

Laura Sully is a Research Worker and Dr Patricia Conrod is a Clinical Psychologist and Clinical Lecturer at the National Addiction Centre, Institute of Psychiatry, King's College, London. For correspondence please email: Laura.Sully@iop.kcl.ac.uk

Laura Sully and Patricia Conrod

An innovative approach to the prevention of substance misuse, emotional problems and risky behaviour in adolescents

A school-based programme is receiving positive feedback from pupils and results indicate that the interventions significantly reduce binge drinking, drinking frequency and emotional and behavioural problems.

Kheran is a 14 year old boy from a multi-cultural background. He spends much of his time at school in internal seclusion and has been excluded on many occasions. He can be very emotional and often reacts to situations in a verbally or physically aggressive manner. These unpredictable outbursts not only disrupt teaching and other pupils, but make people wary of him. Outside of school, Kheran is a member of a gang and reports using alcohol and cannabis and often getting into fights. What can schools do to help Kheran in this climate of pressure to focus on academic needs, rather than emotional and behavioural needs combined with limited resources?

Increasing problem

Substance misuse and other risky behaviours are an increasing problem amongst adolescents, with mounting focus on the rise in binge drinking. There is very little prevention work in the UK, with the focus more often on drug education than intervention. Moreover, when interventions are offered, they tend to be aimed at those where problem behaviour has already begun. Schools tend to adopt a universal approach to drug education where all students are educated about the risks related to alcohol and drugs. Universal approaches such as these have been found to have little or no effect on substance use amongst

adolescents (see Foxcroft, Ireland, Lister-Sharp, Lowe & Breen, 2002 for a review). Interventions need to be more personally relevant and targeted at those most at risk, preferably before problems begin.

A novel approach

The Preventure programme does this. It is a novel approach which aims to reduce risk taking behaviour by targeting personality factors which are known risk factors for early onset substance misuse and other risky behaviours. Therefore, adolescents are identified and treated, with the aim to prevent or intervene early enough before adolescents engage in risky behaviours and/or these behaviours become problematic.

Personality profiles

The four personality profiles targeted are anxiety sensitivity, sensation seeking, negative thinking and impulsivity.

Anxiety Sensitivity (AS)

AS refers to the tendency to be highly sensitive to bodily sensations when experiencing anxiety and feel overwhelmed by these feelings.

Sensation Seeking (SS)

SS refers to the tendency to seek out excitement and crave fun.

Impulsivity (IMP)

IMP refers to the tendency to speak or act before thinking things through.

Negative Thinking (NT)

NT refers to tendency to look at things negatively and often experience feelings of hopelessness.

These four personality factors have been identified as risk factors for substance misuse and each one is associated with different drinking motives and patterns of drinking as well as a vulnerability to different mental disorders (Conrod, Pihl, Stewart & Dongier, 2000a). For example, individuals with a sensation seeking personality are more disinhibited and misuse substances for enhancement motives. For these individuals, a situation is enhanced when they are high on drugs or alcohol and therefore, the substance has positive reinforcing properties (Cooper, Frone, Russell & Mudar, 1995, Pihl & Peterson, 1995). Conrod et al (2000a) found sensation seeking to be related to alcohol use disorders and Impulsivity to anti-social personality disorder, alcohol and cocaine dependence.

In contrast, anxiety sensitivity and negative thinking/hopelessness are associated with higher risk of misusing substances for coping or conformity motives.

Anxiety Sensitivity is also associated with risk for anxiety disorders, particularly disorders that involve panic anxiety. Some

substances, such as alcohol, have anxiety reducing effects which are particularly reinforcing for individuals with high levels of anxiety sensitivity.

From these studies, it can be seen that targeting those most at risk of substance misuse and risky behaviour by intervening at the level of personality is of extreme importance as substance misusers are a heterogeneous group and treatment is most effective when it is personally relevant.

Preventure in Canada

The Preventure Study is a school-based programme and was originally developed and implemented in Canada with students aged between 14 and 17 who reported having had a drink of alcohol in the previous 4 months (Conrod, Stewart, Comeau & Maclean, in press). The students were asked to complete a questionnaire which includes the Substance Use Risk Profile Scale (SURPS; Conrod & Woicik, 2002). Using this personality measure, students were identified as being at elevated risk if they scored more than 1 standard deviation above the norm. These students participated in a brief intervention (outlined below) targeted at their personality profile. Conrod et al. (in press) found that binge drinking and quantity and frequency of drinking were reduced at 4 month post-intervention.

UK programme

Following the encouraging results obtained from the Canadian study, funding was secured by Action on Addiction, a UK-based charity, for a similar study to be conducted in the UK. The programme and materials were developed to be developmentally and culturally appropriate for UK youth.

Preventure began in UK schools in January 2004 and is currently being conducted in 25 mainstream schools in London boroughs and a pilot study has just begun in Pupil Referral Units (PRUs).

Schools were invited to participate in the research study and if they were interested, year 9 or 10 students were surveyed. The questionnaire contained the SURPS which identified those students who showed elevations on the four key personality dimensions. It also contained questions on drinking motives, problems related to alcohol use, reckless behaviour, depression, anxiety and psychotic symptoms as well as a questionnaire assessing major psychiatric symptoms and syndromes.

Brief Intervention

Students selected to participate are given a two session intervention workshop. The first session is 90 minutes and the second

is 60 minutes. The manuals were developed originally for adults (Conrod et al, 2000a) and then for adolescents (Conrod et al, in press) and contain psycho-educational, motivational and coping skills training material.

The sessions are in group format (one-to-one in PRUs due to higher need) and are interactive to promote peer involvement and sharing of examples as this has been shown to be most effective in targeted interventions (Tobler, et al. 2000). They contain scenarios taken from real life examples and were developed with input from adolescent focus groups to ensure they are relevant for youths.

Cognitive behavioural techniques are used to target maladaptive thinking (i.e. thinking errors) and coping skill deficits and motivational interviewing techniques are used to address motivation to take responsibility for one's problematic behaviours.

The focus is not on drinking or drug use but on risky ways of coping with personality such as avoidance, distraction and aggressive thinking that may lead to substance misuse or other risky behaviours such as truancy, fighting, not thinking things through and withdrawal from others. Individuals learn different coping strategies to cope with their personality vulnerability.

Results

Students who participate in the Preventure study are followed up every 6 months for 2 years to measure the impact of the programme. The study has two waves. The first wave comprised of 12 schools with 2700 students who participated in the initial survey. The second wave began in October 2005 and comprised of 14 schools with 3000 students participating in the initial survey.

The 6 and 12 month follow up of the first wave of Preventure has now been analysed. From the baseline data of the initial survey, we found that in this sample of 13-16 year olds (mean=14 years), 46% drank alcohol, with 28% classified as binge drinkers; 14% were smokers and 18% reported smoking marijuana; 3.3% were using cocaine and 6% were using other drugs. These prevalence rates were larger in the high risk groups supporting the need for personality-targeted interventions.

Of those initially surveyed in the first wave, 423 students participated in the treatment stage of the study and were randomly assigned to either a personality matched intervention session, or a control group which received no intervention.

The treatment sample was analysed, comparing those who participated in the personality specific intervention sessions to those in the control group. The results were

excellent with those participating in the intervention sessions showing significantly reduced binge drinking rates in students who had indicated having tried alcohol at baseline. The results showed that for every 2 students who participated in the sensation seeking intervention, 1 case of binge drinking was prevented. These results were maintained at 12 month follow up which is unprecedented for this type of brief intervention (Hetteema, Steele, & Miller, 2005).

It was also found that quantity and frequency of drinking was reduced in comparison to the control group which increased over time. Again, this was more pronounced for students who participated in the sensation seeking intervention (see Conrod and Castellanos, in preparation).

Although originally designed to reduce risky substance misuse, the interventions have also been shown to concurrently reduce or prevent common emotional and behavioural problems in adolescents at 6 months post-intervention.

Castellanos and Conrod (in press) report significantly reduced shoplifting rates in comparison to the control group (24% v 33%). This reduction in shoplifting was most pronounced in those students who participated in the Impulsivity intervention. Prevalence of shoplifting reduced from 45% to 26% for the Impulsive intervention group compared to an increase from 45% to 53% for those in the impulsive control group.

Truancy rates were significantly reduced in students who participated in the Anxiety Sensitivity intervention, with truancy rates reduced to just 5% compared to 28% in the control group.

Depression scores were reduced in students who participated in the Negative Thinking intervention in comparison to the control group. Finally panic attack rates were reduced in those who participated in the intervention showing lower rates of experiencing panic attacks (20%) in comparison to the control group (29%) at follow up. This was most significant in students who participated in the anxiety sensitivity intervention, with rates reduced from 35% at baseline to 18% at follow up.

Discussion

The intervention effects reported by Conrod and Castellanos (in preparation) on binge drinking rates are very exciting, as most Motivational Interviewing interventions which are deemed to be effective in the treatment of substance misuse, only find such strong effects immediately, or one month after the intervention (Hetteema, Steele, & Miller, 2005). Preventure is demonstrating these effects up to 12 months post intervention.

Additionally, the findings reported by Castellanos and Conrod (in press) are extremely interesting as the intervention has been shown to improve psychological and behavioural symptoms in adolescents in addition to targeting substance misuse.

As our 6 month and 12 month follow up results indicate, the Preventure programme is having its effect on binge drinking mainly in the sensation seeking group. The main reason for this seems to be that this is the only group that is demonstrating risk for alcohol misuse at this young age (13-14 years). The other personality groups may not yet have reached the critical period in which their personality risk manifests itself as drinking as there is no noticeable increase in drinking behaviour over time in these other personality groups. It is possible that the intervention will benefit the later onset drinkers, but that these effects will only reveal themselves with longer term follow-up. However the intervention is having a significant effect on emotional and behavioural problems within these other personality groups with reductions in rates of truancy and panic attacks in the Anxiety Sensitivity group and shoplifting in the Impulsivity group as well as a reduction in depression scores in the Negative Thinking group.

The results from the Preventure study indicate that this programme is an excellent way for young people to learn new coping, thinking and decision making skills to replace the maladaptive cognitions they previously held which in turn can lead to early substance misuse, mental health issues and engagement in risky behaviours. The success of the programme is due to the targeted nature of the interventions as they are personality specific and therefore personally relevant for the students. Feedback from students was positive including:

"It helped me get new ideas about how to control myself when I'm angry or frustrated." "I think now I will always think before I do something naughty." - IMP

"It was fun learning about how your body can get nervous with physical sensations and hot thoughts. That was cool learning about it!!" "I was able to say what I felt when I was worried about things. And now, when I am anxious, I know what to do." - AS

"It made me think about how my actions affect me in the future." "It helps you think about why you do things and how you can change your actions." - SS

"I learnt more about my inside thoughts, what they do to make me act and why." "I think it was good because we got to share thoughts and feelings. This has helped me a lot." - NT

Future analysis

In the next few months, additional

analyses will be conducted. The 6 month follow up data from the second wave of participants will be added to that from the first wave (as the same protocol was used) to examine the intervention effects on a larger sample giving it more statistical power to detect change in low prevalence behaviours such as illicit drug use and high risk sexual behaviour.

Additionally, data from the first wave of schools has been collected for 18 month and 2 year follow up allowing us to see if results are maintained over this longer period of time.

We will also be analysing the psychological measures that were added to the follow-up survey for the second wave of the study, to further characterise high risk students based on instruments used in clinical psychiatric settings.

Additional research is being conducted utilizing the Preventure programme with adolescents at higher risk of substance misuse and associated emotional and behavioural problems such as students attending Pupil Referral Units and the children of parents who misuse alcohol.

Relevance to school curriculum and OFSTED requirements

The Preventure programme fits into Personal, Social and Health Education (PSHE) in the school curriculum and also satisfies aspects of OFSTED requirements. Schools are required to educate on personal matters such as sex and relationships, mental health and substance misuse. They are also encouraged to identify and work with students who need support. The information gathered from surveying students could be used to inform the Common Assessment Framework (CAF) which is a system to identify vulnerability and need and how best to respond. The information could be used to create student well-being records and to ensure students most in need receive the intervention.

Additionally, the interventions take into account the requirements and outcomes of 'Every Child Matters' and can be used as evidence in the Self-Evaluation Form (SEF) required by OFSTED. Therefore, students like Kheran who are displaying problem behaviour can be worked with in a personally relevant manner using an evidenced based programme, without schools needing to invest substantial resources. This will address students' needs and hopefully allow them to stay in mainstream schools and give them the tools and coping skills to achieve their goals and improve their quality of life.

Training

The next stage of the Preventure study is to train school-based education professionals such as teachers, educational psychologists, social workers, drug workers and counsellors. This will enable us to evaluate the practicalities and effectiveness of educational professionals running the Preventure programme in schools across London, and hopefully allow us to assure sustainability of the programme once the study is completed.

References

- Castellanos, N., & Conrod, P. J. (in press). Brief interventions targeting personality risk factors for adolescent substance misuse reduce depression, panic and risk taking behaviours. *Journal of Mental Health*
- Conrod, P. J., & Castellanos, N. (in preparation). Can brief personality targeted interventions prevent or reduce binge drinking in adolescents? Results from a Randomised Controlled Trial at six and twelve months post intervention.
- Conrod, P. J., Pihl, R. O., Stewart, S. H., & Dongier, M. (2000a). Validation of a system of classifying female substance abusers based on personality and motivational risk factors for substance abuse. *Psychology of Addictive Behaviors*, 14, 243-256.
- Conrod, P.J., Stewart, S.H., Comeau, M.N., Maclean, A.M (in press). Efficacy of cognitive behavioral interventions targeting personality risk factors for youth alcohol misuse. *Journal of Clinical Child and Adolescent Psychology*.
- Conrod, P. J., Stewart, S. H., Pihl, R. O., Côté, S., Fontaine, V., & Dongier, M. (2000b). Efficacy of brief coping skills interventions that match different personality profiles of female substance abusers. *Psychology of Addictive Behaviors*, 14, 231-242.
- Conrod, P.J., & Woicik, P. (2002). Validation of a four-factor model of personality risk for substance abuse and examination of a brief instrument for assessing personality risk. *Addiction Biology*, 7, 329-346.
- Cooper, M. L., Frone, M. R., Russell, M., & Mudar, P. (1995). Drinking to regulate positive and negative emotions: A motivational model of alcohol use. *Journal of Personality and Social Psychology*, 69, 990-1005.
- Foxcroft, D.R., Ireland, D., Lister-Sharp, D.J., Lowe, G., & Breen, R. (2002). Primary prevention for alcohol misuse in young people. *The Cochrane Database of Systematic Reviews* 2002, Issue 3. Art. No. CD003024.
- Hetteema J. Steele J. Miller WR. (2005). Motivational interviewing. *Annual Review of Clinical Psychology*, 1, 91-111.
- Pihl, R. O., & Peterson, J. B. (1995). Alcoholism: The role of different motivational systems. *Journal of Psychiatry and Neuroscience*, 20, 372-296.
- Tobler, N. S., Roona, M.R., Ochshorn, P., Marshall, D. G., Streke, A. V., & Stackpole, K. M. (2000). School-based adolescent drug prevention programs: 1998 meta-analysis. *Journal of Primary Prevention*, 20, 275-336.