฟตามีนมากที่สุดท่านรู้สึกอยากมากเพียงใด

ไม่รู้สึกอยากเลย ☐☐☐☐☐☐☐ อยากจนทนไม่ไหว

โปรดระบุว่าท่านรู้สึกอยากใช้แอมเฟตามีนบ่อยแค่ไหนในช่วง 24 ชั่วโมงที่ผ่านมา

ไม่รู้สึกอยากเลย ☐☐☐☐☐☐☐ อยากตลอดเวลา

APPENDIX 2.7

แบบสอบถามความรู้สึกอยากยาแอมเฟตามีน (ACQ, 7.5.8)

ผู้ร่วมวิจัยเลขที่ ……อักษรแรกของชื่อและนามสกุล……

วันที่ …../……./…… จำนวนวันที่เข้ารับรักษา

……

กรุณาใส่เครื่องหมาย √ ที่ตรงกับความคิดและความรู้สึกของท่านมากที่สุดในขณะนี้

หมายเหตุ: แอมเฟตามีนในที่นี้ หมายถึง สารที่ถูกเรียกว่า แอมเฟตามีน, เมธแอมเฟตามีน, ยาขยัน, ยาม้า และยาบ้า

		ไม่เห็นด้วยอย่างยิ่ง	ไม่เห็นด้วย	ไม่ค่อยเห็นด้วย	กลางๆ	ค่อนข้างเห็นด้วย	เห็นด้วย	เห็นด้วยอย่างยิ่ง
1	ถ้าฉันได้ใช้แอมเฟตามีน ความคิดฉันจะแล่นดีกว่านี้							
2	ฉันไม่มีแผนการที่จะใช้แอมเฟตามีนในตอนนี้							
3	ดูเหมือนว่าฉันจะห้ามตัวเองให้หยุดใช้แอมเฟตามีนไม่ได้							
4	ฉันกำลังคิดหาวิธีที่จะได้แอมเฟตามีนมาใช้							
5	ฉันไม่ต้องการใช้แอมเฟตามีน							
6	ถ้ามีคนเอาแอมเฟตามีนให้ฉัน ฉันจะใช้มันทันที							
7	การใช้แอมเฟตามีนจะทำให้ฉันเศร้าน้อยลง							
8	ฉันสามารถควบคุมปริมาณแอมเฟตามีนที่ใช้ได้อย่างง่ายดาย							
9	ฉันรู้สึกอยากยาแอมเฟตามีน							
10	การใช้แอมเฟตามีนจะทำให้ฉันมีกำลังวังชา							
11	ถ้ามีแอมเฟตามีนวางอยู่ข้างหน้าฉัน ฉันคงจะใช้มัน							
12	การใช้แอมเฟตามีนคงไม่ช่วยให้จิตใจของฉันสงบลง							
13	ฉันคงจะตื่นตัวอย่างยิ่ง ถ้าฉันได้ใช้แอมเฟตามีน							

แบบสอบถามความรู้สึกอยากยาแอมเฟตามีน (ต่อ) (ACQ, 7.5.8, cont.)

14	ถึงมีโอกาสที่จะใช้แอมเฟตามีนอีก ฉันก็จะไม่ใช้มัน							
15	ฉันคงไม่รู้สึกสนุกกับการใช้แอมเฟตามีนอีกแล้ว							
16	ฉันจะทำแทบทุกอย่างเพื่อให้ได้แอมเฟตามีนมา							
17	ฉันคงจะทำอะไรได้ดีขึ้นถ้าฉันได้ใช้แอมเฟตามีน							
18	แม้ว่าจะสามารถใช้แอมเฟตามีนได้ ฉันก็คงจะไม่ใช้มัน							
19	การใช้แอมเฟตามีนคงไม่ทำให้ฉันเป็นสุขอีก							
20	ฉันคิดว่าฉันสามารถห้ามตัวเองไม่ให้ใช้แอมเฟตามีนได้แล้ว							
21	ฉันรู้สึกว่ามีอะไรบางอย่างกระตุ้นให้ฉันใช้แอมเฟตามีน							
22	ถ้าฉันมีแอมเฟตามีนอยู่กับตัว ฉันคงไม่สามารถควบคุมปริมาณการใช้ได้							
23	ตั้งแต่นี้เป็นต้นไป ฉันคงไม่ต้องใช้แอมเฟตามีนอีกเป็นเวลานาน							
24	ฉันคงจะหงุดหงิดน้อยลง ถ้าฉันได้ใช้แอมเฟตามีน							
25	ฉันคงจะรู้สึกกระฉับกระเฉง ถ้าฉันได้ใช้แอมเฟตามีน							
26	สิ่งเดียวที่ฉันต้องการในขณะนี้ คือ แอมเฟตามีน							
27	การใช้แอมเฟตามีนคงไม่ทำให้สมาธิของฉันดีขึ้น							
28	ฉันไม่จำเป็นต้องใช้แอมเฟตามีนแล้ว							
29	ในขณะนี้ การเลิกแอมเฟตามีนดูจะเป็นเรื่องยากสำหรับฉัน							
30	ถ้าฉันได้ใช้แอมเฟตามีน ความกระวนกระวายของฉันก็คงไม่ลดลง							
31	ฉันจะใช้แอมเฟตามีนทันทีที่ฉันมีโอกาส							
32	ถ้าได้ใช้แอมเฟตามีน อะไรๆ ก็คงดีขึ้น							

แบบสอบถามความรู้สึกอยากยาแอมเฟตามีน (ต่อ) (ACQ, 7.5.8, cont.)

33	ฉันอยากมีโอกาสลองลิ้มชิมรสแอมเฟตามีนอีกครั้งเพราะฉันอยากใช้มันเหลือเกิน							
34	ไม่มีอะไรดีไปกว่าการได้ใช้แอมเฟตามีนในตอนนี้							
35	ถ้าฉันใช้แอมเฟตามีน ความโกรธของฉันคงไม่สามารถลดลง							
36	มันง่ายมากที่จะไม่ใช้แอมเฟตามีนถึงจะมีโอกาสก็ตาม							
37	ฉันจะใช้แอมเฟตามีนทันทีที่ฉันมีโอกาส							
38	ตอนนี้ฉันไม่รู้สึกต้องการแอมเฟตามีนเลย							
39	ฉันคงจะไม่สามารถห้ามตัวเองได้ ถ้าฉันมีแอมเฟตามีนอยู่กับตัวในตอนนี้							
40	ถ้าได้ใช้แอมเฟตามีน ฉันจะคงรู้สึกอ่อนเพลียน้อยลง							
41	ฉันไม่มีความรู้สึกชอบแอมเฟตามีนอย่างมากแล้วในตอนนี้							
42	ถ้าฉันได้ลองแอมเฟตามีนสักเล็กน้อย ฉันคงต้องใช้มากขึ้นเรื่อยๆ							
43	ถึงแม้ว่าฉันจะใช้แอมเฟตามีน ฉันก็คงจะไม่รู้สึกเครียดน้อยลง							
44	ฉันไม่ได้กำลังคิดถึงการใช้แอมเฟตามีนในขณะนี้							
45	ถึงแม้ว่าฉันจะมีแอมเฟตามีนอยู่กับตัว ฉันก็คงจะไม่ใช้มัน							

ผู้วิจัยขอขอบคุณที่ท่านได้ตอบแบบสอบถามนี้

APPENDIX 2.8

แบบประเมินอาการถอนยาแอมเฟตามีน (Clinical Global Impression, CGI, 7.5.5)

ผู้ร่วมวิจัยเลขที่ .....อักษรแรกของชื่อและนามสกุล.....

วันที่ ...../...../..... จำนวนวันที่เข้ารับรักษา

.....

จากประสบการณ์ในการดูแลผู้ใช้ยาแอมเฟตามีนที่มีอาการถอนยา
ท่านคิดว่าอาการถอนยาที่เกิดขึ้นภายใน 24
ชั่วโมงที่ผ่านมาของผู้ป่วยรายนี้มีความรุนแรงเพียงใด

0	ไม่ประเมิน
1	ปกติ, ไม่มีอาการถอนยาแอมเฟตามีนเลย
2	ไม่ชัดเจนว่ามีอาการถอนยาแอมเฟตามีนหรือไม่
3	มีอาการถอนยาแอมเฟตามีนเล็กน้อย
4	มีอาการถอนยาแอมเฟตามีนปานกลาง
5	มีอาการถอนยาแอมเฟตามีนมาก
6	มีอาการถอนยาแอมเฟตามีนอย่างรุนแรง
7	มีอาการถอนยาแอมเฟตามีนเกือบจะมากที่สุดเท่าที่เคยเห็นมา

APPENDIX 2.9

แบบสอบถามเกี่ยวกับการนอน (Sleep Questionnaire, 7.5.4)

ผู้ร่วมวิจัยเลขที่ ……อักษรแรกของชื่อและนามสกุล……

วันที่ …../……/…… จำนวนวันที่เข้ารับรักษา ……

ต่อไปนี้เป็นคำถามที่ถามถึงการนอนของท่านในช่วง 24 ชั่วโมงที่ผ่านมา
เมื่อคืนนี้ เวลาเท่าไหร่ที่ท่าน

1. เมื่อคืนนี้ ท่านเข้านอนเวลาเท่าไหร่ …….
2. เมื่อคืนนี้ ท่านเริ่มหลับเวลาเท่าไหร่ …….
3. เมื่อคืนนี้ ท่านตื่นครั้งสุดท้าย (ตื่นแล้วไม่ได้นอนต่อ) เวลาเท่าไหร่ …….
4. เมื่อเช้านี้ ท่านลุกจากเตียงเวลาเท่าไหร่ …….

5. ท่านรู้สึกว่าการนอนของท่านเป็นอย่างไร (วงกลมเลขที่หน้าข้อความที่ตรงกับท่าน)
    1. หลับไม่สนิทเลย
    2. หลับไม่สนิท
    3. หลับค่อนข้างไม่สนิท
    4. หลับปานกลางแต่ไม่ค่อยสนิท
    5. หลับปานกลางแต่ค่อนข้างสนิท
    6. หลับค่อนข้างสนิท
    7. หลับสนิท
    8. หลับสนิทมาก
6. ท่านตื่นกี่ครั้งเมื่อคืนนี้ (วงกลมเลขที่หน้าข้อความที่ตรงกับท่าน)
    0. ไม่ตื่นเลย
    1. ตื่น 1 ครั้ง
    2. ตื่น 2 ครั้ง
    3. ตื่น 3 ครั้ง
    4. ตื่น 4 ครั้ง
    5. ตื่น 5 ครั้ง
    6. ตื่น 6 ครั้ง
    7. ตื่นมากกว่า 6 ครั้ง
7. เมื่อคืนนี้ ท่านนอนกี่ชั่วโมง …… ชั่วโมง
8. เมื่อวานตอนกลางวัน ท่านนอนกี่ชั่วโมง …… ชั่วโมง

แบบสอบถามเกี่ยวกับการนอน (ต่อ)

(Sleep Questionnaire, 7.5.4, cont.)

9. เมื่อคืนนี้ ท่านรู้สึกว่าการนอนของท่านเป็นอย่างไร (วงกลมเลขที่หน้าข้อความที่ตรงกับท่าน)
    1. แย่มาก
    2. แย่
    3. ค่อนข้างแย่
    4. ค่อนข้างดี
    5. ดี
    6. ดีมาก
10. ท่านรู้สึกสมองปลอดโปร่งดีเพียงใดเมื่อตื่นขึ้นมาในตอนเช้า
(วงกลมเลขที่หน้าข้อความที่ตรงกับท่าน)
    1. ง่วงมาก
    2. ง่วงปานกลาง
    3. ง่วงเล็กน้อย
    4. ค่อนข้างจะไม่ง่วง
    5. ตื่นตัวดี
    6. ตื่นตัวเป็นอย่างมาก
11. ท่านรู้สึกพอใจการนอนของท่านเพียงใด (วงกลมเลขที่หน้าข้อความที่ตรงกับท่าน)
    1. ไม่พอใจเป็นอย่างยิ่ง
    2. ไม่พอใจ
    3. ค่อนข้างไม่พอใจ
    4. ค่อนข้างพอใจ
    5. พอใจมาก
12. ท่านมีปัญหาในลักษณะที่ตื่นเช้าเกินไปและไม่สามารถนอนต่อได้หรือไม่
(วงกลมเลขที่หน้าข้อความที่ตรงกับท่าน)
    1. ไม่มี
    2. มี
13. ท่านมีความยากลำบากในการเริ่มนอนเมื่อคืนหรือไม่
(วงกลมเลขที่หน้าข้อความที่ตรงกับท่าน)
    1. ไม่มีหรือแทบไม่มีเลย
    2. มีบ้าง
    3. มีมาก
    4. ยากลำบากอย่างยิ่ง
14. หลังจากเข้านอนแล้ว ท่านใช้เวลานานเท่าใดกว่าที่จะเริ่มหลับได้ .....นาที หรือ ..... ชั่วโมง

APPENDIX 3

McGregor, C., Srisurapanont, M., Jittiwutikarn, J., Laobhripatr, L., Wonttan, T., & White, J. M. (In press). *The nature and treatment of methamphetamine withdrawal.* Addiction (Accepted for publication, 16th March 2005). Electronic publication 15th July 2005. For publication in the journal – September 2005

The nature, time course and severity of methamphetamine withdrawal

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ABSTRACT

Aims To characterize the natural history of methamphetamine withdrawal during the first 3 weeks of abstinence.

Design Cross-sectional study with comparison group.

Setting A substance use treatment facility in Chiang Mai Province, Thailand.

Participants The sample comprised 21 in-patients undergoing treatment for methamphetamine dependence. Nine age- and sex-matched non-dependent individuals provided comparison data.

Measurements Instruments including: the Amphetamine Withdrawal Questionnaire, a modified version of the Cocaine Selective Severity Assessment, Clinical Global Impression scale and the St Mary's Hospital Sleep Questionnaire were completed daily for the first 3 weeks of abstinence.

Findings Methamphetamine withdrawal severity declined from a high initial peak within 24 hours of the last use of amphetamines reducing to near control levels by the end of the first week of abstinence (the acute phase). The acute phase of amphetamine withdrawal was characterized by increased sleeping and eating, a cluster of depression-related symptoms and less severely, anxiety and craving-related symptoms. Following the acute withdrawal phase most withdrawal symptoms remained stable and at low levels for the remaining 2 weeks of abstinence.

Conclusions This study has provided evidence of a methamphetamine withdrawal syndrome that can be categorized into two phases, the acute phase lasting 7–10 days during which overall symptom severity declined in a linear pattern from a high initial peak, and a subacute phase lasting at least a further 2 weeks.

KEYWORDS Abstinence, in-patient, methamphetamine, sleep, withdrawal.

INTRODUCTION

The problem of illicit psychostimulant use is now a global one. Internationally, the most widely abused illicit drug is cannabis followed, according to region, by amphetamine-type stimulants or cocaine [1]. Despite the widespread illicit use of amphetamines and the substantial problems associated with their use [2], until recently few users sought help from treatment agencies. The reluctance to access treatment may be due to a perception that treatment agencies and programmes have developed to meet the needs of opioid users and have little to offer methamphetamine users seeking to modify their drug use [3].

Failure to manage methamphetamine withdrawal symptoms during treatment may contribute to the high rates of relapse in the first days or weeks post-cessation [4]. An important first step in the development of effective treatment is the mapping of the time course and severity

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of methamphetamine withdrawal symptoms. This information would facilitate the timely administration of appropriate interventions aimed at specific symptoms.

Although the existence of an amphetamine dependence syndrome has been established [5–7], there is a paucity of evidence-based information on which to base effective treatments [8], particularly in comparison to other drugs of dependence. Amphetamine withdrawal has been studied extensively in animals [9]; however, the majority of human studies have been retrospective [10,11], they have used small sample numbers [12,13] or the subjects were withdrawing from multiple substances [14–17]. Two retrospective studies of amphetamine users identified a wide range of withdrawal symptoms [6,7]. Many of these symptoms were consistent with those experienced in opioid withdrawal. This may have been a function of the questionnaire used, the Severity of Amphetamine Dependence Questionnaire (SAmDQ), which is based on an opiate dependence questionnaire.

Only one study has examined systematically amphetamine withdrawal symptoms over time. Amineptine was compared to placebo in a randomized design [18]. In comparison to controls, the amineptine group showed significant reductions in three symptoms, fatigue, increased appetite and craving for sleep at the end of the first and second week of treatment. While these results were encouraging, amineptine has since been withdrawn due to reports of abuse. Withdrawal symptoms in this study were measured at only three time-points 1 week apart. Additionally, assessment time-points were determined by the time of admission for in-patient treatment rather than being anchored to the time of last amphetamine use.

Depressive symptoms, a core criterion for the diagnosis of cocaine or amphetamine withdrawal [19], are substantially higher in stimulant-dependent individuals than in the general community [20] and are commonly identified in treatment samples of amphetamine users [10,21]. In an early series of case studies, four 'moderate' amphetamine users all experienced depression that peaked at 48–72 hours following the last amphetamine dose [12]. Further, depression in some methamphetamine users may persist for several years after treatment even where substance use is reduced [22].

There are also clinical reports of an initial 'crash' period of around 3 days following the cessation of amphetamine use. The crash phase, during which the individual may sleep for much of the time, may be followed by a prolonged period of insomnia. Gossop and colleagues investigated sleep duration in hospitalized amphetamine users [23]. This study showed that hours of sleep for amphetamine users were greater than or similar to controls on nights 1–5 but that amphetamine users slept comparatively less on nights 6–20 when the study ended. These data do not provide support for clinical reports of a 'crash' following cessation of amphetamine use, rather an initial period of 'normal' sleep followed by a prolonged period (at least 15 days) of relative insomnia. Although this study yielded valuable information on the sleep patterns of amphetamine users in the initial 3 weeks of abstinence, no data on the intensity or frequency of amphetamine use were reported and no other withdrawal symptoms were measured.

The natural history of amphetamine withdrawal is still poorly understood, despite a small number of studies which have provided limited information on withdrawal symptoms over time [12,23,24]. The recent failure of an exhaustive review of the literature to find any studies describing the natural history of amphetamine withdrawal points to the need for empirical data in this area [25].

Aim

The aim of this study is to provide quantitative information on the natural history of amphetamine withdrawal through the identification and systematic measurement of signs and symptoms occurring during the first 3 weeks of abstinence from amphetamines.

METHOD

The study was conducted at the Northern Drug Dependence Treatment Centre (NDDTC), a substance use treatment facility in Chiang Mai Province, Thailand. Consecutive admissions to NDDTC for treatment of methamphetamine dependence were assessed for consistency with the selection criteria. In-patient participants included in the sample were aged between 18 and 45 years, had urine positive for amphetamines at admission and fulfilled the *Diagnostic and Statistical Manual* version IV (DSM-IV) criteria for amphetamine dependence [19]. Patients with an acute medical or psychiatric illness requiring psychotropic medication or who fulfilled the DSM-IV diagnostic criteria for other substance dependence, except nicotine, were excluded. To confirm abstinence from amphetamines, a urine drug screen was conducted at weekly intervals. Urine was analysed by cloned enzyme donor immunoassay using a cut-off level of 1000 ng/ml.

To provide comparison data, a group of nine age- and sex-matched (non-dependent) healthy individuals from the same geographical area completed the same withdrawal and sleep questionnaires over the same time period. Five comparison group members were recruited from among staff at the clinic (e.g. security staff, clerical officers). The remaining four were medical students

studying at Chiang Mai University. Suitable comparison group members were approached individually by a member of the research team and invited to participate. There were no refusals and no compensation was offered for study participation.

Data were collected between October and December 2002. Participants gave written informed consent prior to study entry and there was no compensation for study participation. None of the patients were mandated for treatment and a family member referred almost all for treatment. Of the 21 in-patient participants, two received 5 mg of diazepam on one occasion and one 10 mg of diazepam on one occasion for insomnia. No other medications were administered. All in-patient participants received a B-complex vitamin daily and took part in the group and occupational therapy programme that is a normal part of in-patient treatment for methamphetamine dependence and withdrawal at NDDTC. Patients undergoing treatment for methamphetamine withdrawal were housed in two large open wards that could accommodate up to 65 people. Although the campus was secure and visitors monitored, patients had access to gardens and outdoor recreation and dining areas. Ethics approval for the study was received from the Ministry of Public Health in Thailand and the Ethics Committee of the University of Adelaide, Australia.

Once informed consent was obtained, a structured interview assessing demographic data, drug use and treatment history was administered. The Severity of Dependence Scale [26] was completed on admission to measure severity of dependence on amphetamines.

Two instruments were used to measure methamphetamine withdrawal. The Amphetamine Withdrawal Questionnaire (AWQ) [24], based on the DSM-IV criteria for amphetamine withdrawal, is a 10-item, self-completed instrument designed to measure the domains of craving, dysphoria, anhedonia, increased appetite, fatigue, agitation, anxiety, increased sleep, vivid, unpleasant dreams and slowing of movement over the previous 24 hours. Items were scored on a four-point Likert-type scale, from 0 (not at all) to 4 (very much).

A modified version of the Cocaine Selective Severity Assessment scale (CSSA) [27] was used to provide information on a broader range of symptoms than that assessed by the AWQ. The interviewer-administered CSSA is a reliable and valid measure of cocaine abstinence symptoms. Given that the DSM-IV lists the same symptoms for cocaine and amphetamine withdrawal, it was considered that this scale could be modified for use in amphetamine withdrawal. Modification of the CSSA involved replacing 'cocaine' with 'amphetamine' to produce the Amphetamine Selective Severity Assessment scale (ASSA). Domains assessed by this 18-item scale included those addressed by the AWQ (with the exception of psychomotor retardation, agitation and vivid dreams) plus decreased appetite and sleep, craving for carbohydrate (including craving for sweet food and/or drinks), bradycardia, concentration, irritability, paranoid and suicidal ideation, tension and inactivity (range = 0–7, higher scores indicated greater severity).

The St Mary's Hospital Sleep Questionnaire (SMHSQ) [28] was administered daily to assess sleep characteristics on the previous night. This self-report questionnaire has shown satisfactory reliability for use with psychiatric and medical in-patients [28,29]. Domains assessed by the SMHSQ include hours of night and daytime sleep, sleep depth, quality of sleep, sleep satisfaction, clearheadedness on arising, number of awakenings during the night and sleep latency.

Depression was measured via the Beck Depression Inventory ll (BDI) [30], a widely used measure of current depression. The BDI was administered on admission and at the beginning of weeks 2 and 3 of in-patient treatment.

To provide an observer-rated measure of withdrawal, nursing staff completed the Clinical Global Impressions (CGI) scale daily [31]. Blood pressure and radial pulse were recorded daily for each in-patient participant.

Data were collected for 21 days (the standard duration of treatment for acute amphetamine withdrawal at the time the study was conducted) following the last use of amphetamines. Measures (i.e. ASSA, AWQ, SMHSQ and CGI) were completed once daily. Data were collated according to the time since last use; that is, data collected within 24 hours of the last use of methamphetamine was designated 'day 0'; data collected 24–48 hours following the last use of methamphetamine was called 'day 1', etc.

Analyses

Changes over time and differences between groups were measured using a linear mixed model ANOVA with day of abstinence (for subjects) or data collection (for the comparison group) as the fixed factor. Pearson's correlation coefficient was used to identify relationships between normally distributed continuous variables. Alpha level was set at 0.05 and confidence intervals of 95% used. All analyses were conducted using SPSS version 11.5 for Windows.

RESULTS

Of 72 patients who were admitted for treatment of amphetamine dependence during the study period, three declined to participate, 11 were currently experiencing auditory hallucinations, eight had concurrent dependence on alcohol, 14 were under 18 years of age and 15 provided a urine sample negative for amphetamines. The

Table 1 Characteristics of the study sample.

Characteristics	*(n = 21)*
Age; mean years (range)	21.4 (18–28)
Male *n* (%)	20 (95)
Unemployed *n* (%)	16 (76)
Unmarried *n* (%)	20 (95)
Education	
Secondary *n (%)*	14 (67)
Vocational/trade school *n (%)*	6 (29)
University *n (%)*	1 (5)
Age first used amphetamine; mean years (range)	17 (11–25)
Length of regular amphetamine use; mean years (range)	4 (1–15)
Amount (tablets) used per day in the previous month, median (range)	2.5 (1–8)
Amount (Thai Baht*) spent per day on methamphetamines, median (range)	200 (70.00–850.0)
Previous treatment for amphetamine dependence, *n* (%)	6 (29)
Severity of Dependence Scale, mean (range)	6.2 (2–11)

*At the time of the study exchanges rates were: Thai Baht 42.44 = US$1 and Thai Baht 41.82 = €1.

final sample comprised 21 in-patient participants, five of whom provided data on day 0; 12 on day 1; 18 on days 2 and 3; 19 on days 4–9; 18 on days 10–14; 16 on days 15–17 and 15 on days 18–20. Table 1 shows the characteristics of the study sample.

Only one female participated in the study and few had a partner at the time of entering treatment. The majority had completed secondary education and were currently unemployed. For all in-patient participants, amphetamines were administered by heating methamphetamine tablets (usually on a piece of foil) and then inhaling the fumes. Of the 21 in-patients, 17 (81%) had a clinically significant dependence on amphetamines [32].

Treatment retention

The mean number of days on which in-patient participants remained in the study was 17.9 (SEM = 1.7) range: 3–21 days. Of the 21 in-patients enrolled in the study, four left the clinic prior to completing treatment, two developed auditory hallucinations requiring acute treatment and were withdrawn from the study and 15 completed methamphetamine withdrawal treatment.

Amphetamine withdrawal: summary scores

Figure 1 shows the pattern of withdrawal symptoms measured by the three withdrawal instruments, the self-completed AWQ (panel 1), the interviewer-administered ASSA (panel 2) and the observer-rated CGI (panel 3). For in-patients, AWQ scores reduced significantly over the first 3 weeks of abstinence ($F = 3.5$, df 20,475, $P < 0.001$). There were significant differences in AWQ scores between in-patients and the comparison group ($F = 144.6$, df 1,475, $P < 0.001$) and a significant interaction effect of time (day of abstinence) and group ($F = 2.4$, df 20,475, $P = 0.003$).

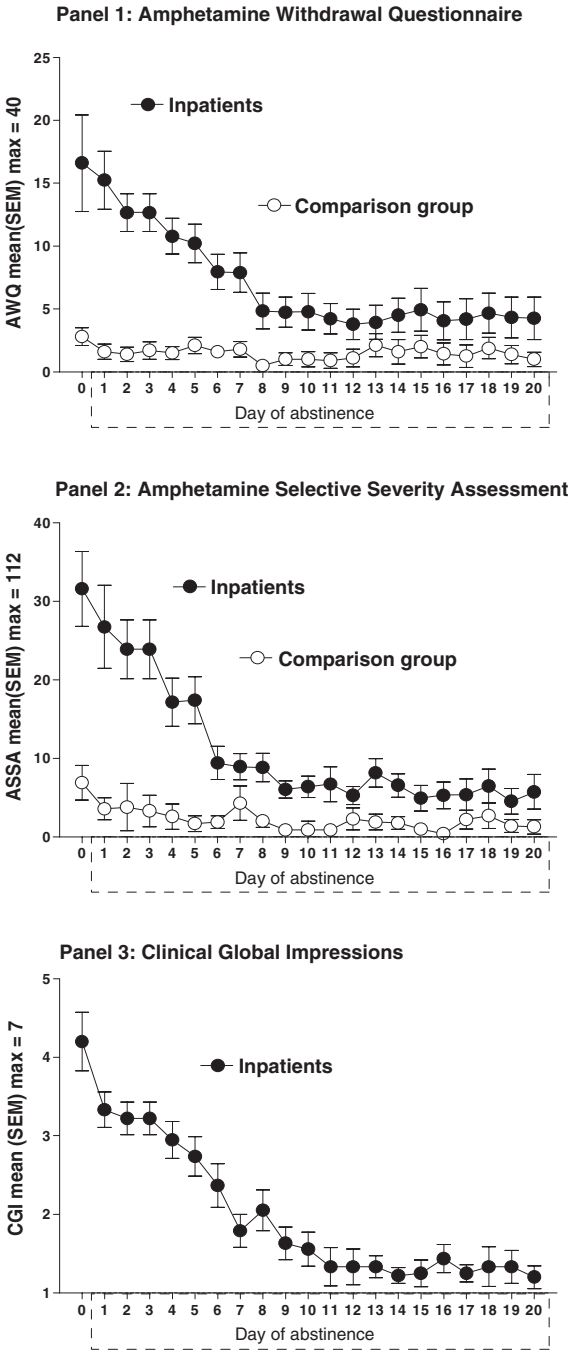

Figure 1 Amphetamine withdrawal symptoms

Similarly, there was a significant reduction in withdrawal discomfort as measured by the ASSA over the first 3 weeks of abstinence ($F = 5.7$, df 20,476, $P < 0.001$). Significant differences between in-patients and the comparison group were revealed ($F = 117.6$, df 1,476, $P < 0.001$), as was a significant interaction effect of time and group ($F = 3.8$, df 20,476, $P < 0.001$). Reliability analysis (Cronbach's alpha) of the modified CSSA showed satisfactory internal consistency (0.80) that compared favourably with reliability analysis for the AWQ (0.90).

The pattern of CGI scores was similar to that shown for the AWQ and the ASSA, reducing significantly over the first 3 weeks of abstinence ($F = 16.9$, df 20,306, $P < 0.001$).

Positive correlations between the self-completed AWQ and interviewer-administered ASSA ($r = 0.60$, $P < 0.01$) indicated good agreement between these two scales, as did correlations between the observer-rated CGI and AWQ ($r = 0.55$, $P < 0.01$) and ASSA ($r = 0.64$, $P < 0.01$).

Amphetamine withdrawal: item scores

For in-patients undergoing methamphetamine withdrawal, all 10 AWQ items reduced significantly over the study period. Figure 2, panel 1 shows the pattern of AWQ items relating to increased sleep (mean = 1.38, SEM = 0.07), appetite (mean = 1.42, SEM = 0.07) and vivid, unpleasant dreams (mean = 0.36, SEM = 0.04). Figure 2, panel 2 shows the pattern of AWQ items relating to fatigue (mean = 0.62, SEM = 0.05), anhedonia (mean = 0.65, SEM = 0.05), motor retardation (mean = 0.48, SEM = 0.04) and dysphoria (mean = 0.60, SEM = 0.04). AWQ items: anxiety (mean = 0.53, SEM = 0.04), agitation (mean = 0.42, SEM = 0.04) and craving (mean = 0.35, SEM = 0.04) are shown in Fig. 2, panel 3.

Twelve of the 18 ASSA items reduced significantly over the first 3 weeks of abstinence. Figure 2, panel 4 shows the pattern of six of the ASSA items that changed: symptoms of inactivity (mean = 1.02, SEM = 0.11), fatigue (mean = 0.56, SEM = 0.08), craving frequency (mean = 0.58, SEM = 0.04), craving intensity (mean = 0.60, SEM = 0.07), hypersomnia (mean = 0.74, SEM = 0.10) and craving for carbohydrates (mean = 1.69, SEM = 0.10).

Figure 2, panel 5 shows a further six of the ASSA items that showed significant change, including anhedonia (mean = 0.55, SEM = 0.08), tension (mean = 0.47, SEM = 0.06), poor concentration (mean = 0.35, SEM = 0.04), bradycardia (mean = 0.99, SEM = 0.07), hyposomnia (mean = 0.43, SEM = 0.07) and depression (mean = 0.39, SEM = 0.06). Figure 2, panel 6 shows the six ASSA items that did not change significantly. These included hyperphagia (mean = 1.11, SEM = 0.10), hypophagia (mean = 0.14, SEM = 0.04), irritability (mean = 0.40, SEM = 0.06), anxiety (mean = 0.46, SEM = 0.08), paranoid ideation (mean = 0.02, SEM = 0.01) and suicidal ideation (mean = 0.35, SEM = 0.04).

Predictors of withdrawal severity

Using the total AWQ score as the dependent variable, linear regression analysis was performed to identify predictors of withdrawal severity during the first 3 weeks of abstinence. Using the standard method, three continuous variables were entered into the regression model: age, length of methamphetamine use and number of DSM-IV amphetamine dependence criteria met. Although the model was significant ($F = 29$, df 3,346, $P < 0.001$), only 21% of the variance in withdrawal scores was predicted. Multi-collinearity was satisfactory: the highest correlation between independent variables was $r = 0.27$ between age and DSM-IV criteria. All three independent variables were significant positive predictors of withdrawal severity: years of age ($\beta = 0.33$, $P < 0.001$), years of methamphetamine use ($\beta = 0.27$, $P < 0.001$) and number of DSM-IV amphetamine dependence criteria met ($\beta = 0.11$, $P = 0.03$).

Radial pulse and blood pressure did not change significantly, staying within normal limits for the duration of the study. However, when pulse rate was changed from a continuous to a categorical variable for the ASSA scale item 'bradycardia', a significant change was revealed (see Fig. 2, panel 5).

Sleep

For in-patient participants, total hours of sleep (over the 24-hour period) changed significantly over the study period, peaking on the fifth day of abstinence ($F = 3.12$, df 20,310, $P < 0.001$, Fig. 3: panel 1). For the comparison group, total hours of sleep (mean = 7.4, SEM = 0.14, Fig. 3: panel 2) fell within the range for normal healthy adults [33], as did the sleep onset latency in minutes (mean = 20.0, SEM = 0.4, Fig. 3: panel 3) [34].

Similarly, all the in-patients' other sleep-related variables, including hours of daytime sleep ($F = 3.21$, df 20,310, $P < 0.001$, Fig. 3: panel 1), hours of night-time sleep ($F = 1.85$, df 20,310, $P = 0.015$, Fig. 3: panel 1), sleep latency ($F = 1.88$, df 20,306, $P = 0.014$, Fig. 3: panel 3), number of awakenings during the night ($F = 2.39$, df 20,309, $P < 0.001$, Fig. 3: panel 4), quality of sleep ($F = 2.11$, df 20,310, $P = 0.004$, Fig. 3: panel 5), clearheadedness on awakening ($F = 3.40$, df 20,309, $P < 0.001$, Fig. 3: panel 6), satisfaction with sleep

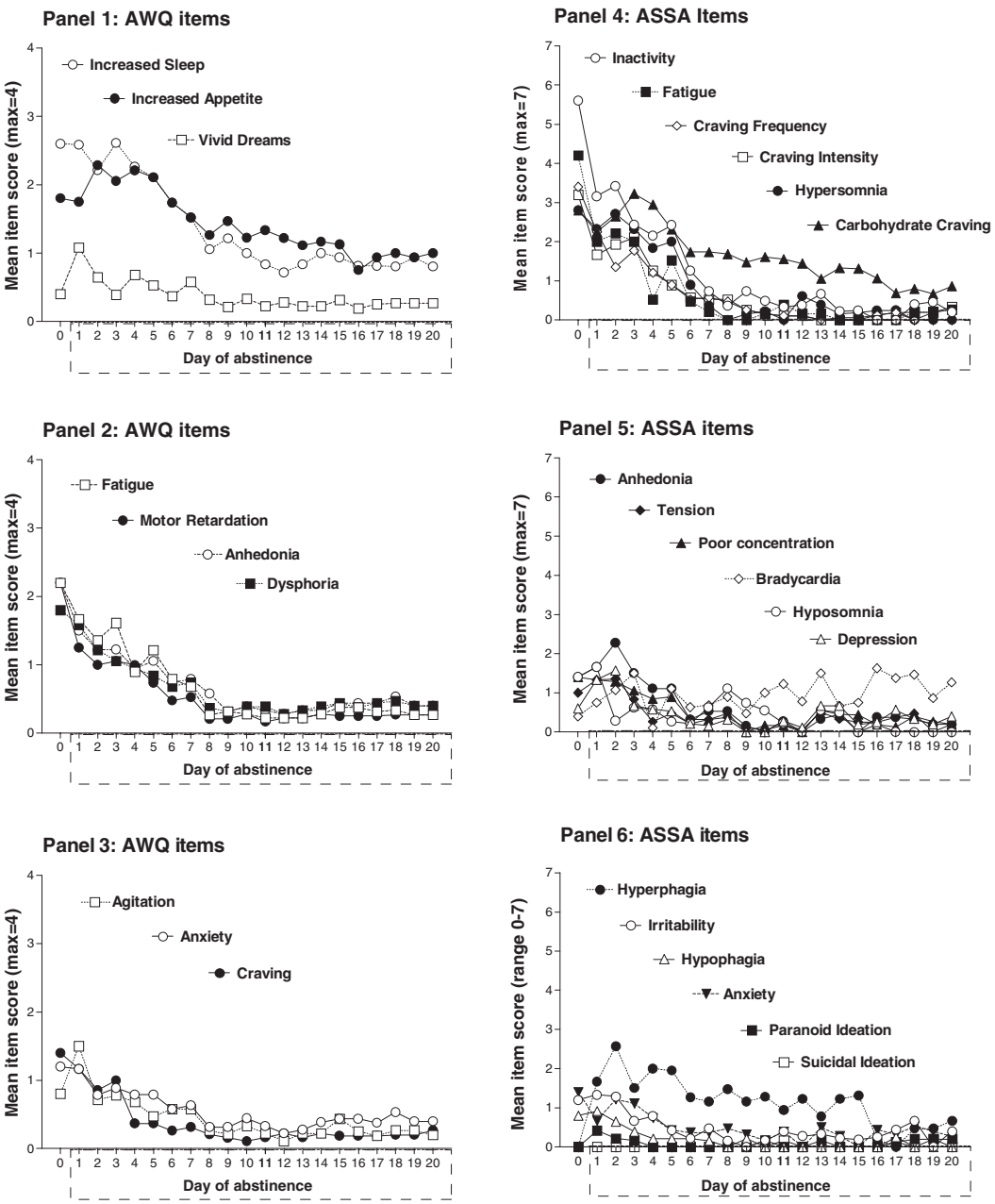

Figure 2 Distribution of item scores

($F = 1.92$, df 20,310, $P < 0.01$, Fig. 3: panel 7) and depth of sleep ($F = 1.70$, df 20,310, $P = 0.032$, Fig. 3: panel 8) changed significantly. All sleep variables were significantly different to the comparison group with the exception of satisfaction with sleep.

Predictors of sleep patterns during withdrawal

Using the total hours of sleep during each 24-hour period as the dependent variable, linear regression analysis was performed to identify predictors of sleep patterns during the first three weeks of abstinence. Three continuous variables were entered into the regression model using the standard method: methamphetamine cost per day during the month prior to admission, years of regular methamphetamine use and number of DSM-IV amphetamine dependence criteria met. While the model was significant ($F = 8.4$, df 3,346 $P < 0.001$), only 26% of the variance in hours of sleep was predicted. Multicollinearity was satisfactory: the highest correlation between independent variables was $r = 0.4$ between methamphetamine cost per day and DSM-IV criteria. Two independent variables were significant positive predictors of sleep: methamphetamine cost ($\beta = 0.23$,

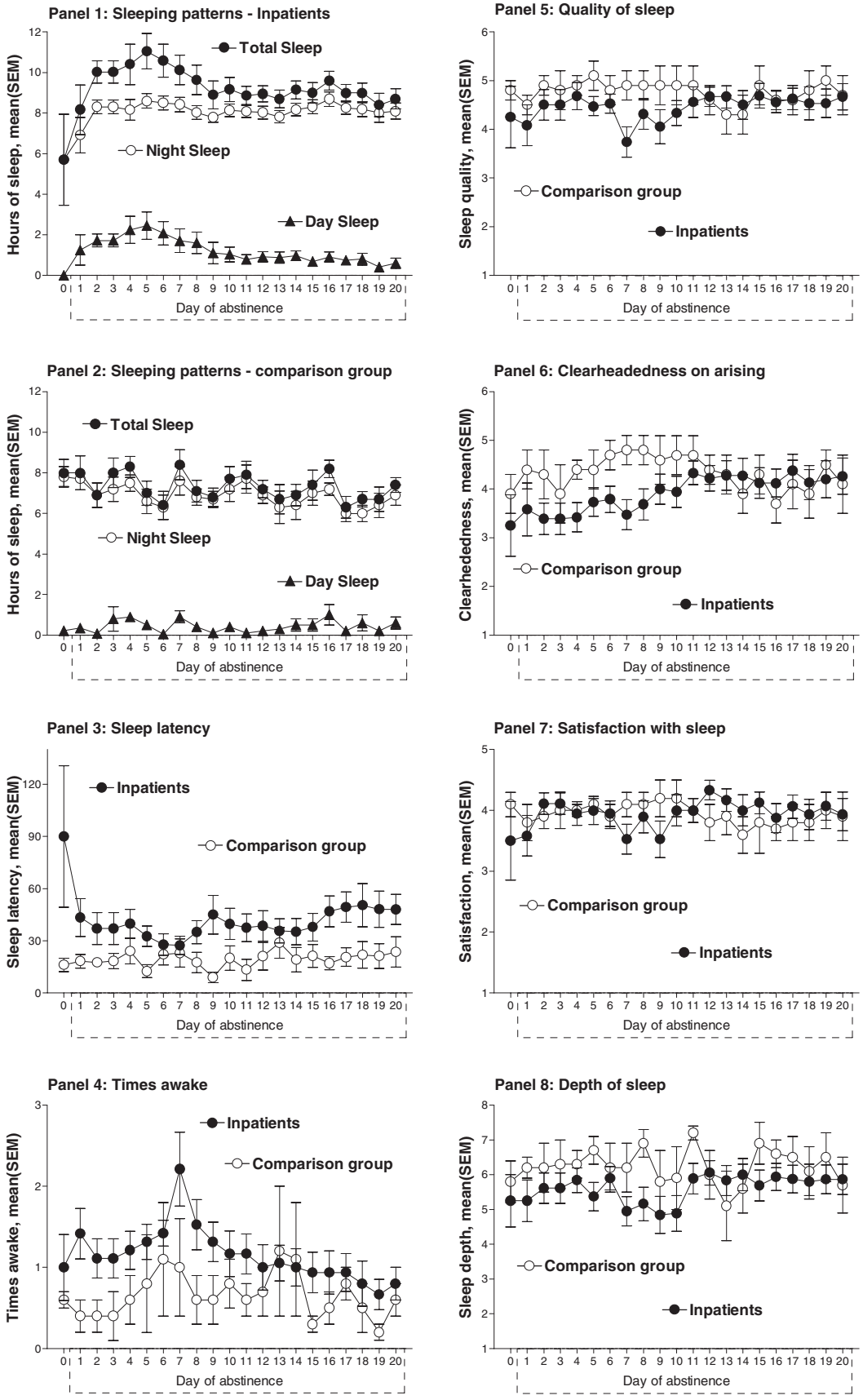

Figure 3 Sleep patterns

$P < 0.001$) and years of use ($\beta = 0.11$, $P = 0.025$), while the number of DSM-IV criteria was negatively related to total hours of sleep during withdrawal ($\beta = -0.16$, $P = 0.004$).

Depression

On average, admission BDI scores fell into the moderate category (mean = 23.6, SEM = 2.2). At the beginning of weeks 2 (mean = 12.1, SEM = 3.0) and 3 of in-patient treatment (mean = 9.8, SEM = 3.0), BDI scores had reduced on average to the minimal depression category. This reduction in BDI scores over the first 3 weeks of abstinence was significant ($F = 7.6$, df 2,54, $P < 0.01$). On admission, 14% of patients each fell into the minimal and mild depression categories while 48% and 24% fell into the moderate and severe categories, respectively. By the beginning of the third week of abstinence, almost two-thirds (65%) had minimal depression while 12% each fell into the mild, moderate and severe BDI depression categories.

DISCUSSION

In this study, we quantified the natural history of methamphetamine withdrawal during the first 3 weeks of abstinence. Overall symptom severity as measured by self-report, interviewer-administered and observer-rated instruments declined from a high initial peak within 24 hours of the last use of amphetamines, reducing to near comparison group levels by about the end of the first week of abstinence. Two phases were identified: an acute phase that occurred during the first week, and a subacute phase lasting for at least 2 further weeks. Withdrawal severity was greater in those in-patients who were older, more dependent and who had been using methamphetamine longer.

The methamphetamine withdrawal syndrome was characterized principally by increases in sleeping and appetite. A cluster of depression-related symptoms including inactivity, fatigue, anhedonia and dysphoria were marked during the first week, but had largely resolved by the end of the acute phase of abstinence. Less severe symptoms of withdrawal included anxiety, motor retardation, agitation, vivid dreams, craving, poor concentration, irritability and tension. Of the withdrawal symptoms measured, most had reduced towards comparison group levels by the end of the first week of abstinence. Exceptions included the sleep and appetite-related symptoms that persisted through weeks 2 and 3 of abstinence (the subacute phase). The relative increase in bradycardia during weeks 2 and 3 possibly reflected a rebound phenomenon in cardiac function following cessation of acute withdrawal. Levels of paranoid and suicidal ideation remained low throughout the first 3 weeks of abstinence.

Our results supported clinical reports of a 'crash' period characterized by relative oversleeping during the first week of abstinence. The increase in total hours of sleep between pre-admission and the peak at day 5 when participants slept for around 11 hours was striking. However, there was no insomnia following the 'crash'. Instead, hours of sleep gradually declined from their peak until the ninth day, after which total hours of sleep remained stable at around 9 hours for the rest of the monitoring period. However, the quality and depth of sleep in patients undergoing withdrawal treatment decreased at the end of the acute phase and did not return to previous levels until the third week of abstinence. Therefore, while in-patients had a greater total amount of sleep, in contrast to the comparison group their sleep patterns were of a poorer quality as they took significantly longer to fall asleep and had a greater number of awakenings during the night. Additionally, clearheadedness on arising did not reach comparison group levels until about the middle of the second week of abstinence.

Our findings contrast with an earlier investigation into sleep duration in hospitalized amphetamine users in the United Kingdom [23]. In this study, Gossop and colleagues found that in comparison to controls, the number of hours of night-time sleep was significantly less in the amphetamine users over the 20-day study period. While hours of sleep for amphetamine users were greater than or similar to controls on nights 1–5 of admission, amphetamine users slept less than controls on nights 6–20 when the UK study ended. These authors suggested that withdrawal insomnia may be dose-related. Our finding that the cost of methamphetamine used in the month prior to admission and the length of regular use were significant positive predictors of sleep during withdrawal supported this contention.

The modified CSSA [27] showed satisfactory reliability when used to measure methamphetamine withdrawal and was significantly related to the established scale, the AWQ [24]. Importantly, the modified CSSA provided useful information on additional symptoms of amphetamine withdrawal, particularly items measuring concentration, tension and inactivity. Future studies should investigate the psychometric properties of this scale in a larger sample of amphetamine users.

Unlike alcohol [35] or opioid withdrawal [36], there were no directly measurable amphetamine withdrawal signs as objective measures such as pulse and blood pressure remained within normal limits for the duration of the study period. However, the moderately strong relationship between subjective withdrawal symptoms and the observer-rated evaluation of withdrawal severity indi-

cated that experienced clinicians are able to provide a reasonably accurate and consistent judgement as to the current level of discomfort experienced by patients in amphetamine withdrawal. Additionally, the number of hours of sleep provides an observable indication of the time course and severity of withdrawal.

Although the in-patient participants in this study were moderately depressed on admission for treatment, depression had resolved after one week of abstinence. These findings do not support previous studies showing prolonged depression following cessation of dependent amphetamine use [12,22].

CONCLUSION

This study has provided evidence of a methamphetamine withdrawal syndrome that can be categorized into two phases: an acute phase lasting 7–10 days following cessation of dependent use during which overall symptom severity declined in a linear pattern from a high initial peak. This was followed by a subacute phase lasting at least 2 weeks following the end of the acute phase during which most withdrawal symptoms remained relatively mild and stable. During the acute phase, in-patients had increased sleeping and eating, depression-related symptoms and, less severely, anxiety and craving-related symptoms. Oversleeping was marked during the acute phase and despite a reduction in sleep quality, was not followed by a period of insomnia during the subacute phase. Older, more dependent patients who had been using methamphetamine longer had a more severe withdrawal course.

Acknowledgements

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Appendix 4: Amphetamine Cessation Symptom Assessment (ACSA) scale

APPENDIX 4: AMPHETAMINE CESSATION SYMPTOM ASSESSMENT (ACSA)

QUESTIONS REFER TO THE PAST 24 HOURS ONLY		*PLEASE CIRCLE ONE RESPONSE TO EACH QUESTION*				
1	**Have you had difficulty concentrating? (eg on reading, conversation, tasks, or making plans)**	*Not at all*	*A little*	*Moderately*	*Quite a lot*	*Extremely*
2	**Have you been sleeping (or wanting to sleep) a lot?**	*Not at all*	*A little*	*Moderately*	*Quite a lot*	*Extremely*
3	**Have you been tense?**	*Not at all*	*A little*	*Moderately*	*Quite a lot*	*Extremely*
4	**Have you had vivid, unpleasant dreams?**	*Not at all*	*A little*	*Moderately*	*Quite a lot*	*Extremely*
5	**Have you felt irritable?**	*Not at all*	*A little*	*Moderately*	*Quite a lot*	*Extremely*
6	**Have you been tired?**	*Not at all*	*A little*	*Moderately*	*Quite a lot*	*Extremely*
7	**Have you been agitated?**	*Not at all*	*A little*	*Moderately*	*Quite a lot*	*Extremely*
8	**Have you felt that life is not worth living?**	*Not at all*	*A little*	*Moderately*	*Quite a lot*	*Extremely*
9	**How active have you been compared to your usual level of activity?**	*Usual level of activity*	*A little less active*	*Moderately less active*	*Quite a lot less active*	*No activities at all*
10	**Have you felt anxious?**	*Not at all*	*A little*	*Moderately*	*Quite a lot*	*Extremely*
11	**Have you lost interest in things or no longer take pleasure in them?**	*Not at all*	*A little*	*Moderately*	*Quite a lot*	*Extremely*
12	**Have you found it difficult to trust other people?**	*Not at all*	*A little*	*Moderately*	*Quite a lot*	*Extremely*
13	**Have you felt sad?**	*Not at all*	*A little*	*Moderately*	*Quite a lot*	*Extremely*
14	**Have you felt as if your movements were slow?**	*Not at all*	*A little*	*Moderately*	*Quite a lot*	*Extremely*
15	**In the past 24 hours, how much of the TIME have you been craving for amphetamines?**	*None of the time*	*A little of the time*	*Moderate amount of the time*	*Quite a lot of the time*	*All of the time*
16	**How STRONG has your craving for amphetamines been?**	*No craving*	*A little*	*Moderately*	*Quite a lot*	*Extremely*
	Scoring guide	0	1	2	3	4

McGregor, C., Srisurapanont, M., Mitchell, A., & White, J. M. (2004). Reliability and validity of the Amphetamine Cessation Symptom Assessment (ACSA) scale. College on Problems of Drug Dependence (CPDD), 66th Annual Scientific Meeting, San Juan, Puerto Rico.

Appendix 5: Information sheet and Consent form

THE ROYAL ADELAIDE HOSPITAL RESEARCH ETHICS COMMITTEE

CONSENT FORM

1. I, ……
(please print name)

consent to take part in the research project entitled: *PHARMACOTHERAPIES FOR AMPHETAMINE WITHDRAWAL: OPEN LABEL PILOT STUDY OF MIRTAZAPINE*

2. I acknowledge that I have read the attached Information Sheet entitled: *PHARMACOTHERAPIES FOR AMPHETAMINE WITHDRAWAL: OPEN LABEL PILOT STUDY OF MIRTAZAPINE*

3. I have had the study, so far as it affects me, fully explained to my satisfaction by the research worker. My consent is given freely.

4. Although I understand that the purpose of this research project is to improve the quality of medical care, it has also been explained that my involvement may not be of any benefit to me.

5. I have been given the opportunity to have a member of my family or a friend present while the project was explained to me.

6. I have been informed that, while information gained during the study may be published, I will not be identified and my personal results will not be divulged.

7. I understand that I am free to withdraw from the project at any time and that this will not affect my medical care, now or in the future.

8. I am aware that I should retain a copy of this Consent Form, when completed, and the attached Information Sheet.

9. I understand that the researchers will require access to my medical records to obtain information on my drug use and treatment history.

……..
(signature) *(date)*

WITNESS
I have described to……..
(name of participant)

the nature of the procedures to be carried out. In my opinion she/he understood the explanation.

Status in Project**:** …… Name: ……

……..
(signature) *(date)*

ROYAL ADELAIDE HOSPITAL & THE DRUG AND ALCOHOL SERVICES COUNCIL

PHARMACOTHERAPIES FOR AMPHETAMINE WITHDRAWAL: OPEN LABEL PILOT STUDY OF MIRTAZAPINE

INFORMATION SHEET

You are invited to take part in a research study to evaluate the effect of **mirtazapine** (an antidepressant) on symptoms which people experience when they stop taking amphetamines. There is some evidence to suggest that **mirtazapine** may help to ease some of the symptoms experienced in the first week of amphetamine withdrawal. To assess whether this medication is helpful in amphetamine withdrawal we are asking patients to take part in a study where **mirtazapine** will be given during the early withdrawal period. If you decide to take part in this study you will be given **mirtazapine** 15 mgs on the first day of drug treatment. The dose will then be increased to a maximum of 60 mgs per day. Dose increases of **mirtazapine** will be gradual to minimise the possibility of side effects associated with commencement of therapy. On the final day of **mirtazapine** treatment you will be given a reduced dose of 30mg to minimise any effects of stopping this medication.

Possible side effects of **mirtazapine** include: increased appetite; weight gain; oedema (swelling); dizziness; headache; drowsiness; bone marrow depression; rash; gastrointestinal upset; constipation; dryness of mouth; abdominal pain; abnormal dreams; dizziness or fainting when getting up suddenly from a lying or sitting position; increased need to urinate; increased sensitivity to touch; increased thirst; muscle pain; nausea; sense of constant movement of self or surroundings; trembling or shaking; vomiting; weakness; fever; chills; sore throat; sores in the mouth; drowsiness; trouble in thinking; decreased or increased movement; mood or mental changes; abnormal thinking; agitation; anxiety; confusion; feelings of not caring; shortness of breath; skin rash; swelling; decreased sexual ability; menstrual pain; missing periods; feelings of being outside the body or hallucinations. *It is important that you tell one of the clinical staff if you experience these or other symptoms. Mirtazapine may be stopped if these or other symptoms occur.*

If you agree to take part in this study, you will be asked to complete five questionnaires on each day you are in the clinic. This will take about 10 to 20 minutes every day. These questionnaires will assess any withdrawal symptoms you may experience as well as your general well being, the amount and quality of your sleep in the previous 24 hours and any other symptoms you may experience.

Because your substance use before coming into the clinic may influence your withdrawal symptoms, we will need information on this. We will also need information on your treatment history and any medication you may be given during your inpatient stay. We will require your permission to access this information from your medical records.

It is important to be aware that if you take part in this study you may not benefit directly from your participation. All of the information collected during this study will be held in the strictest confidence. Should you agree to take part in the study you will be given a study number. This number will appear on all your questionnaires but you will not be identified personally on any study documentation. While you will be required to sign a form giving your consent to participate in the study, this form will not be kept with your other study documents. Your decision to participate in this study is entirely voluntary, and you may withdraw from the

project at any time. The study is anonymous, your name or any other identifying information is not needed. Your involvement in this study, or your voluntary withdrawal from it at any time, will not affect your eligibility for any clinical or treatment services at present or in the future.

If you require further information about the study, you may contact Professor Jason White, Chair of Addiction Studies, Department of Clinical and Experimental Pharmacology, University of Adelaide, South Australia 5005. Telephone, 8303 5987. If you wish to discuss aspects of the study with someone not directly involved you may also contact the Chairman, Research Ethics Committee, Royal Adelaide Hospital on 8222 4139.

Research workers initials and date	Participants initials and date

THE ROYAL ADELAIDE HOSPITAL RESEARCH ETHICS COMMITTEE

CONSENT FORM

1. I, ……
(please print name)

consent to take part in the research project entitled: *PHARMACOTHERAPIES FOR AMPHETAMINE WITHDRAWAL: OPEN LABEL PILOT STUDY OF MODAFINIL*

2. I acknowledge that I have read the attached Information Sheet entitled: *PHARMACOTHERAPIES FOR AMPHETAMINE WITHDRAWAL: OPEN LABEL PILOT STUDY OF MODAFINIL*

3. I have had the study, so far as it affects me, fully explained to my satisfaction by the research worker. My consent is given freely.

4. Although I understand that the purpose of this research project is to improve the quality of medical care, it has also been explained that my involvement may not be of any benefit to me.

5. I have been given the opportunity to have a member of my family or a friend present while the project was explained to me.

6. I have been informed that, while information gained during the study may be published, I will not be identified and my personal results will not be divulged.

7. I understand that I am free to withdraw from the project at any time and that this will not affect my medical care, now or in the future.

8. I am aware that I should retain a copy of this Consent Form, when completed, and the attached Information Sheet.

9. I understand that the researchers will require access to my medical records to obtain information on my drug use and treatment history.

……..
(signature) *(date)*

WITNESS
I have described to……..
(name of participant)

the nature of the procedures to be carried out. In my opinion she/he understood the explanation.

Status in Project**:** …… Name: ……

……..
(signature) *(date)*

ROYAL ADELAIDE HOSPITAL & THE DRUG AND ALCOHOL SERVICES COUNCIL

PHARMACOTHERAPIES FOR AMPHETAMINE WITHDRAWAL: OPEN LABEL PILOT STUDY OF MODAFINIL

INFORMATION SHEET

You are invited to take part in a research study to evaluate the effect of **modafinil** on symptoms of amphetamine withdrawal. **Modafinil** is used to improve wakefulness in patients with excessive daytime sleepiness associated with narcolepsy. There is some evidence to suggest that **modafinil** may help to ease some of the symptoms experienced in the first week of amphetamine withdrawal. To assess whether this medication is helpful in amphetamine withdrawal we are asking patients to take part in a study where **modafinil** will be given during the early withdrawal period. If you decide to take part in this study you will be given 200mg of **modafinil** twice a day (a total of 400mgs a day) during the early inpatient withdrawal period. On the final day of **modafinil** treatment you will be given a reduced dose of 200mg to minimise any effects of stopping this medication.

The effectiveness of oral contraceptives may be reduced while you are taking **modafinil**. If you are currently taking oral contraceptives, it is important that you use another or an additional method during treatment and for one month after finishing treatment with **modafinil**.

Possible side effects of **Modafinil** include: headache; infection; nausea; decreased appetite; diarrhoea; chills; dry mouth; runny nose; sore throat; nervousness; anxiety; dizziness; insomnia; depression; numbness or tingling; allergic reaction (difficulty breathing; closing of the throat; swelling of the lips, tongue, or face; or hives); irregular heartbeats; low or high blood pressure; shortness of breath; rhinitis (runny nose) or pharyngitis (sore throat). **Modafinil** may be habit forming. *It is important that you tell one of the clinical staff if you experience these or other symptoms.* ***Modafinil*** *may be reduced or stopped if these or other symptoms occur.*

If you agree to take part in this study, you will be asked to complete five questionnaires on each day you are in the clinic. This will take about 10 to 20 minutes every day. These questionnaires will assess any withdrawal symptoms you may experience as well as your general well being, the amount and quality of your sleep in the previous 24 hours and any other symptoms you may experience.

Because your substance use before coming into the clinic may influence your withdrawal symptoms, we will need information on this. We will also need information on your treatment history and any medication you may be given during your inpatient stay. We will require your permission to access this information from your medical records.

It is important to be aware that if you take part in this study you may not benefit directly from your participation. All of the information collected during this study will be held in the strictest confidence. Should you agree to take part in the study you will be given a study number. This number will appear on all your questionnaires but you will not be identified personally on any study documentation. While you will be required to

sign a form giving your consent to participate in the study, this form will not be kept with your other study documents. Your decision to participate in this study is entirely voluntary, and you may withdraw from the project at any time. The study is anonymous, your name or any other identifying information is not needed. Your involvement in this study, or your voluntary withdrawal from it at any time, will not affect your eligibility for any clinical or treatment services at present or in the future.

If you require further information about the study, you may contact Professor Jason White, Chair of Addiction Studies, Department of Clinical and Experimental Pharmacology, University of Adelaide, South Australia 5005. Telephone, 8303 5987. If you wish to discuss aspects of the study with someone not directly involved you may also contact the Chairman, Research Ethics Committee, Royal Adelaide Hospital on 8222 4139.

Research workers initials and date	Participants initials and date

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