

**WHO CROSS-CULTURAL APPLICABILITY RESEARCH ON DIAGNOSIS AND  
ASSESSMENT OF SUBSTANCE USE DISORDERS:  
AN OVERVIEW OF METHODS AND SELECTED RESULTS**

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**ABSTRACT**

The cross-cultural applicability of criteria for the diagnosis of substance use disorders and of instruments used for their assessment were studied in nine cultures. The qualitative and quantitative methods used in the study are described. Equivalents for English terms and concepts were found for all instrument items, diagnostic criteria, diagnoses and concepts, although often there was no single term equivalent to the English in the languages studied. Items assuming self-consciousness about feelings, and imputing causal relations, posed difficulties in several cultures. Single equivalent terms were lacking for some diagnostic criteria, and criteria were sometimes not readily differentiated from one another. Several criteria -- narrowing of the drinking repertoire, time spent obtaining and using the drug, and tolerance for the drug -- were less easy to use in cultures other than the U.S. Thresholds for diagnosis used by clinicians often differed. In most cultures, clinicians were more likely to make a diagnosis of drug dependence than of alcohol dependence although behavioural signs were equivalent. The attitudes of societies to alcohol and drug use affects the use of criteria and the making of diagnoses.

**INTRODUCTION**

The WHO/NIH Joint Project on diagnosis and classification

Development of cross-culturally applicable diagnostic criteria and instruments for the assessment of mental disorders in different cultures has been one of the major goals in the WHO/NIH Joint Project on Diagnosis and Classification of Mental Disorders, Alcohol- and Drug-related Problems. This reflects the commitment of the World Health Organization (WHO) to the

development of a "common language" (Sartorius, 1989) which will allow mental health professionals and others concerned with the management of mental health and psychosocial problems to understand one another and work together.

The Joint Project started in 1979 as a collaborative endeavour between WHO and three U.S. National Institutes, the National Institute of Mental Health (NIMH), the National Institute on Alcohol Abuse and Alcoholism (NIAAA) and the National Institute on Drug Abuse (NIDA) -- formerly parts of the Alcohol, Drug Abuse and Mental Health Administration (ADAMHA) and now research institutes within the National Institutes of Health (NIH). In a series of workshops organized at the beginning of the project, experts from different countries, different cultures and a variety of clinical and social science traditions were invited to define problems and recommend activities which could lead to the development of crossculturally applicable instruments for the assessment of various aspects of mental and behavioural disorders, to the formulation of criteria for their diagnosis, and to the adoption of scientifically and practically useful international classifications (Sartorius, 1989).

More than 100 centres from all over the world have been participating in the various activities of the WHO/NIH Joint Project. Major achievements of this fruitful international collaboration have been related to the development of clinical and research diagnostic criteria for the ICD-10 Classification of Mental and Behavioural Disorders (WHO, 1992a; 1993) and instruments for their assessment. The Composite International Diagnostic Interview (CIDI)(Robins et al., 1989; WHO, 1990), and the Schedules for Clinical Assessment in Neuropsychiatry (SCAN)(Wing et al., 1990; WHO, 1992b), are members of the family of instruments developed within the WHO/NIH Joint Project.

#### The international diagnostic instruments

SCAN is a semi-structured diagnostic instrument primarily designed for use in diagnosing disorders and syndromes by clinicians, particularly psychiatrists and clinical psychologists; it may be administered by other health professionals with appropriate training. It offers considerable freedom for interviewers to frame questions about a particular symptom, and requests that they make a judgement about the presence or absence of a symptom defined in the SCAN glossary. Stemming from the tradition of the Present State Examination (PSE) developed at Maudsley Hospital in London, the SCAN has been developed as a clinical assessment tool for the assessment of a broad range of psychiatric symptoms, syndromes and disorders listed in the current classification systems (for details, see Wing et al., 1990).

CIDI is a highly structured interview schedule which is designed to be administered by trained lay interviewers. The instrument consists of fully spelt-out questions, fixed coding options and a clearly specified probing system that allow the interviewer to determine the severity and likely psychiatric significance of a positive symptom. The instrument is designed for adult respondents with varying educational and cultural backgrounds. Stemming from the Diagnostic Interview Schedule (DIS) which was developed at the Washington University, St. Louis and applied in the U.S. Epidemiological Catchment Area studies (Robins and Regier, 1991), the CIDI is primarily intended for epidemiological studies of mental disorders in different cultures and settings (for details, see Robins et al., 1989).

The traditions from which the CIDI and SCAN stem have been distinguished by a commitment to the operationalization of diagnostic concepts and categories in a reliable form. For

each diagnosis, a set of operational criteria were developed which were in principle objectively and reliably measurable. The reliability of an operational measure -- the degree to which it could be reproduced by an application of the same measure a second time or by a second diagnostician -- became a key criterion of its acceptability. With the issuance of the Third Revision of the Diagnostic and Statistical Manual of the American Psychiatric Association (DSM-III), this approach gained general acceptance in the U.S., and increasingly also in other countries. Its influence is strong in the mental disorders chapter of the new version of the International Classification of Diseases, ICD-10. With the advent of ICD-10's Classification of Mental and Behavioural Disorders (WHO, 1993), it might truly be said that the emphasis on operationalizability as the *sine qua non* of diagnosis of mental disorders has become a world standard.

#### The application of alcohol and drug concepts and diagnostic instruments cross-culturally

Operationalization is necessary for major studies in psychiatric epidemiology and in clinical trials. It may also be helpful to clinical practice. But it is not without hazards. This is particularly true when the resulting measures are to be used to compare rates or trends across cultures and societies, while the operational criteria are based on material drawn from a narrow cultural range. The application of culturally-specific descriptions and symptomatology to other cultures may lead to inappropriate diagnoses and conclusions (Room, 1984; Klausner and Foulks, 1982, Chapter 16).

There has already been an object lesson in this danger in the history of the concept of alcoholism. In the late 1940s and early 1950s, as "alcoholism" became the main alcohol-related psychiatric disorder, it was defined in rather culturally specific terms -- in terms, in fact, of the experience of an emerging U.S.-centred mutual help group, Alcoholics Anonymous. Thus the classic description of alcoholism by the leading alcohol scholar of the time, E.M. Jellinek (1952), was based on the results of questionnaires about symptomatology developed by and circulated among Alcoholics Anonymous members in the U.S. Only when Jellinek had acquired a wider experience in the field by working as a consultant to the World Health Organization in Geneva did he develop the idea that there were a number of culturally-influenced "species" of alcoholism, with different symptomatology (Jellinek, 1960a; 1960b). Jellinek's different species, distinguished by Greek letters, mapped onto the very different denotations he found that "alcoholism" had among health professionals in different cultures -- "gamma" for the "Anglo-Saxon" variety he had earlier described, "delta" for the French variety, "epsilon" for the Finnish variety.

Despite the possible pitfalls, there has been an increasing interest in applying clinical instruments developed in one culture in another cultural situation. Applying the Munich Alcoholism Test (MALT) developed in Germany to samples in Spain and Ecuador, Gorenc et al. (1984) found that 5 out of the 31 items were "relatively free of cultural differences" by their criteria. But the authors added that when used in Ecuador none of the items passed all five of the filters used to screen out items in the original German study.

The most ambitious effort in this direction was well under way before the CAR project started (Helzer & Canino, 1992). The effort was a serendipitous by-product of the wide international use of the DIS, an instrument originally developed for use in the U.S. In general, the DIS was applied without adaptation. Since the analysis is primarily at the level of diagnoses,

findings about the cross-cultural applicability of the instrument are mainly in the form of side-comments. An example of this is the notation that whether the "period of heavy drinking" required for a dependence diagnosis had to last two weeks or four weeks made an important difference in how many received the diagnosis among American Indians in the U.S., given a "well-defined cultural pattern of binge or episodic heavy drinking" (Helzer & Canino, 1992, p. 126).

An earlier WHO study also analyzed the cross-cultural applicability of alcohol dependence symptomatology (Hall et al., 1993). Using data-sets from six divergent countries which combined together drinkers among general health-service patients and clinical alcoholics, the study found a strong general factor for 13 dependence-related items in factor analyzing each country's data. This was interpreted as supporting the cross-cultural generalizability of the alcohol dependence syndrome, although alternative interpretations are possible for a finding of a general factor for symptomatic items in factor analyses in different societies.

#### The genesis and material of the Cross-Cultural Applicability (CAR) Study

Over the past 10 years both CIDI and SCAN were field-tested in more than 20 centres world-wide, and were found to be generally appropriate and reliable for use across cultures and settings (Wittchen et al., 1991). However, the field tests did not include large numbers of alcohol and drug users, so that the modifications of the substance use disorders sections of the instruments had not been field tested in different cultural settings.

Accordingly, an advisory group in September 1990 recommended a substantial programme of research on the cross-cultural applicability of the alcohol and drug sections of the international diagnostic instruments. The programme was conceived as having two phases: a study of the meanings and interpretations of alcohol and drug use and problems in different cultures, and of their implications for creating uniform diagnostic standards and international instruments applicable across cultures; and a cross-cultural study of the reliability and validity of the instruments. The present report is concerned with the first of these phases, known as the Cross-Cultural Applicability Research (CAR) study. The second phase of the programme of research is under way.

The CAR study was thus carried out in nine sites worldwide, selected for their cultural and linguistic diversity: Ankara, Turkey; Athens, Greece; Bangalore, India; Flagstaff, Arizona (Navajo); Ibadan, Nigeria; Jember, Romania; Mexico City, Mexico; Santander, Spain; and Seoul, Korea. The proximal aim of the study was to test and as necessary improve the cross-cultural applicability of two existing international diagnostic instruments -- the CIDI and the SCAN. Our task was simplified by the fact that for alcohol and drug conditions, the SCAN was clearly derivative from the CIDI, so that only for a few special topics was it necessary to cover two different approaches.

The study's design included five substudies with diverse data collection techniques and sampling frames, including a translation and back-translation study, key informant interviews and focus groups with cultural informants, self-administered questionnaires filled out by local clinicians, and trials of diagnostic schedules with "reference cases" in alcohol and drug treatment facilities. The findings of the study were planned to be used in: (a) future work improving of the diagnostic instruments and developing guidelines and instructions for their use in different cultures, (b) making the final adjustments for the large-scale testing of these instruments for

reliability and validity in population-based samples, (c) analyzing of the cross-cultural applicability of concepts, criteria and symptoms of substance use disorders and their operationalizations, and (d) producing recommendations concerning cross-cultural research in the field of alcohol, drug use and mental health.

In the present paper, we give an outline of the CAR project and its findings on the applicability in different cultural circumstances of items, criteria, diagnoses and concepts relevant particularly to four major alcohol diagnoses in ICD-10: acute intoxication, harmful use of alcohol, the alcohol withdrawal syndrome, and the alcohol dependence syndrome.

Our analysis is primarily based on English-language reports of findings from the collaborating teams of investigators at each study site. As each component of the study was finished, the investigators at each site prepared a report in English on the results. In addition, each site prepared an overall report on the findings from that site for inclusion as a chapter in a book on the study (L. Bennett et al., Use and Abuse of Alcohol and Drugs in Different Cultures: A Nine-Country Study, in preparation). The present paper is based on these reports, and quotes from them as appropriate.

## **PREMISES OF THE STUDY**

As we have described, the central purpose of the CAR project was to study the cross-cultural applicability of the alcohol and drug portions of the CIDI and SCAN instruments. Early in the project, it was concluded that this required a study with a broader reach than simply settling the issue of whether CIDI or SCAN items could be translated and understood in different languages and cultures. Behind the items lay the diagnostic criteria they were designed to measure, and behind the diagnostic criteria lay the diagnoses themselves and the conceptualizations on which they were based. A full understanding of cross-cultural applicability and comparability required investigating the cultural relevance of and variation in the diagnoses and criteria as well as in the instrument items.

The CIDI and SCAN specifically measure three ICD-10 diagnoses: the Dependence Syndrome, Withdrawal State, and Harmful Use. The instruments also measure the DSM-III-R's version of the first two diagnoses, along with the DSM Alcohol/Drug Abuse diagnosis. While each of these diagnoses are given a technical meaning and specific criteria in the nosologies, we may expect their practical use to be influenced by diagnostic concepts which are widely recognized in lay as well as professional circles -- such concepts as alcoholism, addiction, withdrawal, and abuse. Several of the component criteria for the Dependence Syndrome themselves also tap into well-recognized diagnostic concepts. Besides withdrawal, these include increased tolerance, compulsion, impairment or loss of control, and craving. Associated with each diagnosis or diagnostic criterion in the ICD-10 and DSM nosologies is one or more characterizations or symptoms; in a more or less direct fashion, these are translated into items or subitems in the CIDI and SCAN.

The CAR study therefore set out to measure the cross-cultural applicability of terms and formulations which fell at each of four distinguishable conceptual levels: at the level of typifications or characterizations of problems related to drinking or drug use; at the level of diagnoses; at the level of diagnostic criteria; and at the level of instrument items. As we shall describe, covering this terrain required the use of several methodologies in a series of substudies.

Across the various methods and substudies, our general approach has been comparative and contrastive. The fundamental comparison of the study, of course, is between the nine cultures and eight primary languages of the study. In each site, data were collected systematically for alcohol and for one other drug class of interest, allowing contrasts of the application of concepts and diagnoses to alcohol and to the drug class. The data also allow for comparisons within each culture, such as comparisons of professional and lay terminology related to each diagnostic concept. Thus respondents were asked for their own ways of describing behaviour covered by such terms as intoxication, withdrawal, tolerance, and harmful use, as well as about their understanding of the meanings of diagnostic terms -- both those in the nosologies and those in popular use, such as alcoholism and addiction (see Table 1).

In addition to our interest in differences in the meaning of terms and concepts cross-culturally, across drug classes, and between experts, professionals, and lay persons, we were also particularly interested in differences in the scope of application of the terms and concepts. For example, while the ideal-type definition of alcoholism given by respondents from different cultures might be quite similar, there could still be vast differences in the threshold of problem severity at which they would apply the term alcoholism to a particular case. This question of the scope of application is as significant as the meaning assigned to a diagnosis in determining the diagnostic process in a given culture. We thus asked respondents themselves to compare and differentiate between states which were and were not of diagnostic significance (see Table 1). One such set of contrasts was between "normal" use of a particular drug, abuse of the drug, and harmful use. Another was between simple intoxication and intoxication which merited medical attention (assuming the latter to correspond to the Acute Intoxication diagnosis of ICD-10). Yet another was between a hangover (or the equivalent for drugs other than alcohol) and the withdrawal state. In one of the substudies (SARS), the boundaries of application of dependence concepts were also explored, with questions concerning whether a hypothetical person with particular symptoms or clusters of symptoms should be considered addicted or alcoholic.

## **THE STUDY SITES AND THE PLACE OF ALCOHOL AND DRUGS IN THEIR CULTURES**

Nine centres from different cultures and representing different language groups participated in the CAR study: Ankara, Turkey; Athens, Greece; Bangalore, India; Flagstaff, Arizona, USA; Ibadan, Nigeria; Jibou, Romania; Mexico City, Mexico; Santander, Spain; and Seoul, Korea. The sites were selected to assure a wide range of diversity in language-groups of the main language and in cultural patterns of drinking and drug use. The availability on site of expert investigators with a command of English and an ability to mount a substantial project was also a practical consideration. As Table 2 summarizes, the nine sites include substantial variation in dominant religions. They are also at different levels of economic development and geographically widely dispersed.

In each site, the main emphasis of the study was on the predominant local culture. In many cases, the predominant local culture was also the main national ethnicity and people living there spoke the dominant national language. In other cases, the cultural and linguistic situation was more complex. In Bangalore, the emphasis was on Kannada, the local language and ethnicity, and likewise in Ibadan the emphasis was on Yoruba, but in both places some data were collected

in English, which is in widespread use as a lingua franca. In Flagstaff, the emphasis was on Navajo, an American Indian nation with its own language, but all data were collected in English, since English is known to nearly all and is the usual language of therapeutic and official communication, while not all Navajos understand spoken Navajo. The inclusion of both Santander, Spain and Mexico City allowed a comparison of two very diverse cultures sharing a common language.

The sites included in the CAR study not only represented a diversity of language groups, but also varied greatly in terms of the place of alcohol in the culture. The position of alcohol in a given culture is often discussed in terms of a rough dimension of greater or less "wetness" (Pittman, 1967; Room, 1989; Room, 1992; Levine 1992). In the ideal type of a wet culture, nearly everybody drinks nearly every day; alcohol is a domesticated and indeed banalized part of daily life. Heavy drinking is thus an extension of social drinking; the norm for the heavy drinker, indeed, is to keep drunken behaviour as much like sober behaviour as possible. As described by the study's investigators and respondents, the study sites in Santander, Spain and Athens, Greece probably come as close as anywhere to embodying this "wet" type. Jebel, Romania would also approach this end of the continuum, but with the harsher economic conditions enforcing less regularity in drinking, and perhaps also with heavy drinking seen somewhat more as "time out".

At the "dry" end of the continuum, as it is commonly discussed, are cultures in which drinking is set apart from daily life, on fiestas or weekends, and in which there are many abstainers. Drinking is "time out" behaviour, and drunkenness can serve as an explanation of bad behaviour (MacAndrew and Edgerton, 1969). In a further extension of this, indeed, extreme drunkenness to the point of passing out can take on a positive value for some in the culture. Among our study sites, extremely heavy drinking is well-established in the culture in Flagstaff, Arizona (see also Kunitz & Levy, 1994) and Seoul, South Korea, even though only a substantial minority of the population engages in it. The other four study sites all show a pattern where abstention is common, and drinking is defined as potentially disinhibiting. In Ankara, Turkey and Bangalore, India, indeed, most adults are abstainers, and in Bangalore any drinking at all may be problematized and seen by the drinker's family as causing bad behaviour.

The per-capita consumption figures shown in Table 1 confirm the places of Athens, Santander and Jebel at the "wetter" end of the drinking spectrum, and the status of Ankara, Bangalore and Mexico City as located in societies with much lower consumption. The relatively high per-capita consumption in South Korea, however, alerts us that a differentiation in terms of the drama surrounding drinking is not only a matter of the level of consumption. The level of drinking in South Korea has risen dramatically in the last three decades, but the cultural patterning of drinking, with an emphasis on ostensive drinking bouts, is far removed from the banalized pattern of everyday drinking in a wine culture. The cultural variation to be found among the "dryer" cultures in the CAR study material suggests, in fact, that a single "wet/dry" continuum does not adequately capture the dimensions of cultural variation in the position of drinking.

Limits on resources meant that data collection was limited to covering alcohol and one other drug class at each site. The other drug or class of drugs covered at each site was chosen as having the highest apparent prevalence of harmful use there. In Ankara, Athens and Santander, heroin was chosen as the most significant drug, while cannabis was the choice in Bangalore, Flagstaff, Ibadan and Mexico City. In Jebel, the choice was sedative medications, and in Seoul

amphetamines. In most sites, use of the other drug covered by the study was seen as substantially more culturally alien than drinking alcoholic beverages. However, in Jebel the use of sedatives is rather normalized in the culture, while in Bangalore drinking alcoholic beverages may be at least as marginalized as using cannabis.

## **STUDY METHODS**

The study represented a multidisciplinary endeavour of psychiatrists, anthropologists, sociologists, epidemiologists, psychologists and linguists, with the lead provided at most centres by psychiatrists and their staff. All the participants listed at the head of this article, and some others as well, were involved in the design of the study and in an intense phase of writing, testing and refining the new or revised instruments used in the study. Since the study's use of qualitative and ethnographic methods in the context of a multinational effort in psychiatric epidemiology represented a new departure, considerable effort went into training in and demonstration of the methods. In additions to demonstrations as part of the meetings of investigators, two training courses were organized for investigators and interviewers, covering CIDI and SCAN administration as well as key informant interview and focus group techniques.

The study consisted of five core components, designed to complement each other with different methods, study populations, and focal concerns. A strength of the study's design is its diversity of data collection methods, which allowed for some convergent validation of findings from different substudies.

Due to the compressed timetable and limited resources of the study, not all components were completed at each site, and there was also variation between sites, as we shall describe, in the extent to which the full design of a component was carried out. Overall, the completion of the greater part of the full design is a tribute to the commitment and perseverance of the site investigators.

### **1. *Bilingual expert consultation and exploratory translation/back-translation***

A bilingual expert group was formed at each site, consisting of individuals conversant both with the native language and with English who could be considered experts in the alcohol and drug field. The bilingual expert group conducted a specific protocol of translation and back-translation of the CIDI and SCAN questionnaires, as well as of the other questionnaires and materials used in the CAR study.

The experts were selected on the basis of their ability to elicit information from monolingual informants, and served as liaisons between investigators, interviewers and other members of the study teams. For the translation study, a monolingual group of persons knowledgeable in the alcohol and drug field was also formed, as a group which could register the comprehensibility of the study materials (as translated and edited by the bilingual group) for study subjects who did not possess a knowledge of English.

The exploratory translation and back-translation exercise was viewed as a sub-study in its own right, contributing to the understanding of the cross-cultural applicability of concepts and their operationalization. In addition to assessing the comprehensibility of CIDI and SCAN questions in the particular culture, the exercise explored cultural obstacles related to concepts of substance abuse which should be taken into account in the instruments. The translation process



was also seen as a source of data on cultural and linguistic meanings of terms and concepts and was a necessary step in undertaking other components of the CAR study.

The steps followed in the translation and back-translation of instruments and interview schedules were as follows: (i) the translation from English into the target language was prepared by one or more translators who were not psychiatrists or other mental health professionals; (ii) the translated version was discussed by the bilingual expert group to identify areas of likely difficulty and to agree on issues to be explored in the monolingual groups; (iii) the members of the bilingual group discussed the translated version with the monolingual group; (iv) after reviewing the translation in question, the monolingual group leaders reported back to the bilingual group regarding whether the questions were comprehensible, whether there were cultural obstacles to responding to the questions, and whether there were other important problems related to specific symptoms which should be added to questions in CIDI and/or SCAN; (v) the bilingual expert group discussed these reports and decided whether there were major problems which would require a second revision of the translation to be passed in the same way through the monolingual group; (vi) the translation was back-translated by another (non-professional) individual; and (vii) the bilingual group prepared a summary report specifying particular areas which needed in-depth exploration and addressing in the final report of the study. Typically, the bilingual expert groups discussed the results of each component of the study as it was completed and made summary remarks for the final report.

In the case of Flagstaff, an early finding of the study was that translating all the study instruments into Navajo would not be a sensible choice, given that Navajo is primarily a spoken and not a written language, and given the bilingual patterning of daily life, with health and social service interactions commonly conducted in English. However, a translation of the CIDI was prepared in oral form on audiotape, and extensive lists of translations of terms into Navajo were made and drawn on for the findings of the study. The translation/back translation study was completed in each of the other eight sites.

## **2. *Key informant interviews***

The major objective of the key informant substudy was to elicit information about how different types of people living in each society thought about the main concepts which are used in the diagnosis of alcohol and drug disorders. Informants were encouraged to answer as a spokesperson for the culture as a whole, rather than as an individual. Investigators were trained to use semi-structured interviewing techniques, following an interview schedule which elicited largely open-ended answers. The interview was conducted in a conversational style, starting with open-ended, general questions about what words or phrases the informant might use to describe a particular behaviour or state related to drinking or drug use. Subsequently, more specific questions asked about the meaning of particular conceptual or diagnostic terms, and how people in the culture might distinguish them from other terms. The schedule included optional probes to follow up answers to the main questions. Detailed information was provided to the investigators and interviewers regarding the intent of each question and guidelines to follow in asking questions.

Each centre was asked to interview at least 20 informants concerning concepts and terms used for alcohol, and 20 informants concerning concepts and diagnoses used for the other drug

type studied at that centre. The aim was to tap both lay and professional constituencies with substantial knowledge concerning drinking or drug use, but reaching well beyond the narrow and often cosmopolitan circles of specialist expertise. It was suggested that each centre include within the 20 informants for each drug 3 health workers working in the area of alcohol or drug problems, 7 other health or social service workers in regular contact with alcohol or drug problems, 5 heavy users of alcohol or the drug, and 5 family members of heavy users. In most cases, the heavy users and families were drawn from clinical cases and their families. In using the relatively limited resources of the study, the choice was thus not to expend resources on interviewing members of the general population who might have only a distant and hazy knowledge concerning alcohol or drug matters, but rather to elicit information from knowledgeable constituencies, lay and professional.

With minor variations, each centre collected the key informant data in accordance with the suggested methods and sampling. Besides the written record of the interview, most or all informant interviews were tape-recorded in all centres other than Jebel. Participating centres were able to put much effort into carrying out the substudy well, since it was the first major data collection effort of the study, and one which was characterized by the Jebel team, for instance, as "the real core of the research".

### **3. *Focus groups***

As the CAR study was designed, the focus group substudy was intended to allow a more extended discussion among members of different social constituencies of concepts and terms identified as problematic in the translation and the key informant substudies. Group discussion of conceptual meanings and differences, it was felt, would help clarify ways of thinking in the culture and perhaps also areas where there was no clear cultural consensus.

Each focus group addressed a relatively small number of general questions:

- \* what is normal and abnormal use of the substance (alcohol or drug);
  - \* what are the meanings of the various diagnostic terms related to the concept of alcohol/drug dependence;
  - \* what are the similarities and differences between alcohol and drug abuse and addiction;
- and
- \* which prevention and intervention strategies are most likely to be effective against alcohol- or drug-related problems in the culture?

The focus group interview technique used aimed to facilitate interaction among group members and to allow free expression of the opinions of group members. In the course of focus groups, the interviewers/researchers had several tasks: to moderate, to listen, to observe and to analyze discussions. There was no pressure on the moderator to have the group reach consensus. These group discussions were meant to provide more information on how alcohol and drug problems are seen in each culture, how the questions about these problems can be formulated in a culturally appropriate way, and how well diagnostic criteria and concepts of substance use disorders apply in each culture.

Focus groups were organized as discussions with seven to ten participants. Study sites were asked to convene separate focus groups for each of five categories of participants: (a) psychiatrists and other professionals with alcohol or drug diagnostic experience; (b) other health

professionals such as family physicians, social workers or nurses; (c) other community workers who dealt with alcohol and drug problems, such as policemen, judges or priests, (d) members of the culture who used alcohol or drugs heavily, and (e) family members of heavy alcohol or drug users.

All sites convened at least 2 focus groups, but the limited resources, the backbreaking CAR fieldwork schedule, and in some cases the difficulty of finding members of a constituency, limited the extent of the focus group substudy. As for the key informant interviews, the study by design concentrated data-collection efforts on relatively knowledgeable constituencies, lay and professional. All sites conducted a focus group with heavy alcohol users (usually clinical or recovering cases; including some drug users in Flagstaff); most sites conducted a separate focus group with heavy drug users (not Jebel or Flagstaff); most sites conducted one or more groups with psychiatrists and other health professionals (not Mexico City or Seoul); and Bangalore, Flagstaff, Ibadan and Jebel conducted groups with family members of alcohol or drug clients.

#### **4. *Self-administered Rating Schedule (SARS)***

The SARS sub-study was primarily focused on obtaining views from treatment providers concerning the cultural applicability of particular CIDI and SCAN items and their appropriateness as indicators of diagnostic criteria. The questions asked in it were pitched at a lower level of generality from the preceding substudies, namely that of the individual SCAN or CIDI item. The precoded SARS questionnaires aimed (i) to elicit data in a systematic way on the extent to which various symptom-items or question-items represented diagnostic criteria in a particular culture and their cultural appropriateness; (ii) to assess which item or subset of items represented the minimum set to represent or cover adequately and completely a diagnostic criterion; (iii) to explore the cultural appropriateness of indicators of harmful use, abuse and dependence in different cultures; and (iv) to obtain suggestions on alternative or additional symptoms or criteria that are needed to better represent concepts of alcohol and drug abuse and dependence across the cultures.

Five separate questionnaires were used in the SARS substudy. The SARS Cultural Appropriateness (SARS-CA) questionnaires, one for alcohol and one for drugs, were intended to be filled out by social and health workers dealing with alcohol and drug-related problems, but not necessarily schooled in diagnostic concepts and techniques, while the SARS Diagnostic (SARS-DX) questionnaires for alcohol and for drugs were intended to be filled out by health professionals familiar with psychiatric diagnostic systems. A Slang/Street Name Drug Supplement (SARS-SDS) questionnaire was also developed for the identification of culturally appropriate terminology for various types of drugs at each site.

Fieldwork on the SARS substudy was carried out on an expedited timetable, since the substudy was a late addition to the CAR study, and in several sites required extensive translation. In the event, both the CA and DX versions were primarily administered to expert staff close at hand to the investigators; overall, 66% of those filling out the DX, and 46% of those filling out the CA, were psychiatrists, and over half of those filling out each form had jobs which included research work in the alcohol field. At least 15 responses to each of the four forms were gathered in each of seven sites: Ankara (N= 106 CA or DX forms completed), Athens (N= 66), Bangalore (N= 154), Ibadan (N= 60), Jebel (N= 61), Mexico City (N= 67) and Santander (N= 60).

## 5. **Reference cases**

The reference cases component of the CAR study was designed to focus on the actual formulation and wording of alcohol- and drug-related questions in the diagnostic instruments, as they were administered to individuals known to have alcohol and/or alcohol problems ("reference cases"). As the study was designed, subjects were to be first interviewed with the alcohol and drug sections of CIDI or SCAN, and then questioned in a semi-structured exploratory interview about the meaning of, and concrete details behind, their answers to CIDI and SCAN questions. The draft schedule also included alternative formulations of items and follow-up questions to ask respondents about their views and understanding of specific items (e.g., "You mentioned that you found it difficult to stop drinking before you became completely intoxicated. Please describe to me what it means to you to be *completely intoxicated*. What are the signs of *complete intoxication*?").

In the design of the reference cases component, a minimum of 24 cases per centre were to be assessed, including substance users with mild problems and those with severe problems (but without serious cognitive impairments). Half of the cases were to be patients who had received treatment for alcohol- or drug-related problems; the other half had not received any treatment. In the selection of subjects, both alcohol and drug users were to be included, drawn from varying socio-demographic groups.

The timetable tied to the study's funding meant that work on this component had to be considerably curtailed; it was decided in the course of the study that the component would be optional. Four of sites collected data from 21-24 cases (Bangalore, Ibadan, Jebel and Mexico City), while Santander collected 10 cases, Athens 15 and Ankara 32. The semi-structured followup was dropped, and in almost all cases, data collection was limited to asking the CIDI alcohol and drug schedules, and comparing the results in a case conference with expert diagnoses.

## **STUDY LIMITATIONS**

Among the limitations inherent to the CAR project's research design, four are of particular relevance to this report. First, as we have noted, there is some unevenness in the data collected, due to limited resources and the inherent difficulty of collecting data simultaneously in nine geographically dispersed sites, and this limits the scope of the cross-cultural analysis. Second, cross-cultural analysis is also limited by the fact that the second drug class, besides alcohol, considered in the project varied by study site. This is in part simply a reflection of reality: commonly used drugs vary considerably by cultural setting. It also reflected that in-depth information could only manageably be collected on one other drug class besides alcohol. Consequently, while we draw on the drug findings in the present report, we focus on conceptions of alcohol-related problems, since it is for these that the most comprehensive cross-cultural data are available.

Third, the scope of the study inevitably limited the depth of data collected on particular topics in particular cultures. A whole study, for example, might well be focused on the meaningfulness and boundaries between terms for hangover and withdrawal in Korean, and an ethnographer or other researcher doing such a study would undoubtedly be able to collect deeper and richer data than could be done in the present study (for an example of such a study, see

Taipale, 1979). On the other hand, the cross-cultural design of the CAR study allowed an explicit comparative framing which is unusual in detailed studies, and indeed in the literature. The present study offers a rich lode of tentative observations and conclusions to be tested and refined in more detailed studies.

Fourth, the CAR project relied on the extensive cooperation of treatment professionals, and particularly of psychiatrists, who served both as investigators and as respondents in various facets of the research. Many of these professionals received training in the U.S. or British psychiatric and nosological traditions, and this may have influenced their perception and description of indigenous concepts and terminology. Furthermore, the respondents to the study, lay and professional, were by design more knowledgeable about alcohol or drugs than the average person in their culture. Concepts and perspectives may thus be more sharply defined in the study results than they would be in general discourse in the culture.

It should be recognized that the results reported here are derived from interpretation, in two different senses of the term. In the first place, we are relying on summaries in English of what informants and respondents had to say, mostly in another language. To get these statements and thoughts into a cross-cultural comparative frame, they have had to pass through translation -- a methodological limitation inherent in comparative research across languages. In the second place, these summaries have been prepared and organized by very special cultural representatives -- in most sites, bilingual research psychiatrists. On the one hand, the special expertise and cultural position of the site investigators has been essential to the study. But on the other hand, it is possible that their familiarity with international concepts and terms has pulled the study material closer to those concepts and terms than would otherwise have been the case.

## **SELECTED RESULTS FROM CROSS-CULTURAL ANALYSIS**

A full discussion of the results of the study is presented elsewhere (L. Bennett et al., Use and Abuse of Alcohol and Drugs in Different Cultures: A Nine-Country Study, in preparation). The findings described here serve as an illustration of the wealth of data collected and of some of the possible ways of using it.

### **1. *At the level of instrument items***

The findings of the CAR study generally support the feasibility of translating instruments like CIDI and SCAN into a diversity of languages in very different cultural circumstances and getting back meaningful and usable answers. At the most concrete level of analysis, then, the overall findings of the study are encouraging of cross-cultural work on diagnostic instruments in the alcohol and drug arena.

But the findings also suggest substantial caution both in the translation and interview procedures of such studies and in the interpretation of their results. At the item level, some of the difficulties have obvious solutions: for instance, to ask about amount of drinking in terms of customary beverages and container sizes, and to substitute local modes of transportation as appropriate for "bicycle, car or boat". But not all of the problems can be solved so simply. The meaning or underlying assumptions built into a CIDI item may be quite foreign to the language or culture.

An overarching finding, in fact, is that the diagnostic criteria and their operationalizations

assume a self-consciousness about feelings, knowledge and consciousness which is foreign to the folk traditions of some cultures. Here are some examples of problems of this sort in translating the study materials for use in different sites:

\* in Kannada, "feel emotionally" was translated to "mental state", with the explanation that there was no simple word for emotion in Kannada; the only available word was seen as "bookish", that is, not in the common vernacular language. "Feel" after drinking was translated with a word which also means experience. Positive and negative feelings became good/pleasant and bad/unpleasant experiences.

\* "anxiety" is a new term in Romanian and not easily distinguished from the sensation of fear.

\* in Korea, "many people cannot distinguish feelings from thinking". The word that connotes feeling is rarely used in conversation, and is more comfortably used for physical sensations (do you feel this pin prick?) than for affective states (how do you feel about this?). Korean "has many adjectives and expressions, but they are not well differentiated in terms of emotions, thoughts and sensations".

\* in Yoruba, the term "emotion" was difficult to convey.

The CIDI items often also have built-in attributional, causal and other relational assumptions which are not customary in some languages and cultures. Such language as "trouble because of drinking", "after you had realized it had caused you ...", "where it increased your chances of getting hurt" presume both self-consciousness and a style of causal attribution which is unrecognizable in some cultures. Some items also build in assumptions about intentionality which do not travel well; thus it was reported that in Ankara respondents found vague and inscrutable the idea of intention at the beginning of a drinking occasion, as in drinking "for a longer period of time than you intended to".

Some of the language in the items which cause difficulty is not part of the main meaning of the item, but instead is derived from a well-established English-language style of question-item construction which uses introductory phrases such as "did you ever find" or "did you ever feel" as a way of softening items which might sound accusatory and making them more colloquial. These difficulties are amenable to solution. The translation can drop the "find" and the "feel", for instance, from such constructions. However, this leaves open the question of whether the item really offers a comparable stimulus without the softening effect of such phrases.

While discrepancies and difficulties in the cultural translation of individual items can sometimes be resolved through rewording, in some cases our analysis suggested that the problems in translation were symptomatic of deeper problems with how well particular concepts travelled across cultural boundaries.

## **2. *At the level of criteria***

As finally adopted, the ICD-10 dependence syndrome has six criteria, three of which must have been exhibited or experienced to make the diagnosis. Two of the criteria -- withdrawal or use to relieve withdrawal, and using despite harmful consequences -- relate to phenomena, withdrawal and harmful use, which are ICD-10 diagnoses in their own right, and will be discussed in the next section. Other criteria cover craving or compulsion; loss or impairment of control; tolerance; and neglect of pleasures or interests or increased time spent seeking or using (see Table

1). In the text of ICD-10 concerning the dependence syndrome in the "clinical descriptions and diagnostic guidelines" (WHO, 1992a), though not in the diagnostic criteria for research (WHO, 1993), two other aspects which had originally been proposed as criteria are mentioned: rapid reinstatement, and narrowing of the repertoire of use. Rapid reinstatement had already been dropped from the ICD-10 list of criteria by the inception of the CAR study, but narrowing of the repertoire was included in the study. The findings on the responses of key informants at each site concerning the applicability of the alcohol dependence syndrome criteria are summarized in Table 3.

In a majority of cultural situations, **narrowing of the repertoire** was felt to be neither clearly definable nor an appropriate indicator of alcohol dependence. In some cases, this was because the traditional cultural repertoire of patterns of use was narrow for all: in Santander, for instance, "the consumption pattern is socially established, and heavy consumers tend to adopt the socially accepted pattern", and in Bangalore, the concept is "rather alien ... insofar as there is not a wide repertoire to begin with".

All sites recognized phenomena related to **tolerance**, though only in a minority of the sites was there a specific term for the concept in ordinary use. The idea of tolerance for alcohol often elicited responses indicating that this state was not viewed in the culture as a symptom of pathology, or as associated with problematic drinking; often, indeed, it had positive associations. In a wetter cultural context such as Santander, the connotation was of an ability to drink without behavioural change. In a context like Seoul, where behavioural change with drinking was expected, the connotation was of endurance or immunity; here it was declining rather than increasing tolerance which was seen as a marker for alcoholism. The terms used in Ankara connote being able to hold one's liquor as a signal of manhood, while in Bangalore and Jebel the term "tolerance" was frequently assigned such meanings as being indulgent, accustomed to, or attracted to.

In several sites, tolerance was understood in its technical meaning for the drug type included in the study but not for alcohol. This was an example of a wider phenomenon encountered in the study, where the relative novelty of drug use in the culture had brought with it technical and loan-words, while the understanding of alcohol disorders remained organized around older concepts and traditional language. For instance, in Jebel both professional and lay people use primarily pejorative words describing drinking behaviour and social reactions to drinking, words such as etilic (heavy ethanol user), betiv (drunkard) and alcoholic (alcoholic), rather than professional terms. But

"in contrast to the language used in the alcohol field, Romanians have adopted the modern language of professionals when describing the use of drugs such as benzodiazepines or hypnotics. Drug users and lay people frequently use words such as intoxication, dependence, abuse, tolerance, etc., the very words which they reject for the alcohol field." In all sites except Bangalore, there was a tendency to see drug use in more clinical terms than alcohol use.

Concepts and terms around **compulsion or craving** were recognized in most of the sites, but the meaning was often not differentiated from loss or impairment of control or from dependence more generally. In Bangalore, for instance, the concept of craving was recognized, but it was equated with loss of control. In some sites, the usual terminology was closer to "having

a desire or urge", and it took some explanation to convey to respondents the connotation of an irresistible urge. In Cantabria, Spain, the best equivalent term was a local word unlisted in Spanish dictionaries; the term was unknown in Mexico City.

**Impaired control** of drinking was a recognizable concept everywhere, though its meaning varied between cultural settings. In Athens, it referred to incompetent drinking, the drinker's failure to keep behaviour appropriate to the context and circumstances, while in Bangalore the emphasis was on a generalized craving taking over the drinker's whole life. In some places (Athens, Jebel and Mexico City) impaired control was seen as the characteristic which distinguished alcoholics from others. In the Key Informant substudy, respondents were asked whether they thought the amount people drink was controlled by availability or by people's self-control. In Ibadan and Bangalore most respondents saw the control as external -- that drinkers had no inherent self-control over their consumption. In Seoul, losing control was not seen as problematic or unusual, but rather as the purpose of drinking. Along with respondents in Flagstaff, where the questions tapped into the Navajo cultural value on personal autonomy, Seoul respondents showed the strongest commitment to the idea that control of drinking was always a matter of personal choice.

**Neglect of alternative pleasures or increased time seeking or using** proved to be a difficult criterion to understand in some cultural situations. In several sites, including Santander and Ibadan, alcohol was so easily available that time spent procuring made no sense to informants as an indicator of anything. In Bangalore, time was not viewed as a scarce or expendable commodity, so that time devoted to drinking or drug use was not seen as a problem, except if the time was subtracted from work time. The notion of alternate pleasures also caused trouble: in Romania, it was remarked, "almost all pleasures are related to alcohol consumption". Giving up social or recreational activities for drinking was not seen as much of a problem in Ibadan, since drinking "could in itself be the social or recreational activity of the individual". The criterion was more commonly recognized as a problem with respect to drug use.

In responses to the SARS self-rating substudy, elements of three criteria stood out in all sites as among the lowest-rated in terms of their "cultural appropriateness" (how understandable and how acceptable they were) as "alcohol-related symptom items": narrowing of the repertoire, time spent obtaining, and tolerance when defined as the ability to function at doses which would impair the casual user (Dawson, Grant and Towle, 1993). While withdrawal, drinking to relieve withdrawal, and continued use despite social problems ranked highest overall across the seven participating sites in their "cultural appropriateness" as items, there was substantial variation between sites in their ranking.

These results partially converge with the results from the qualitative substudies. But the message we are getting from the key informant interviews is probably mixed. In part we are being informed about the recognizability of the concept and terminology in a particular cultural frame. But also included in the message, we may suspect, is a judgement about how much the behaviour or state referred to is or should be considered a problem in a particular cultural situation -- both as a problem in itself, and as a potential indicator of dependence/alcoholism. From these mixed perspectives, narrowing of the drinking repertoire, tolerance and time spent or pleasures given up are all quite widely seen as questionable criteria, particularly when applied to a culturally entrenched drug like alcohol.



### 3. *At the level of concepts and diagnoses*

As noted above, we took the distinction between the **Acute Intoxication** diagnosis of ICD-10 and other intoxication as being that the former required medical attention. In line with this, respondents in the Key Informant study were asked about signs of drunkenness, about what signs would indicate that the drinker is in need of help from others, and about what signs would indicate a need for medical attention. In several sites, there was no exact equivalent of intoxication, as a semi-technical term in English. The equivalent term in Spanish would indicate poisoning, while the most common term in Greek, methi, has positive connotations, being also used as a metaphor to indicate extreme happiness.

Table 4 shows the signs of alcohol intoxication mentioned in each of the sites, with the sites arranged in rough order of descending "wetness". Respondents at most sites mention lack of coordination, and this is the primary indication that help from others will be needed. Aggression is also commonly mentioned as a sign of intoxication; only in Santander and Athens is being quiet or sad mentioned as a sign. Despite the major differences between the sites in drinking culture, there is strong agreement on when medical attention is seen as necessary: basically, this is when the drinker has lost consciousness or is suffering seizures. "Ordinary" drunkenness, short of serious CNS disturbance, is thus clearly defined as not requiring medical attention.

The existence of **withdrawal** symptoms was recognized everywhere, although in most sites there was no single commonly understood term for the phenomena. In Romanian, for instance, professionals used the term sevrāj (weaning), but this was not understood by lay people, who used words meaning to renounce, abstain, or stop oneself. In Ankara, withdrawal was sometimes confused with craving: "these two states cannot be differentiated easily and clearly. Alcoholic patients and some family members often used the term 'crisis' instead of either of these terms."

In several of the study sites, there was no clear distinction for alcohol between the withdrawal syndrome and a hangover (see Table 5). In Santander, for instance, one-third of the key informants mentioned the word for hangover when trying to describe the concept of withdrawal. In Athens, "the transition from hangover to withdrawal was defined as the point when the person starts drinking in order to cover up the unpleasant experiences of hangover".

Mexican respondents distinguished between a moral and a physical hangover, and in several other sites, too, regret and guilt were described as part of a hangover. Feelings of guilt were prominent among the descriptions of a hangover in Athens, but were not included in the descriptions of withdrawal. In Ibadan, "while most respondents emphasized regret as an important effect of hangover,... only one key informant mentioned regret as a hallmark of withdrawal". The Ibadan investigators suggest that the respondents may have felt that those who had progressed to withdrawal are beyond feeling remorse, but it is possible too that withdrawal, as a concept more within the medical and technical sphere, attracts fewer moralized connotations.

Study sites with marijuana as the other drug studied reported either no withdrawal syndrome from cannabis or a much less clearly defined cluster of symptoms than for alcohol. There was if anything even less distinction between hangover and withdrawal.

In lay usage, there was little distinction at any site between **harmful use** and **abuse**. Harmful use was understood to include social, economic and family problems as well as physical and psychic health problems; the intention in ICD-10 to confine the terms to harm to health will

clearly be hard to realize. For illicit drugs, many sites reported that lay respondents made no distinction between use and abuse or harmful use. Many Navajo respondents also denied that there was a normal drinking pattern for Navajo people, distinguishable from harmful use. In Bangalore, too, some respondents maintained that there was no such thing as normal use of alcohol -- that all use is harmful and will lead to addiction (see also Bennett et al., 1993).

Terms for **alcoholism** and **addiction** were well recognized at all sites, but **dependence** or its equivalent was a new term to many respondents. Respondents in Seoul equated the term with intoxication. In Romanian, dependence carried a main meaning of subjugation or subordination. In Athens and elsewhere, no clear distinction was made between dependence, on the one hand, and addiction or alcoholism, on the other. The main features described for alcoholism varied quite widely by site. Respondents at the "wettest" sites did not mention amount or pattern of drinking as a sign of alcoholism, while characterizations in terms of loss of control or illness, as well as drinking behaviour, were common at sites where drinking is more problematized.

There are clearly substantial variations from one site to another in the threshold for identifying and defining dependence or addiction, whether the definition is in global terms or in terms of qualifying with a certain number of dependence criteria. For alcohol dependence, an illuminating extreme can be found in Bangalore, a cultural situation in which only a minority of men drink at all and almost no women drink. Table 6 summarizes the responses to CIDI questions of four Bangalore nonclinical "reference cases", none of whom met a local clinician's standards for a dependence diagnosis, but each of which met three or more dependence criteria from their answers to CIDI questions. A Bangalore drinker who consumed the equivalent of two European bottles of beer (a total of 700 ml) once every two months, and had never drunk more than this, nevertheless qualified for three criteria of dependence: he reported drinking has less effect on him than it used to; his family and friends objected to his drinking, but he continued to drink, and when he had had tuberculosis his doctor had advised him to stop (he had indeed stopped for a few months but then started again); and he had wanted to stop or cut down drinking but couldn't. Other respondents who drank only a little more than this qualified for a dependence diagnosis. For instance, a respondent who accompanied his wife when she came to the hospital for treatment reported the following pattern of positive items: drinking the equivalent of 3 bottles of beer 1 to 3 days a month, and never drinking more; objections from friends, doctor, or clergy; trouble driving because of drinking; the same amount of alcohol having less effect than before; and having had such a strong desire or urge to drink that he could not resist it. Clearly, in a cultural situation where there is much disapproval of drinking, the threshold for positive responses to precoded questions has been set very low, so that a mechanical application of scoring algorithms for dependence would result in inappropriate diagnosis.

## **CONCLUSION**

The goal and promise of a valid and useful cross-cultural epidemiology of alcohol and drug conditions remains before us, in no way invalidated by the results of the CAR study. But the results do highlight the challenges inherent in this endeavour. The CAR study's results suggest that more than translation is involved in adapting concepts and instruments developed in a particular cultural frame for use in other cultures. Most centrally, they underline that the fact that apparently meaningful answers to items can be elicited with instruments that are a simple

translation -- and that respondents will answer the same way the next time -- does not necessarily mean that the instruments are yielding valid or useful diagnoses.

The CAR study started from an already existing structure of diagnostic interview items, diagnostic criteria and diagnoses, and studied their applicability in nine disparate societies. The study's methodologies and time-frame allowed us to get a broad picture in each society and to set it in a cross-cultural comparative frame. But it did not allow us to match the level of detail that might be found in an in-depth study in a particular culture. And, given the study's purposes, it did not give us a full picture of any alternative, non-diagnostic conceptualizations of alcohol and drug problems which might be prevalent in a given society.

The study's findings suggest that, at the level of diagnostic interview items, cross-culturally comparable formulations can usually be found. But the task is not straightforward. The difficulties start at the level of cultural differences in ways of thinking about subjective states. Many of the items in instruments like CIDI assume that the respondent can report on individuated feelings and states of mind in a detached way, which is not a way of thinking used in all cultures. The CIDI items assume what has been called a "modern self" standing outside and separate from feelings and sensations, a self that can evaluate, describe, and sometimes even control subjective states (Toulmin, 1990). The items thus reflect a post-Enlightenment Eurocentric tradition in which individuals have feelings which they can express in words -- not just sensations, but also emotional states. In this world-view, individuals may focus on and talk about these feelings; and it is conceivable that relieving those feelings might be a reason for taking a drink or a pill.

There are also difficulties at the level of direct translation. Often, there is no equivalent in common use for English terms, for example, for withdrawal and tolerance. The English term may be borrowed or a direct translation may be used, but this may have little meaning, or a very different meaning, for a lay respondent. Even where the denotations of a term or concept seem similar, two cultures may differ in where they draw the threshold for applying it. The Korean term for "hangover", for instance, has a high threshold, connoting that the drinker still has substantial alcohol in the blood the next morning. On the other hand, Bangalore respondents report experiencing tolerance and difficulty cutting down on the basis of a drinking pattern that would seem to a respondent from a Mediterranean wine culture to be homeopathic doses of alcohol.

The study's findings also suggest that comparability is also an issue at the levels of criteria and concepts. Some criteria used in diagnostic systems appear to be culture-bound, depending for their force on specific cultural ideas about the use of time, about "alternative pleasures", about self-control, or about customary patterns of substance use (e.g., narrowing of the repertoire). Also, while cultures readily borrow concepts and terms for behaviours that are seen as alien -- as drug use is in many places -- they may be quite resistant to applying new medical terminology to what is seen as mundane and familiar -- e.g., wine drinking in Mediterranean societies.

Perhaps the most problematic aspect of the findings for cross-cultural comparisons concerns cultural differences in the perceived linkage between items or criteria, on the one hand, and diagnoses on the other. An epidemiological study may get usable and reliable answers to interview items in a culture, but if the culture does not accept the diagnostic connections built into an international scoring algorithm, the algorithm is likely to yield a diagnosis which would be seen as inappropriate and even wrong within that society. For most of the ICD-10 criteria for the

alcohol dependence syndrome, indeed, the key informants from one or another of the study sites reported that, while the criterion was recognizable to them, it was seen as a commonplace or even admirable quality in their culture, and would not be recognized as diagnostic of dependence or addiction.

The CAR study findings thus pose for nosologists the question of whether the six criteria designated in ICD-10 are the most appropriate way to characterize dependence as a disorder in different cultures. There are three main alternative solutions to this question. One choice would be to decide that the validity of a criterion of dependence in a given society does not depend on whether it is accepted as symptomatic of a disorder in the society. A second choice for future nosologists would appear to be to return to a culturally-differentiated definition of dependence, as in Jellinek's Greek-letter typology or in the earliest World Health Organization definition of alcoholism as use going beyond "the social drinking customs of the whole community concerned" (WHO, 1951). A third choice would be to undertake a search for new criteria or for reformulations of criteria which would be universally validated as diagnostic of dependence.

Along with the issue of cultural differences in conceptual linkages, there is also an issue of cultural differences in the threshold for positive responses to items or criteria. The Bangalore reference cases described above alert us to the possibility of overdiagnosis, particularly with a rigidly structured schedule and scoring procedure, as is commonly used in epidemiological studies, in cultural situations where there is much social disapproval of any use. In the local circumstances of Bangalore, formulations like the CIDI question about whether there were ever any objections about the respondent's drinking, as the Bangalore investigators noted, are likely to be answered positively by any drinker. In an environment where drinking is relatively infrequent and limited by finances and social disapproval, respondents may also give a level of attention to their desires and to the effects and possible consequences of drinking which those from a "wetter" cultural environment might find exaggerated.

These data from a culture where drinking is disapproved remind us that the same kinds of problems of overdiagnosis could well arise with respect to dependence on other drugs in cultures where use of the drugs is strongly socially disapproved. The disapproval results not only in high rates of social and interactional problems from use, but also in increasing the perceived power of the drug to take over one's life and actions, and in encouraging users to introspect carefully concerning variations in the psychoactive effects of the drug (tolerance) and in feelings and urges concerning use.

One other aspect of the findings deserves a comment. The field of alcohol and drug problems has many terms -- such as alcoholism or addiction -- which originate from medical usage but which have passed into common usage in many languages. Often such terms were originally put forward with the aim of removing the moral judgements imputed by the terms they replaced. The CAR study findings remind us in vivid terms, however, how much the diagnosis of alcohol and drug disorders depends on the mores in a society, and how quickly and easily new medical terminology can take on the same moralizing tones as the old.

The findings of this study provide a fertile ground for future comparative and collaborative research on these disorders. The network of centres and experts created in this study is a potential asset for this research, and its coming into existence is undoubtedly one of the study's most important results.

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**Table 1. ICD-10 substance use diagnoses and their conceptual location**

<b>DIAGNOSES</b>	<b>CRITERIA</b>	<b>CONTRASTING (non-diagnostic) STATES</b>	<b>RELATED &amp; LAY CONCEPTS</b>
Acute intoxication		vs. intoxication, not medically significant	
**Harmful use		vs. normal use	abuse
*Withdrawal state		vs. hangover	
Dependence syndrome:--			alcoholism, addiction
	1. strong desire, compulsion		craving, compulsion
	2. impaired capacity to control		loss of control
	* 3. withdrawal/ use to relieve withdrawal	(vs. hangover)	
	4. tolerance		
	5. neglect of alternative pleasures & activities		
	** 6. Harmful use (use despite physical or psychological harm)	(vs. normal use)	(abuse)
	x. narrowing of repertoire		

\* Withdrawal state is both a diagnosis and an element in a criterion for the dependence syndrome.

\*\* Harmful use is both a diagnosis and a criterion for the dependence syndrome.

**Table 2. Profile of participating CAR centres**

	ANKARA	ATHENS	BANGALOR E	FLAGSTAFF	IBADAN	JEBEL
<b>GEOGRAPHICAL LOCATION</b>	Central Turkey	Central Greece	Karnataka, South India	Arizona, USA	South Western Nigeria	Timis, Banat, Western Romania
<b>MAIN RELIGION(S)</b>	Muslim	Greek Orthodox	Hindu Muslim Christian Buddhist	Christian	Christian	Eastern Orthodox
<b>MAIN LANGUAGE(S)</b>	Turkish	Greek	Kannada Tamil Telugu Hindi English	English Navajo Hopi Spanish	Yoruba English	Romanian
<b>PARTICIPATING INSTITUTION</b>	Hacettepe University Dept. of Psychiatry	University of Athens Dept. of Psychiatry	National Institute of Mental Health & Neuro- Sciences (NIMHANS)	North Arizona U. Dept. of Anthropology & Johns Hopkins University	University College Hospital Dept. of Psychiatry	Mental Hospital
<b>LEVEL OF ALCOHOL CONSUMPTION, litres/capita/year</b>	0.8	8.6	2.0	NA	NA	6.4

Level of alcohol consumption as reported for the country for 1991 in Produktschap voor  
Gesdistilleerde Dranken, World Drinking Trends: 1993, Oxford: NTC Publications, 1993.



**Table 3. Cultural applicability of ICD-10 criteria for alcohol dependence syndrome**

<b>ICD-10 criterion</b>	<b>ANKARA</b>	<b>ATHENS</b>	<b>BANGALORE</b>	<b>FLAGSTAFF</b>	<b>IBADAN</b>	<b>JERUSALEM</b>
(1) Strong desire/compulsion to use	Overlaps (3)	No term	No term Overlaps (2)		Lay meaning differs	Overlap
(2) Impaired capacity to control use			Not diagnostic Overlaps (1)		Lay meaning differs	Overlap
(3) Withdrawal/Use to relieve/avoid withdrawal	Overlaps (1)	No term	No term	Lay meaning differs	No term	No term
(4) Tolerance	No term	No term Lay meaning differs	No term	Lay meaning differs	Lay meaning differs	No term
(5) Neglect of alternative pleasures		Not diagnostic	Not diagnostic		Lay meaning differs	Lay meaning differs
(6) Persisting despite physical or psychological harm			Not diagnostic			Lay meaning differs
(x) Narrowing of repertoire	Not diagnostic	Not diagnostic	Not diagnostic		Not diagnostic	

Key: **No term** - phenomenon recognized but **no** good **term** exists; **Lay meaning differs** - **discrepancy** between lay and professional **understanding** of the phenomenon; **Not diagnostic** - phenomenon **not** regarded as meaningfully **diagnostic** for alcohol dependence; **Overlap** - **overlaps** with the numbered criterion.

**Table 4. Signs of intoxication, when help is needed, and when medical attention is needed.**

	SIGNS OF INTOXICATION MENTIONED:			When Medical Attention Seen as Necessary
	Uncoordinated	Aggressive	Quiet, Sad	
Santander	⊕	+	+	Loss of consciousness
Athens	⊕	⊕	+	Unconscious, nonstop vomiting, very serious aggressiveness
Jebel	⊕	⊕		Coma, seizures, fits
Ibadan	⊕	+		Sustained injuries, endless vomiting, unconscious
Ankara	⊕			Blackout
Mexico	⊕	⊕		Disturbance of consciousness, violence, physical illness
Bangalore	⊕	+		Head injury, unconscious
Seoul		+		Coma, almost dead, seizures, severe illness
Flagstaff	⊕*	+		Bleeding, DTs, seizures

+ Mentioned as a sign

⊕ Mentioned as a sign, and outside help is seen as necessary

\* "Outside help must be requested"

**Table 5. Signs of hangover and withdrawal, and the distinction between them.**

	Hangover, withdrawal clearly distinguished?	SIGNS OF HANGOVER			SIGNS OF WITHDRAWAL				
		Physical	Regret, guilt, shame	Other affective	Tremors	Other physical	Bad mood, anxiety	Craving	Guilt, shame
Santander	—	+	+		+	+	+		
Athens	—	+	+	+	+	+	+	+	
Jebel	±	+		+	+	+	+	+	
Ibadan	—	+	+		+	+	+	+	
Ankara	+	+		+	+	+	+	+	
Mexico	+	+		+	+	+	+		
Bangalore	+	+	+		+		+	+	
Seoul	—	+	+			+	+		
Flagstaff	+	+	+		+	+			+

**Table 6. Drinking and dependence in Bangalore, India: four nonclinical cases meeting formal criteria for dependence.**

Occupation, age, and drinking pattern of respondent:	Tolerance	Drinking despite social consequences	Drinking despite physical harm (bicycle injury, TB, stomach disease)	Difficulty stopping, cutting down	Irresistible desire
Police constable, age 40 700 ml beer (2 bottles) once in two months	+	+	+	+	
Attendant at hospital, age 36 1000 ml beer (3 bottles) 1-3 days a month	+	+	+		+
Staff nurse, age 33 700-1000 ml beer (2-3 btls) 1-3 times a month	+	+		+	
Farm worker, age 55 90 ml arrack (30 gm alcohol ≈ 3 drinks) once or twice a week	+	+	+	+	