

The Chinese Drug Involvement Scale

Measuring Drug Abuse: The Development of the Chinese Drug Involvement
Scale (CDIS) in Hong Kong

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Abstract

Objective: The development of the Chinese Drug Involvement Scale (CDIS) for use in Chinese communities. Method: A battery of scales, including the CDIS and three mental health measures, were administered to 152 students from 13 to 18 years of age. Reliability and validity analyses were performed. The refined version was then cross-validated on a group of identified drug abusers (N=77). Results: The final version of the CDIS is a 22-item scale. Validation results demonstrate that the CDIS has high reliability and a satisfactory level of validity. Conclusion: The CDIS is a global assessment of an individual's beliefs and values relating to drug use, apart from actual drug abuse behavior. The scale will be particularly useful for periodic assessments or outcome evaluation in treatment programs.

Measuring Drug Abuse: The Development of the Chinese Drug Involvement Scale (CDIS) in Hong Kong

In Hong Kong, an upward trend in adolescent drug abuse has been detected since the early nineties, particularly in the abuse of heroin and psychotropic substances among students (Narcotic Division, 1997; 2000a), triggering a growing concern over the prevalence of drug abuse among Hong Kong youth. Although the Government has stipulated a focus on youth in its anti-drug work (Narcotics Division, 2000b), with a few exceptions (e.g., Shek, 1998), studies on young drug abusers in the last decade have been mainly descriptive and anecdotal (e.g., HKCSS, 1998; HKCSS, & HKPA, 1995). This article reports the development and validation of an assessment tool that will help practitioners evaluate the significance of a client's drug abuse problem beyond mere drug consumption. Furthermore, as only 20% of drug abusers registered themselves for treatment (Narcotic Division, 2000b), the Government has been considering ways to encourage more of them to come into rehabilitation, an assessment tool for drug abuse will be timely to help identify those in need for treatment.

Unlike other scales developed in the western context (e.g., Faul & Hudson, 1997; McNeal & Hansen, 1999), the Chinese Drug Involvement Scale (CDIS) so developed has been contextualised for use in Chinese communities. It is constructed in Chinese so as to accord with the language and culture of the people in Hong Kong and other Chinese communities. A mere adaptation of other commonly used assessment tools would have been inappropriate either because of their being too lengthy (e.g., Wanberg, 1991; Waldron, 1998), or intellectually too taxing (Winters & Henley, 1993) for use with active drug users.

According to the cognitive model of addiction, drug abuse is seen as a self-defeating and habitual style of coping, a function of people's dysfunctional beliefs or addictive beliefs centering on drug-taking as pleasure-seeking or a form of escape (Beck et al., 1993; Peele, 1991). A large body of research has indicated that drug taking in adolescence results from a number of risk factors, such as being school dropouts, having drug abusing peers, or having normative beliefs and attitudes favorable to drug abuse (Hawkins, Catalano, & Miller, 1992; Narcotic Division, 1997). A few local studies have also

demonstrated that drug abuse behaviors of peers, the adolescents' attitudes towards drug abuse and their beliefs in the consequences of drug taking are mediating variables that influence the development of a young drug abuser's drug career (HKCSS & HKPA, 1995; Narcotics Division, 1997; Wong, Tang & Schwarzer, 1997). These results indicate that there is a need to understand drug abuse in the totality of a person's life space, including his beliefs, values and behaviors, all of which are influenced by the contextual constraints of the physical and social environments. The assessment of drug abuse must go beyond the mere measurement of actual drug using behavior. Thus in conceptualizing the CDIS, due consideration has been given to include the impact of such environmental influences on drug abuse.

Method

Instruments

Based on literature review (e.g. Faul & Hudson, 1997; Hawkins, Catalano & Miller, 1992) and on their own clinical experiences, an initial pool of items were generated and refined by a team of clinical psychologists and social workers. A pilot study was then conducted

on a convenience sample of 50 youths from a variety of social backgrounds, aged between 14 to 20. They were requested to complete the CDIS (32 items) and comment on it. After analyzing the responses of the pilot sample, a revised version (29 items) was presented to an expert panel of four social workers experienced in working with drug abusers who judged and agreed on the face validity of the items.

The revised edition was administered to a student group sample of 152 (will discuss below), the results were used to run inter-item correlation analysis for item selection. Twenty-two items were selected from the original pool.

The final version of the CDIS (Appendix) is a 22-item scale. It is a global assessment scale, measuring the respondents' involvement in drugs through assessing such indicators as actual drug experiences, beliefs with regard to the consequences of drug taking, the degree of manifest commitment to abstinence from drugs, and the extent to which friends have drug related habits. The total scale score ranges from 22 to 132, with a higher score indicating a more extensive degree of drug involvement. It is recommended that a valid score should be

based on the completion of at least 80 percent of its items (Faul & Hudson, 1997). For the DIS, it means the completion of at least 18 items of the scale.

As the coexistence of drug abuse with other psychiatric disorders has been found to be common, in particular, depression (Regier et al., 1990), in the validation of the CDIS, it is postulated that the CDIS score would be positively correlated with measures of depression and hopelessness, and negatively correlated with measures of purpose in life. The Chinese versions of the Beck Depression Inventory (C-BDI) (Beck et al., 1961; Shek, 1990), the Hopelessness Scale (C-HOP) (Beck et al., 1974; Shek, 1993) and the Purpose-in-Life Questionnaire (C-PIL) (Crumbaugh, 1968; Shek, 1988) have been used, and a significant correlation between the CDIS and these three scales would lend support to its construct validity.

Participants and Procedures

The data collection was conducted from November 1999 to May 2000 in two stages.

Latest surveys so far found that drug abusers in Hong Kong are inadequately educated (Narcotics Division, 2000a), and students aged 14 to 18 have higher rates for drug abuse (Narcotic Division, 1997). Based on this information, the study has been designed to test the sensitivity of the CDIS to discriminate between drug abusers and non-drug users in the low education attainment group from which drug abusers mostly come. Students from two secondary schools ($n = 152$) with academic standards lower than average and located in a district which had high prevalence rate of drug abuse were purposively selected. With the consent of the school authorities, the battery of scales (CDIS, C-BDI, C-HOPE and C-PIL) were administered to two classes in Secondary forms 3, 4 and 5 (equivalent to junior high to high school level in the North American context). Respondents were assured of confidentiality and freedom of participation. The results of this student group sample were used for item selection and generated the final version of the CDIS.

The final version and the same battery of mental health measures were further tested on two groups of identified drug abusers from two

non-government agencies ($n = 77$). The data were compared with the student group for concurrent-known-groups validity analysis.

Results

Age-wise, the student group has a mean age of 15.3 years, ranging from 12 to 18 years, the abuser group has a much wider variation in age, ranging from 19 to 69, and a mean age of 33.7, which approximates the average age of 35 for reported drug abusers in Hong Kong (Narcotic Division, 2000a). The age of all respondents thus ranged from 12 to 69, with a mean age of 21.5 (Table).

(Insert Table)

Reliability

The Cronbach's alpha for the CDIS was determined to be .90, indicating that the internal consistency of the scale was highly satisfactory. Further, the mean of the corrected item-total correlation was .53, (see Appendix) and the average inter-item correlation was .31. The abuser group had a lower coefficient at .65 and its average corrected item-total correlation was .27. In view of

the small size and the more varied background of this group, these low coefficients are marginally acceptable.

Validity

It was reported that drug involvement did not correlate with age (Faul & Hudson, 1997). The statistical analysis showed that there was no significant correlation between the CDIS scores and the age of the student sample ($r = .05$). On the other hand, male respondents scored significantly higher in the CDIS than females ($M_s = 41.52, 35.38$, $SD_s = 17.12, 12.16$, respectively), yielding a mean difference of 6.14, $t(150) = 2.58$, $p < .01$, with a medium effect size ($d = 0.50$).

For the comparison of the CDIS with the three mental health measures, with Bonferroni correction ($.05/3$), a conservative significance level ($< .017$) was adopted. It was found that the CDIS correlated positively with depression and hopelessness ($r = .47$ and $.32$, respectively), but negatively with purpose in life ($r = -.35$), $p = .01$, 1-tailed. The directions of the correlation were consistent with our prediction and the construct validity of the CDIS was supported.

Concurrent-known-groups validity

Analysis was performed to examine whether the CDIS could distinguish the student group from the abuser group. The student group's mean score was significantly lower than that for the abuser group ($M_s = 38.89, 64.79$, $SDs = 15.45, 15.22$, respectively), $t(227) = -12.04$, $p < .0005$, 1-tailed. The data also revealed that the CDIS had a large effect size ($d = 1.7$) and a satisfactory concurrent-known-groups validity coefficient ($r_{pb} = .62$, $p < .0005$), accounting for nearly 40% of the variance in the criterion groups. The partial correlation coefficient between group-nature (i.e. student or abuser) and total scale score variables, controlled for respondents' gender and age variables, was found to be $.44$, $df = 225$, $p = .000$, 1-tailed.

Discussion

Validation results demonstrate that the CDIS has high reliability and a satisfactory level of validity. It can be used as a global assessment of an individual's beliefs and values relating to drug use, as well as actual drug abuse behavior, yet without being specific to any particular type of drug abused. In Hong Kong, the abuse

of cannabis, amphetamines, organic solvents and cough medicine among the young accounted for 51% of the young drug abusers. Twenty-one percent of these youngsters were known to be multiple drug users (Narcotic Division, 2000a, p.57). The wide applicability of the CDIS is one of its strength as an assessment tool.

The CDIS also has the advantage that it can be taken by individuals with low literacy. Given that active drug abusers usually have a limited concentration span, a shorter version in the form of two parallel versions could be developed. This would be particularly useful for use in treatment programs for periodic assessments or outcome evaluation. Apart from the detection of drug abuse, the CDIS will also be useful for screening and streaming clients for treatment and monitoring subsequent progress. With the CDIS, a more refined analysis of changes in the total context of drug abuse, rather than a single measure of abstinence currently emphasized in drug research, can be performed. Since there is not yet any Chinese scales for drug abuse, the CDIS would facilitate future clinical research and treatment evaluation in Hong Kong and other Chinese societies. Such

data will be useful for devising individualized forms of treatment, and eventually contributing to the search for economically viable models of treatment.

In this study, the small clinical sample has limited the setting of a cutting score for early identification of drug abusers. For clinical use, further validation is necessary in order to establish a clinical cut-off point. In future, we would replicate the findings with a larger sample that will also generate more information for the dimensionality of the scale.

Implications for Social Work Practice

Social workers in the course of their daily work in family and child services or youth work would be in the best position to detect problems related to teenage drug use, for example, in dealing with discipline problems posed by teenage drug abusers to their parents or teachers. Since early identification of young drug abusers is particularly important for their rehabilitation, social workers' background training in diagnostic and assessment skills would be relevant here. Furthermore, to be of value to social workers as an

assessment tool, the instrument developed should be convenient in administration. Field experience in the present study indicated that the CDIS can be completed by a 14 year-old student within twenty minutes. Chronic drug abusers with low literacy also have no difficulty in completing the scale with the assistance of workers.

In fact, there is evidence for the efficacy of social work involvement in drug rehabilitation work. Several studies have found that social workers are more helpful and render more satisfactory services in the social rehabilitation of drug abusers (e.g., Lai, 1997). It was also found that the protective factors against relapse are closely related to social support offered by employers, family members and friends, and also from formal support services, like job referral, accommodation and other welfare services. This highlights the problem of drug abuse as involving the totality of a person's life functioning, a focus well within the social work profession's legitimate domain, and one in which the profession should take a more active and essential role (Ng, 1998). The CDIS would add to the social workers' armamentarium in their service delivery in the drug field.

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Appendix

The Chinese Drug Involvement Scale (CDIS)

Items (translated version)	Corrected Item-Total Correlation
1. I have had the experience of confrontation with others without reasons after using drugs.	.49
2. My good friends would regard using drugs as very common.	.35
3. Using drugs will make me more confident.	.65
4. I believe that all my troubles will disappear after using drugs.	.61
5. I believe that I can get along with my friends better after using drugs.	.53
6. I believe that I will have a good time after taking drugs.	.54

7. I use drugs several times each week.	.51
8. I have had the experience of fainting after an overdose of drugs.	.51
9. Using drugs leads to my having more conflicts with my family.	.39
10. I will use drugs when I am unhappy.	.66
11. I have taken overdoses of drugs.	.60
12. When I use drugs together with my friends, I always use more than they do.	.37
13. I have promised myself not to abuse drugs.	.68
14. I will feel guilty if I abuse drugs.	.46
15. I will not abuse drugs.	.66
16. I have abused drugs in the past 30 days.	.45
17. I have many good friends who abuse drugs.	.59
18. My good friends have abused drugs in the past month.	.41

19. My good friends think it is stupid to abuse drugs.	.57
20. If I abuse drugs often, I will have trouble in my work or study.	.64
21. It is important to let others know that I do not abuse drugs.	.44
22. My health will be worse than the health of others if I abuse drugs.	.52

Note. To score the CDIS, the scores for items 13 to 15, and 19 to 22 need to be reversed.

Table

Characteristics of Respondents

Group	Student ^a	Abuser ^b
	<u>Percent</u>	<u>Percent</u>
Sex		
Male	57.2	79.2
Female	42.8	20.8

Age

13-15	51.0	4.1
16-18	49.0	9.5
19-29		31.1
30-39		24.3
40 & above		31.1
<u>M</u>	15.3	33.7
<u>SD</u>	1.4	12.7

Note. $\underline{a_n} = 152.$ $\underline{b_n} = 77.$