

Table 1 Summary of Results

	Setting	Participants	Attrition	Interventions	Dose	Control	Behavioural Outcomes	Significant difference	Effect size (Cohen's d)
<b>Berkman (2006)</b>	Day program at homeless shelter in New York	92 Homeless men (50 in experimental (SexG) (33 sexually active) and 42 in control (23 sexually active). 72% schizophrenia/schizoaffective. 59% alcohol and/or drug dependent.	4 lost to follow-up; 6% of experimental and 9% control (of sexually active).	SexG "Informed by CBT and social skills training". Focus on unprotected sex with casual partners.	Total 6 hours. 6 x 1 hour sessions. 2 per day. 88% attended $\geq$ 4 sessions.	2 hour standard HIV educational session. 100% attendance.	Follow up 6 months. VEE <sup>†</sup> . In sexually active: SexG 1.64 (s.d 4.06) vs. control 3.5 (s.d 5.9). (p = 0.17).	no	-0.37
<b>Berkman (2007)</b>	Psychiatric outpatient clinics in New York	149 men with psychosis, sexually active in past year. Day hospital or outpatients. 73 experimental and 76 control. Had to attend pre-trial HIV education session.	135 included at 6 months and 127 at 12 months	CBT + social skills + peer advocacy. Focus on unprotected sex with casual partners	10 x 1 hour + 1 hour boosters at 3, 6 and 9 months. Avg. attendance 80%	Social skills money management (same dose). Avg. attendance 78%	VEE <sup>†</sup> 12 months: experimental 0.29 (s.d 0.90) vs. control 0.57 (s.d.2) (p=0.270).	no	0.18
<b>Carey (2004)</b>	Psychiatric outpatient clinic in Syracuse	221 F and 187 M outpatients, sexually active in preceding year, 70% major mood disorder, 30% schizophrenic/ affective. Drug and/or alcohol in past year.	67% of participants completed HIV course. Same for SUR.	Based on health Behavioural model; to reduce sexual risk behaviour (HIV) v substance use reduction (SUR) v standard care (SC)	10 sessions over 5 weeks.	1. Substance use reduction (SUR) 2. Standard care (SC)	6 month follow up. Unprotected vaginal mean episodes; HIV group 7.2 (s.d. 14.5) SUR 8.8 (s.d. 20.2) group (p<0.001)/ standard care 8 (s.d 17.9) (p<0.004). Significantly fewer casual partners in HIV 0.3 (s.d.0.58, SUR 0.3 (s.d. 0.67), and control 0.48 (s.d.1.19) (p<0.0001)	yes	0.05

<b>Collins (2011)</b>	Psychiatric facilities New York City	79 women from residential facilities and day programmes; psychotic or major affective disorder, sexually active in preceding 3 months	Lost to follow (6 months) : 4/39 in intervention & 6/40 in control	HIV prevention group (HIV) "Talk show" format. Based on social cognitive theory; emphasis on assertive skills.	10x50 min sessions. 2 per week for 5 weeks. 89.5% attended $\geq 5$ sessions	Money management course (MM, same dose). 72,5% attended $\geq 5$ sessions	VEE at 3 and 6 months. At 6 months improvement: HIV 12.23 (s.d. 28.3) MM 11.58(s.d. 20.99) (p = 0.91). Stronger trend if attended $\geq 4$ sessions	no	0.02
<b>Kalichman (1995)</b>	Community mental health centres in Milwaukee	27 men and 25 women psychiatric outpatients. No restrictions on study entry. 73% sexually active in preceding year and 58% reported sexually risky behaviour.	Number in follow-up analysis not reported	CBT and skills training focus on condom skills, assertive skills and personalised goals	4 x 90 minute sessions weekly delivered in small same sex groups 44/52 attended $\geq 2$ sessions	4 week waiting list control	Mean difference of count of unprotected vaginal sex at 1 month (pre to post-test) 1.75 (s.d 2.96) p<0.05 but no difference at 2months	no	1.08
<b>Katz (1996)</b>	Drop in Centre for psychiatric outpatients, California	37 participants recruited; male to female ratio 2:1 Mostly schizophrenia and bipolar, some with substance misuse. Some engaging in high risk HIV behaviours	10/37 not analysed as didn't attend whole course or participate in all the follow up data collection	Education, problem solving and "refusal skills" (assertiveness) and self -efficacy training.	Total 8 hours over 4 consecutive days.	Care as usual	Measure was performance on a behavioural assessment (role play) was scored and average scores compared to control. Immediately post – intervention, there was a significant difference but at 2 weeks: experimental mean 4.54 (Sc.D. 1.72) and control 3.6 (Sc.D. 1.50) was not significant	no	0.58

<b>Kelly (1997)</b>	Mental health centres, Milwaukee	49 male and 55 female psychiatric outpatients all had engaged in risky sexual behaviour in past year. 58% had affective disorder.	46/150 excluded as they didn't attend baseline and/or at least follow up session	2 intervention groups. First were CBT + skills training, and second group same as 1 but also included peer advocacy. Single sex groups	7 x 90 minutes for interventions Attendance average : 5.6 (CBT) & 5.9 (CBT +advocacy)	Single 60 min AIDS risk reduction educational session. 100% attendance	3 month follow up. Advocacy group had fewer sexual partners than CBT alone , and fewer incidents of unprotected sex Control 0.7 CBT 0.9, and CBT + advocacy 0.9. (p < 0.01)	yes	Insufficient data to calculate effect size
<b>Otto-Salaj (2001)</b>	Community mental health centre, Milwaukee	87 men and 102 women with serious mental illness in outpatient mental health programs with at least one HIV risk behaviour in preceding year.	Total 30/189 didn't attend all sessions. 159 included in analysis.	Small group HIV prevention based on social cognitive theory. Skills training and assertiveness	7 sessions (1-2 hours) 2 x weekly with booster sessions at 1 and 2 months	Health Promotion course including skills training (unrelated to HIV) (same dose)	3, 6, 9 and 12 month follow up. No significant change in frequency of condom use by men. Increase in condom use by women in intervention at 3/12 intervention 2.0 (s.d.1.1) v control 1.3 (s.d.0.52) (p<0.02), 6/12: 2.76 (s.d. 0.89) v 1.16 (0.47) (p<0.01); and 9/12 2.83 (s.d.1.62) v 1.1 (0.37) (p<0.04)	yes	2.35 (6 month condom use-women)
<b>Rosenberg (2010)</b>	psychiatric clinics, Baltimore	236 participants with co-occurring mental illness (schizophrenia, schizoaffective or major affective disorder) and substance misuse.	Total 19/236 lost to follow up. No difference across groups in attrition.	Risk reduction counselling + motivation as part of STIRR integrated mental/sexual health service	1 hour x 3 for the entire STIRR intervention (which included testing, immunisation, counselling and referral)	Enhanced treatment as usual (plus education and referral)	6 month follow up. Used AIDS Risk Inventory score. STIRR (ANOVA) STIRR 0.38; control -0.4, $f=0.61$ , $p = 0.44$ . No significant behavioural improvement	no	Insufficient data to calculate effect size

<b>Susser (1998)</b>	Homeless shelter New York	97 homeless men with mental illness. 59 were sexually active in preceding 6 months (33 in intervention and 26 in control)- only these included in main analysis	All followed up at 6 months and 56/59 followed up at 18 months	Based on CBT and social skills training. Focus on reducing unprotected episodes. SexG	15 sessions (? Length) 2 days a week for 8 weeks. 61% attended $\geq 12$ sessions	2 sessions of education and condom skills. 69% attended both sessions	Mean VEE scores at 6 and 18 month follow up. At 6/12: SexG 1.0, control 3.1 ( $p=0.01$ ) with less "high risk" behaviour in SexG ( $p = 0.01$ ). No significant difference by 18 months <i>NB s.d. not reported</i>	yes	Insufficient data to calculate
<b>Weinhardt (1998)</b>	Psychiatric outpatients Syracuse	20 female outpatients; 50% schizophrenia, 30% bipolar and 20% depression. Sexually active in preceding 2 months. 11 control and 9 in intervention	No reported attrition	Based on IMB skills model & Assertive skills training based on social cognitive theory.	10 x 75 minute sessions daily. All attended $\geq 6$ sessions (mean 8.2)	Waiting list control	2 and 4 month follow up. Increased frequency of protected sex compared to controls intervention 1.4 (s.d 1.5) v control 0.1 (s.d. 0.5) ( $p<0.01$ ) at 2/12, but reduced effect at 4/12 ( $p<0.9$ ).	yes	-0.388 (4 months)

<sup>†</sup>VEE- Vaginal Episodes Equivalent is a score derived from sexual behaviour engaged in over past month, each type of behaviour is graded according to risk of HIV infection