PREVENTURE : Personality-targeted interventions for the prevention of substance misuse and mental health problems

Personality factors have been identified as robust risk factors for substance use disorders and have been shown to mediate the genetic predisposition to substance misuse and predict specific patterns of substance misuse and psychiatric comorbidity (see [1] for review). Inspired by these findings, the personality-targeted approach to substance use prevention and brief intervention offers a novel strategy for intervening on risk factors for substance misuse and offers many advantages over more traditional universal prevention or generic intervention approaches targeting substance use behaviours more directly. The Preventure Programme was designed to target known personality risk factors for substance misuse based on the evidence accumulated thus far on effective interventions for youth alcohol and substance misuse [2]. Unlike universal programmes that tend to universally promote generic coping skills and balance normative attitudes around substance use, this selected personality-targeted approach targets four personality-specific motivational pathways to substance misuse: Hopelessness, Anxiety Sensitivity, Impulsivity and Sensation Seeking.

After selection on personality scales (often using the SURPS), high-risk individuals are invited to participate in brief individual- or group-based intervention sessions that target their dominant personality profile. Interventions are generally two sessions in duration, with 1 week separating sessions, each generally 90 min in duration. The interventions are conducted using manuals that incorporate psycho-educational, motivational enhancement therapy (MET; [3]) and cognitive–behavioural (CBT; [3]) components and include real-life 'scenarios' shared by local youth with similar personality profiles. In the first session, participants are guided in a goal setting exercise, designed to enhance motivation to change behaviour. Psycho-educational strategies are then used to teach participants about the target personality variable and associated problematic coping behaviours like avoidance, interpersonal dependence, aggression, risky behaviours and substance misuse. They are then introduced to the CBT model and guided in breaking down a personal experience according to the physical, cognitive and behavioural components of an emotional response. In the subsequent sessions, participants are encouraged to identify and challenge personality-specific cognitive distortions that lead to problematic behaviours. The main difference between the personality-targeted approach and other brief intervention strategies (e.g. brief motivational interviewing; [3]) is that each component is introduced and discussed in personality-specific ways. For example, the Impulsivity intervention will discuss drug and alcohol expectancies as they pertain to impulsivity, as well as promote the development of cognitive behavioural skills that are most relevant to cognitive control and response inhibition, whereas the Anxiety Sensitivity intervention will challenge expectancies related to the positive nature of anxiolytic substances, while also helping high-risk youth learn to challenge their catastrophic reactions to interoceptive cues and reduce avoidance behaviours in response to such cues. The cognitive–behavioural strategies that are used in the personality-targeted approach are closely based on the evidence-based strategies that would be used in CBT interventions for major psychiatric disorders to which each of these personality profiles is most relevant, for example, CBT for depression in the case of Hopelessness (e.g. [4]), CBT for panic disorder in the case of Anxiety Sensitivity (e.g. [5, 6]) or CBT for ADHD in the case of Impulsivity (e.g. [7]).

Delivery Format:

When applied to the school setting, interventions are only two 90-min group sessions facilitated by a trained facilitator and co-facilitator, with a minimum of 1 week between sessions [8, 9, 10, 11]. Youth with similar personality profiles are grouped together to complete personality-specific interventions targeting their most salient personality profile. In more clinically oriented settings, such as psychiatry clinics or special education institutions, where youth might suffer from more severe learning difficulties or psychiatric comorbidity, interventions can be broken down into multiple briefer intervention sessions, which can be delivered in a group or individual format, depending on the individual needs of the client. In addition, a very novel treatment delivery approach [12, 13] recruited participants living with anxiety disorders from the community and simply mailed treatment manuals to their homes. Intervention sessions were conducted individually with the assistance of a coach who is available to participants by telephone or email.

The Evidence:
Whether it involves the delivery of the full Preventure Programme or personality-specific interventions, the personality-targeted approach has now been evaluated in eight randomised trials, with two additional trials in progress. These trials typically target individuals who are considered at high risk of misusing substances prior to the onset, use or problem use of substances. Therefore, many of the trials are conducted with secondary school students who have been invited to participate in interventions because they scored one standard deviation above the mean on one of the SURPS measures. Some such trials also specified drinking onset as an additional eligibility criterion (e.g. [8, 14]). Two trials differ in that they target adults recruited from the community living with mental health problems, such as substance dependence [15] or anxiety disorders [12]. The school-based studies delivered interventions in group format, while the adult studies delivered interventions in an individual format. Finally, studies also vary in terms of duration of follow-up from 4 months to 3 years. What is striking about these results is the rather consistent moderate effects reported on most outcomes. For every study, we systematically calculated standardised effect sizes on three alcohol outcomes: drinking (use or frequency), binge drinking (use or frequency) and alcohol problems (presence or severity). The average effect size across all studies and all outcomes was d = 0.47, which indicates a moderate effect. Effects on illicit drug use and binge drinking rates reduced by approximately 50%. One study demonstrated that the interventions were associate with a 25% reduced likelihood of transitioning to significant mental health problems, such as anxiety, depression, suicidal ideation and conduct problems. The PREVENTURE program has been reviewed and recommended by a number of important health organisations, including SAMSHA's National Registry for Evidence-based Programs and Practices (NREPP), the UNESCO-UNODC-WHO Joint publication: Education sector responses to the use of alcohol, tobacco and drugs, and the U.S. Surgeon General's Report on Addiction.

Training Educational and Health Professionals to Deliver Personality-Targeted Interventions: In a study of effectiveness of the Preventure Programme under real-world conditions, O'Leary-Barrett et al., [16] described a procedure by which educational professionals were trained to implement the programme through a structured training protocol involving a 3-day workshop and two supervised practical sessions in which trainees delivered a two-session intervention to high-risk youth. Preventure trainers offered supervision and standardised feedback using a scale that was developed to evaluate adherence to 12 core treatment components of the personality-targeted intervention programme, such as goal setting and identifying and challenging automatic thoughts [17]. The Cognitive Therapy Scale—Revised [18] and the Motivational Interviewing Treatment Integrity 3.0 [19] were also used to provide trainees with feedback on the quality of their therapy-specific skills. In this trial and subsequent trials, each trial facilitator must reach sufficient levels of programme delivery before running personality-targeted interventions with trial participants. This procedure is now used rather systematically to disseminate the programme to different communities around the world and has proven to be effective, not only in transferring skills to new clinical teams [16], but also leading to behavioural changes in young people [14], particularly if treatment fidelity is measured during programme implementation [20]. We therefore describe the above training protocol as the 'High Fidelity Training' option when disseminating the programme. Because this can be rather labor intensive and unrealistic for some communities, the Preventure Team also offers a 'Low Fidelity Training' option, which only includes the 2-3 day training workshop, omitting the practical supervision component. We call this low fidelity because we have not yet tested the impact of this training protocol on youth behaviour outcomes. (Please refer to Annex A for further details and costs related to training)

Developmental and Cultural Adaptations of Personality-Targeted Interventions: Programmes that are sensitive to the developmental needs, cultural values and attitudes of a target group are more effective and reported by adolescents to be more relevant [21, 22]. Therefore, for every new implementation of the Preventure Programme, a preliminary process of developmental and cultural adaptation of intervention materials is recommended. First, it is recommended that the SURPS be translated, back-translated and then evaluated for internal consistency. It is also recommended that the scale be administered to a representative sample of target participants in the new context to confirm that personality factors are indeed related to substance use and misuse in that context. For example, when adapting the programme for youth living in First Nations Communities in Canada, it was not at all clear whether personality factors played a similar role in their substance use, as had been previously demonstrated for youth attending mainstream schools in Canada, as reported in [23]. This

research showed that the personality model was highly relevant to substance use in First Nations youth [24]. Similar cultural adaptations of the scale have been published in advance of programme adaptation (e.g. [25, 26]). Additional validation procedures can include qualitative interviews with high-risk youth identified using the SURPS, such as described by Barrett et al. [27], and procedures that include even more community engagement, such as described by Mushquash et al. [28, 29]. In both adaptations, a mixed-method approach was used in which quantitative surveys such as the Drinking Motives Questionnaire are used to confirm different motivational profiles in high-risk youth and qualitative surveys and interviews with high-risk youth are used to collect detailed information on where drinking and drug use situations occur in young people's lives and other local interests and pastime activities for youth. Conducting structured qualitative interviews with youth who reported substance use and elevated personality risk is also recommended to help identify local terms used to describe substance-related activities and the physical and emotional states relevant to each personality dimension. All this qualitative information is then directly used to create relevant high-risk scenarios that are included in manuals and which are read aloud during intervention sessions to help young people better understand a particular cognitive behavioural process or high-risk situation.

Another important step in some adaptations has been to have local educational and/or psychological professionals review intervention materials and provide detailed feedback on the developmental appropriateness of the content for a particular age group or clinical population. This was particularly relevant when adapting the Preventure Programme for youth in London, UK and Montreal, in which the goal of the study was to test the impact to the programme for younger cohorts than in previous trials in order to demonstrate prevention of substance use onset. The recent Montreal and Australian adaptations [20] were also reviewed by experienced editors of children's literature to be sure that the intervention material, particularly the scenarios, is written in a way that is engaging. Finally, it is also recommended that new adaptations are first piloted with high-risk youth, who are then asked about their experiences with the intervention. According to one qualitative evaluation of adolescents'reactions to interventions, they report that, for them, the most important components of the intervention are learning cognitive–behavioural strategies and that such skill development during personality-targeted interventions was key to positive behavioural change [17]. Importantly, youth-generated information regarding their intervention experiences independently accounted for 12–25 % of the variance in change in alcohol use and mental health symptoms over 12 months. By contrast, very little variance in substance use outcomes could be predicted using investigator-selected quantitative measures of cognitive–behavioural processes, suggesting that mixed-method approaches, particularly those that allow for youth perspectives to be communicated, are extremely important in the adaptation process.

The Substance Use Risk Profile Scale: a Brief Personality Risk Assessment Scale

The Substance Use Risk Profile Scale (SURPS) was developed to assess four personality traits relevant to substance misuse risk: AS, HOP, IMP and SS. The 23-item SURPS was developed and validated by Woicik, Stewart, Pihl and Conrod [23] using factor analysis on a battery of personality and symptom inventories that tap these four personality dimensions and is the only brief personality assessment tool that provides relatively independent measurement of these four personality traits. It is suitable for self-administration by adolescents and adults [23], and the brevity of the scale is highly advantageous in applied research contexts where large numbers of participants are screened simultaneously or completethe scale as part of a larger assessment battery. It has also proven useful in clinical settings where time limitations are significant barriers to using psychometric tests. The SURPS has been translated into French, German, Dutch, Czech,Spanish, Japanese, Sri Lankan, Cantonese, Mandarin,Hebrew and Turkish and has shown good internal consistency,test–retest reliability and concurrent and predictive validity with respect to identifying current and future substance misuse among adolescents and young adults across many different cultural and political contexts (e.g. [23, 30-32]).Importantly, the SURPS has also been shown to have incremental validity over the NEO-FFI scales in predicting drinking problems [23] and prospective validity in predicting substance use outcomes [23, 33, 34, 20], as well as mental health outcomes [33, 35]. These studies also show that the SURPS subscales are specifically predictive of different patterns of psychopathology in theoretically relevant ways [36, 30, 37, 38].

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