

## **A 3-phase survey, training, and inter-disciplinary combined on-line/offline, theory-based and evidence-based intervention for prevention of psychoactive substance use among adolescents who are case-work clients of social workers (The My Sunny Way Project)**

### **Executive Summary**

Adolescent substance use has been a concern. Clients of social workers may be vulnerable to substance use. An anonymous survey was conducted to understand factors of substance use behavior/intention in this group of adolescents. The questionnaire design was theory based. Verbal informed consent was obtained from the participants. The anonymous survey investigated risk and protective factors associated with psychoactive substance use behaviors and intention (n=301). The prevalence of psychoactive substance use in the past 30 days, the past six months, and lifetime was 7.6%, 12.0%, and 20.9%, respectively. The prevalence of intention of psychoactive substance use in the next 12 months was 8.6%. Of the participants, 33.9% found it easy/very easy to obtain psychoactive substances; 47.0% knew some psychoactive substance users; 21.6% had been offered drugs by their peers; 32.9% and 10.0% had had 1-5 and >5 good friends using substances respectively.

The three substance use behavior outcome variables were psychoactive substance use in the past 30 days, in the past six months and in the lifetime. Older age and having a deceased father or mother were positively associated with psychoactive substance use in the past six months and in lifetime. The analyses adjusted for background factors found significant factors of the three outcomes related to the Theory of Planned Behavior (i.e., positive attitude, subjective norm, and perceived behavioral control); negative attitude toward psychoactive substance use was significantly associated only with psychoactive substance use in the past 30 days. Significant factors of all three outcomes related to the Social Cognitive Theory (SCT) variables included a) the positive and negative outcome expectancies, b) the environmental factors (i.e., knowing someone who were intensive psychoactive substance users, having good friends using psychoactive substances, easiness to obtain psychoactive substances, and having been offered psychoactive substances by peers), and c) refusal self-efficacy. In general, similar factors of intention to use substances in the next 12 months and lifetime were found.

In a randomized controlled study following the survey, an intervention was then conducted to an independent group of participants by the trained collaborating social workers to reduce psychoactive substance use (last 12 months), drug use intention (future lifetime and in the next six months), and the risk level of psychoactive substance use among the participants, and the intention to stop among psychoactive substance users. Consented participants were randomized into a control group (printed brief information) and an intervention group, each had 150 participants. Based on the survey results, literature review, behavioral health theories, and some focus group discussions, a panel designed and produced some intervention videos. The videos used narrative approaches and focused on observational learning (role modelling), refusal skills, and self-efficacy based on the SCT, and emotional management (including cognitive changes). The participants of the intervention group watched the videos on-line and were debriefed by the social workers afterwards. In addition, the trained social workers administered a 20-30 minute session of motivational interviewing to participants admitting having used substance or intending to do so.

Evaluation was conducted by self-administered surveys conducted at baseline, at the end of the intervention, and six months afterwards. The baseline levels of the measured variables were comparable at the baseline survey. The intervention group showed a significantly higher level of perceived behavioral control than the control group among all participants after six months. This is an important cognition mentioned in the Theory of Planned Behavior. However, comparisons of all other outcomes between the intervention and control groups were statistically non-significant. In general, more than half of the participants found the intervention useful and about three fourth of the participants would recommend it to their peers.

To further discuss, the prevalence of ever use of psychoactive substance use was quite high. Interventions are warranted. Attention needs to be paid to those of higher age and having a deceased father or mother. The participants were exposed to a high-risk environment, as many of their peers were substance users; many participants were offered drugs and substances are accessible. Such environmental factors were significantly associated with substance use behavior/intention. Interventions to increase refusal skills and peer education are essential. Some factors such as male sex, low parental education level, low self-esteem, low gratitude, and poor family relationship were significantly associated with adolescent substance use in literature but not in this study. It is plausible that the social client group already possessed such risk factors; their risk factors might be different (e.g., environmental factors).

It is disappointing that the intervention was unable to reduce substance use behavior in the past 30 days and intention of future use although it increased behavioral control. It is plausible that this intervention was unable to change the important environmental factors such as networking with substance users. It is also unclear whether and how much the pandemic and its social distancing had reduced substance use, as the prevalence of substance use was lower than expected. The inability to reduce positive outcome and increase negative outcome expectancies may also account for the non-significant intervention effect on substance use behavior and intention. Some participants of this population may have deep-rooted misperceptions about perceived benefits of psychoactive substance use and underestimated its harms. It is possible that psychoactive substance use is not a stand-alone problem but in some of the clusters of interrelated problems. Health promotion approaches, although carefully designed and corresponds to theories and empirical research, might not be adequate to stop the psychoactive substance use problems in this population. In literature, cognitive behavioral therapy has been effective in reducing substance use (McHugh et al., 2010), but such program is intensive and not easily available and requires high motivation. To conclude, it seems that we need to shift from treatment to early prevention among secondary school students, to provide them with resilience, stress reduction, and secondary interventions before they develop intention and behaviors related to psychoactive substance use.