

ENDORSEMENT AND CONCORDANCE OF ICD-10 VERSUS DSM-IV CRITERIA FOR SUBSTANCE DEPENDENCE : INDIAN PERSPECTIVE

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ABSTRACT

Substance use disorders have undergone major changes in both the international (ICD-10) and American (DSM-IV) nosological systems, thus necessitating a study of cross-system agreement between ICD-10 and DSM-IV substance dependence, especially from a developing country setting. Further, endorsement rates for various substance dependence criteria in the two systems need to be studied from a similar perspective. Hence, 221 consecutive patients with 279 diagnostic categories of substance dependence attending a de-addiction centre in Northern India were studied with regard to endorsement of the various ICD-10 and DSM-IV criteria as well as for cross-system agreement for severity of dependence. High endorsement rates were seen for most criteria in both the systems, except for those related to 'persistence despite harm' and 'salience (neglect of various activities, plus excessive time spent to procure the substance)'. There were some significant differences, however, between endorsement rates across different substance categories in both the systems. Cross-system agreement on severity of substance dependence ranged from fair to good for all categories combined, and was good to excellent for the opioid category. The category of 'others' (nicotine, cannabis and sedative-hypnotics) showed poor cross-system agreement. Overall, the results lend support to the basic theoretical construct behind both ICD-10 and DSM-IV substance dependence syndrome from a developing country perspective.

Key words : Substance dependence, diagnosis, endorsement, agreement, nosological systems

The diagnosis of psychiatric disorders has undergone rapid changes in the past years. These changes have been necessary as the available diagnostic systems, at any given time, did not adequately cover all of the classified phenomena (Cottler et al., 1991) leading onto revisions in the Diagnostic and Statistical Manual (DSM) and International Classification of diseases (ICD) systems. However, another major reason for development of newer version is for improving predictive accuracy (Cottler et al., 1991). The current classificatory systems in vogue are the ICD-10 (WHO, 1992) and DSM-IV (APA, 1994) which attempt at fulfilling the above mentioned objectives.

Substance use disorders have undergone major changes in various classificatory systems over the years especially after the advent of DSM-III. The concept of substance dependence in DSM-III (APA, 1980) centred around tolerance and withdrawal related to any substance (Cottler et al., 1991). However, a significant change occurred from DSM-III-R (APA, 1987) onwards. In this, the focus shifted to dependence being a disorder centred around compulsive use and loss of control often leading to social, physical and psychological consequences (Cottler et al., 1991). DSM-IV retained the conceptual framework underlined in DSM-III-R, and the two editions of DSM were highly comparable, especially for alcohol use

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disorders (Grant et al., 1992; Rounsaville et al., 1993; Hasin & Grant, 1994).

DSM-III-R's development conceptualised and centred around the originally formulated dependence syndrome of Edwards and Gross (1976) and Edwards et al. (1976). Infact, the ICD-10 also represents a version of the same criteria by Edwards and Gross (1976). Thus, there is a common theoretical link for the dependence criteria in the diagnostic systems of DSM-III-R, DSM-IV and ICD-10 (Rounsaville et al., 1986; Hasin et al., 1996). Studies have been carried out to validate this common theoretical construct (Grant, 1993; Cottler, 1993; Rounsaville et al., 1993; Langenbucher et al., 1994; Hasin et al., 1996). Although these studies yielded results that appeared to validate this theoretical construct, yet apart from the studies by Langenbucher et al. (1994) and Hasin et al. (1996), other studies used the working draft of DSM-IV (with 11 items), and not the final version (with 7 items). Also many of these comparative studies on DSM-IV and ICD-10 focussed exclusively on alcohol (Grant, 1993; Hasin et al., 1996). Further, the samples varied from clinical to community populations to an admixture of the two.

As has been mentioned earlier, the DSM-III-R borrowed heavily from the concept of 'dependence syndrome' given by Edwards et al. (1976). DSM-III-R listed nine criteria which were analyzed in a study by Cottler et al. (1991) so as to assess the impact of the individual criteria in arriving at a diagnosis of substance dependence. It was seen that endorsement rates for the criteria related to 'withdrawal' and 'tolerance' were low for the substances - alcohol and cannabis, and high for opiates and nicotine. However, no other study has commented upon the endorsement rates for various criteria needed for substance dependence even among different substances. This is important to assess so as to evaluate the relative importance of each criteria in arriving at a diagnosis of substance dependence.

There is a need to study the above mentioned issues especially in the context of substance dependence in developing countries.

Substance use patterns and concepts of social use vis-a-vis pathological use vary substantially between different cultures (Babor & Mendelson, 1986; Miller, 1986). Further, as noted by the originator of the concept of alcohol dependence syndrome himself, "its presentation will be shaped by the pathoplastic influence of personality and culture" (Edwards, 1986, p.172). Hence, criteria developed for diagnosis of substance dependence in developed western culture may or may not necessarily be highly endorsed in people from the developing countries constituting different cultural backgrounds. For a similar reason, cross-system agreement between DSM-IV and ICD-10 needs to be studied from a developing country's perspective. No such effort has been made so far, to the best of our knowledge.

Objectives :

1. To study the rates of endorsement of various diagnostic criteria for substance dependence using ICD-10 and DSM-IV in a consecutive sample of substance dependence patients attending a de-addiction centre in Northern India.
2. To find out the extent of endorsement of various diagnostic criteria, using ICD-10 and DSM-IV, across different categories of substances in the sample studies.
3. To examine the degree of agreement between ICD-10 and DSM-IV diagnostic systems with regard to the severity of substance dependence.

MATERIAL AND METHOD

Sample : The sample consisted of patients attending the outpatient clinic or admitted to the inpatient unit of the Drug De-addiction and Treatment Centre (DDTC), Department of Psychiatry, PGIMER, Chandigarh over the period 1996-97. The sample recruited was a consecutive type meeting the inclusion and exclusion criteria.

Inclusion criteria :

1. Attending the DDTC for treatment of substance dependence, i.e., meeting atleast 3 criteria of either ICD-10 or DSM-IV.

2. Cooperative patient
3. Duration of substance use for at least twelve months
4. Accompanied by a reliable and key informant e.g. family member staying with the patient.

Exclusion criteria :

1. Psychotic illness
2. Marked cognitive impairment
3. Acute intoxication at time of assessment

Design : Assessment was done at a single time, i.e., it was a cross-sectional (survey) design.

Instruments :

1. ICD-10 (WHO, 1992)
 2. DSM-IV (APA, 1994)
 3. Sociodemographic profile sheet developed by Department of Psychiatry, PGIMER, Chandigarh.
- Assessment Procedure :** A semi-structured proforma incorporating all the basic and relevant clinical details was used for eliciting details of the substance(s) use. A diagnosis of substance dependence (and any other comorbid illness) was thereafter established by one of the two investigators (SKM, DB). Following this, another investigator (NS) assessed the patient as regards the fulfilment and endorsement of diagnostic criteria for ICD-10 and DSM-IV. Only one investigator (NS) was used for assessment of the diagnostic criteria so as to remove the confounding variability induced by presence of two separate raters.

Operational criteria : To determine the degree of agreement between ICD-10 and DSM-IV diagnostic criteria as regards the severity of substance dependence, criteria were operationalised for varying grades of severity viz.

1. Mild degree of severity : fulfilment of three diagnostic criteria in either ICD-10 or DSM-IV.
2. Moderate : fulfilment of either 4-5 diagnostic criteria in ICD-10 or fulfilment of 4-6 diagnostic criteria in DSM-IV.
3. Severe : fulfilment of all six diagnostic criteria in ICD-10 or all seven criteria in DSM-IV.

Categorization of severity of substance dependence is not incorporated in the diagnostic systems and lacks adequate validation. However, this exercise of categorization was

alluded to being possibly helpful by Edwards and Gross (1976). They stated "..... the need to see dependence in terms of degrees rather than absolutes may have some message for clinical practice". Hence, the authors felt the need to attempt the same.

Statistical analysis : For determining the rates of endorsement, frequency values were calculated. Extent of endorsement was determined by applying chi-square test. Agreement between ICD-10 and DSM-IV classificatory systems was assessed with the Kappa (K) coefficient. This coefficient indicates the level of agreement beyond the level expected due to chance. 'K' values can range from +1.00 (perfect agreement) to -1.00 (total disagreement). 'K' of 0.75 and above indicates excellent agreement, from 0.40 to 0.74 indicates fair to good agreement, and below 0.39 indicates poor agreement (Fleiss, 1981). A 'K' of zero indicates agreement no better than chance. Standard errors and 95% confidence intervals were computed for all 'K' values.

RESULTS

A total of 221 patients were taken up for the study as per the inclusion and exclusion criteria. All the patients were male. The sociodemographic profile is presented in table 1.

It was seen that there was a preponderance of married patients in the age groups of 25-44 years belonging to Hindu religion, of nuclear families and of urban background.

The diagnostic break-up of the whole sample is shown in table 2. It should be noted here that the overall diagnostic number (n=279) exceeded the sample size (n=221) as there were 58 comorbid diagnosis for the sample of patients. Henceforth, the analysis further presented was done for the overall diagnostic number (n=279) rather than for the total sample of patients (n=221).

Regarding the duration of substance dependence, more than half the diagnosis categories (n=279) had substance use of 10

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TABLE 1
SOCIODEMOGRAPHIC PROFILE OF SAMPLE (N=221)

Variable	Number of patients	Percentage
Age (in years)		
15-24	33	14.93
25-34	72	32.58
35-44	76	34.39
> 45	40	18.10
Marital status		
Married	165	74.66
Not married	56	25.34
Education		
Under matric	70	31.75
Matric/Diploma	86	38.84
Graduate/Postgraduate	55	29.41
Occupation		
Professional/Semi-professional	36	16.29
Clerk/Farmer/Shopowner	84	38.01
Semi-skilled/Unskilled/		
Skilled worker	53	23.98
Unemployed/Others	48	21.71
Religion		
Hinduism	119	53.85
Sikhism	95	42.99
Others	7	3.16
Family type		
Nuclear	131	59.28
Non-nuclear	80	40.72
Locality		
Urban	167	75.57
Rural	54	24.43

TABLE 2
DIAGNOSTIC BREAKDOWN OF SAMPLE (N=221)

Diagnosis	Number	Percentage
Alcohol dependence syndrome	124	44.44
Opioid dependence syndrome	109	39.06
Nicotine dependence syndrome	28	10.05
Cannabis dependence syndrome	6	2.15
Sedative/Hypnotic dependence syndrome	12	4.30
Total number of diagnostic categories	279	100.00

* Total number of diagnostic categories exceeds the sample (N=221) because there were 58 concurrent diagnosis of dependence on an other substance.

years or more (n=145).

Thereafter, the percentage endorsement (i.e. number of diagnostic categories fulfilling a criteria) for the diagnostic criteria of ICD-10 (Table 3) and DSM-IV (Table 4) were calculated.

It was seen that endorsement rates in ICD-10 were low for criterion number 5 (neglect of alternative pleasures and excessive time spent

TABLE 3
PERCENTAGE ENDORSEMENT FOR ICD-10 CRITERIA FOR ALL DIAGNOSIS (N=279)

Criterion	Endorsement rate (%)
Desire/compulsion for use	99.64
Impaired control	92.11
Withdrawal	81.00
Tolerance	93.19
Neglect of alternative pleasures+time spent excessively	73.84
Persistence despite harm	65.95

TABLE 4
PERCENTAGE ENDORSEMENT FOR DSM-IV CRITERIA FOR ALL DIAGNOSIS (N=279)

Criterion	Endorsement rate (%)
Use over longer periods/in larger amount	99.28
Impaired control	81.72
Withdrawal	80.65
Tolerance	94.62
Social/Occupational/Recreational activities given up	73.84
Use despite physical/psychological harm	74.91
Excessive time spent to obtain	56.63

in procuring the substance; 73.84%) and criterion number 6 (persistence despite harm; 65.95%). For all other criteria, endorsement rates ranged from 81% to 99.64%.

In DSM-IV, the endorsement rates were low for criterion number 6 (use despite physical or psychological harm; 74.91%), criterion number 5 (neglect of social, occupational and recreational activities; 73.84%) and criterion number 7 (time spent to procure the substance; 56.63%). For all other criteria, endorsement rates ranged from 80.65% to 99.28%.

However, to determine the extent of endorsement across different categories of substance dependence in the ICD-10 (Table 5) and DSM-IV (Table 6), the endorsement values per criterion for each substance were calculated and subjected to chi-square analysis.

In the ICD-10 system, there was no significant difference across the substances - alcohol, opioids and 'others' for criterion number 1 (desire/compulsion for use) and criterion number 4 (tolerance).

In the DSM-IV system, there was no significant difference across the substances -

TABLE 5
ENDORSEMENT RATES FOR ICD-10 CRITERIA
ACROSS DIAGNOSIS OF DEPENDENCE ON ALCOHOL
(N=124), OPIOIDS (N=109) AND 'OTHERS' (N=46)*

Criterion	Endorsement rate (%)			Chi-square value
	Alcohol	Opioids	Others	
Desire/compulsion for use	100.00	99.08	100.00	1.75 ^{NS}
Impaired control	96.77	87.16	91.30	7.72*
Withdrawal	86.29	97.25	28.26	104.06***
Tolerance	95.16	91.74	91.30	1.39 ^{NS}
Neglect of alternative pleasures + Time spent excessively	80.65	80.73	39.13	34.32***
Persistence despite harm	72.58	66.97	45.65	11.73**

a = Cannabis, Nicotine, Sedative & Hypnotics

NS = Not significant; *p < 0.05; **p < 0.01; ***p < 0.001

TABLE 6
ENDORSEMENT VALUES FOR DSM-IV CRITERIA
ACROSS DIAGNOSIS OF DEPENDENCE ON ALCOHOL
(N=124), OPIOIDS (N=109) AND 'OTHERS' (N=46)*

Criterion	Endorsement rate (%)			Chi-square value (df=2)
	Alcohol	Opioids	Others	
Use over longer periods/in larger amounts	100.00	99.08	97.83	2.47 ^{NS}
Impaired control	80.65	87.16	71.74	5.31 ^{NS}
Withdrawal	85.48	96.33	30.43	93.36***
Tolerance	95.97	92.66	95.65	1.36 ^{NS}
Social/Occupational/Recreational activities given up	83.87	82.87	26.09	65.10***
Use despite physical/psychological harm	78.23	76.15	63.04	4.26 ^{NS}
Excessive time spent to obtain	50.81	71.56	36.96	18.86***

a = Cannabis, Nicotine, Sedative & Hypnotics

NS = Not significant; ***p < 0.001

alcohol, opioid and 'others' for criterion number 1 (use over long periods OR in excessive amount), criterion number 2 (impaired control), criterion number 4 (tolerance) and criterion number 6 (use despite physical/psychological harm).

Finally, degree of agreement between ICD-10 and DSM-IV was determined for all the diagnostic categories as well for the individual

ones (Table 7). Agreement was calculated related to two subsets of dependence i.e. Moderate (Mild + Moderate of operational criteria) and severe - as per operational definition of 'severe'.

The cross-system agreement was fair to

TABLE 7
CONCORDANCE BETWEEN ICD-10 AND DSM-IV
SYSTEMS REGARDING SEVERITY OF DEPENDENCE

Diagnostic group	Kappa (K) value	Standard error of 'K'	95% confidence interval of 'K'
All categories combined	0.55	0.05	0.45 to 0.65
Alcohol dependence syndrome	0.39	0.08	0.23 to 0.55
Opioid dependence syndrome	0.68	0.07	0.54 to 0.82
'Others' dependence syndrome	-0.10	0.46	-1.00 to 0.80

good for all diagnostic categories combined together, even with the 95% confidence interval. As regards individual substances, the results were varied. For alcohol, level of agreement was bordering on fair but the confidence interval showed a wide range (from poor to fair agreement). For opioids, agreement was good with variability range extending from fair to excellent agreement. For other substances, agreement levels appeared to be due to chance only.

DISCUSSION

Endorsement rates across the two systems

Endorsement rates in the ICD-10 were highest for criteria of 'compulsion for use', 'tolerance' and 'impaired control' and lowest for 'neglect of alternative pleasures and excessive time spent' and 'persistence despite harm'. These values show that the underlying theoretical construct in ICD-10, based on the concept by Edwards *et al.* (1976), appears to be the central component of substance dependence. However, the consequences arising out of substance dependence were also

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part of the theoretical construct, which as observed, showed a relatively low endorsement rate. Interestingly, the central concept of DSM-III physiological dependence manifested by presence of 'tolerance' and 'withdrawal', which was modified and not felt necessary in the revised DSM versions and ICD-10, appeared to be a common feature amongst the endorsed criteria for dependence; especially 'tolerance'. Therefore these findings show that ICD-10, though based heavily on concept of Edwards et al. (1976), appears to give credence to the DSM-III concept too.

On the other hand, endorsement rates in DSM-IV were highest for criteria of 'use over longer periods/in longer amounts' and 'tolerance' and lowest for 'use despite physical/psychological harm', 'giving up of various activities' and 'excessive time spent', with intermediate values for the other criteria. Thus, it appears that both ICD-10 as well as DSM-IV have gainfully used the theoretical construct of dependence syndrome as envisaged by Edwards et al. (1976). While this remains overall true, it must be stressed here that two of the elements of dependence syndrome described by Edwards and Gross (1976) were not endorsed highly in either system: 'persistence despite harm' and 'salience' (neglect of various activities, plus excessive time spent to procure the substance). The term 'salience' had been originally proposed by Edwards and Gross (1976) in which the individual gives priority to maintaining his alcohol intake and the same is reflected in criterion 5 (neglect of alternative pleasures and excessive time spent in procuring the substance) of ICD-10 and criteria 5 (neglect of social, occupational and recreational activities) and 7 (time spent to procure the substance) of DSM-IV. The reasons for this need further investigation in India.

The relatively higher endorsement rates for the construct of 'physiological dependence' (see above) appear to lend more credence to the DSM-III based criteria for substance dependence. This appears to support the specifier added for sub-types of substance

dependence in DSM-IV i.e. 'with physiological dependence' and 'without physiological dependence'. Thus, there may be the need for developing specifiers of 'with/without physiological dependence' in ICD-10 on the same lines as DSM-IV.

Endorsement rates across different substance categories

Although there appeared to be some similar trends, in both ICD-10 and DSM-IV, regarding endorsement of various diagnostic criteria for substance dependence in general but it was necessary to evaluate the presence of such trends across the major groups of substances in our sample i.e. alcohol, opioids and 'others'. Using ICD-10, comparable endorsement levels were reported across the three groups for criteria of 'desire/compulsion for use', and 'tolerance'. There was a relatively lower level of endorsement for 'impaired control' by patients using 'opioids' compared to other substances. Although this appears unusual but it could be due to the fact that 'opioids' are a heterogeneous group (including heroin, opium, codeine, pentazocine, dextropropoxyphene and buprenorphine) of substances including some that are used for therapeutic purposes and more quantifiable. This may have led to the cognitive set in patients that "we can reduce the amount by ourselves and/or substance used is not that harmful". However, this is a mere speculation and could not be confirmed by the authors.

As compared to 'alcohol' and 'opioid' groups, significantly low levels of endorsement were reported for 'others' group as regards the other three criteria (Table 5). The criteria of 'withdrawal' showed low endorsement as it could be due to lack of characteristic withdrawal syndrome with cannabis (Kaplan & Sadock, 1995) or because no/little attempt was ever made by this group to abstain/drastically and abruptly reduce their intake of the substances. The latter hypothesis appears more tenable if the low endorsement rates for 'neglect of alternative pleasures' and 'persistence despite harm' are

considered. This is so because the drugs comprising 'others' group (cannabis, nicotine, sedatives and hypnotics) have a social sanction in this part of the world and are generally not considered to be very harmful by the general population. Also, these are freely available in India leading to the regular usage of these drugs without actually having to put in extra efforts in procuring them. Infact, these findings reinforce the serious need in future to provide stringent rules and regulations as regards procurement and usage of these group of substances. On the other hand, it does not imply that the criteria showing low endorsement should be deleted for diagnosing these disorders of substance dependence.

Analysis of DSM-IV for the different substances showed similar trends for 'prolonged use' and 'tolerance' with comparable endorsements for 'impaired control' and 'persistence despite harm'. 'Withdrawal', 'excessive time spent' and 'activities given up' were poorly endorsed by the 'others' group. Overall, the findings appear similar to those derived from ICD-10 but more comparability across the different groups in DSM-IV could be due to its criteria being less broadly defined with respect to ICD-10 (Rounsaville *et al.*, 1993).

Therefore, it appeared that pattern for endorsement for each criterion (which is comparable in the ICD-10 and DSM-IV) was on similar lines across the various groups of substance dependence. This showed that ICD-10 and DSM-IV criteria are comparable. However, the concordance for severity of dependence in the two systems was required to establish the actual comparability of ICD-10 and DSM-IV (see below).

Cross-system agreement for grades of severity of dependence

High level of cross-system concordance was evident for all diagnostic categories i.e. whole sample and the opioid group; though with a wide range. The wide range in opioids could be due to the use of various types of opioids by

patients ranging from natural to synthetic opioids (mentioned earlier in discussion) which could have influenced the total sample agreement too. A barely moderate level of concordance for alcohol sub-group could be due to the presence of greater number of cases with "less severity of dependence" as compared to those for opioids. However, due to design of the current study, it was not possible to confirm this observation. The presence of poor concordance for the 'others' group provides support to the varying rates of endorsement for both ICD-10 and DSM-IV criteria. This supports the observations of researchers (Rounsaville *et al.*, 1993; Hasin *et al.*, 1996) that a polythetic approach to diagnosis of substance dependence may not be actually helpful in evaluating the severity of dependence of a particular substance. Therefore, there may be merit in trying to sub-classify severity of dependence not on the basis of mere number of criteria fulfilled but probably on the basis of presence of certain specific criteria or factors.

Although previous studies have commented upon the good to excellent concordance values between DSM-IV and ICD-10 (Rounsaville *et al.*, 1993; Grant, 1993; Hasin *et al.*, 1996), but these have generally been on community samples and have evaluated for both 'dependence' and 'harmful use/abuse'. In keeping with these two broad categories, this can be extrapolated to the two degrees of severity of substance dependence defined in this study. In the two previous studies (Grant, 1993; Hasin *et al.*, 1996) purely alcohol was studied, on different samples, with different instruments and different criteria were used. These could be some of the factors leading on to different results in this current study.

Conclusions and implications

Overall, it can be concluded that ICD-10 and DSM-IV share a similar underlying basic theoretical construct and inasmuch, a specifier for 'physiological dependence' (as in DSM-IV) may need to be added to ICD-10 to bring these two systems closer. Also, there is a need to

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further evaluate the degree of concordance for the two systems. But, the need of the hour appears to be to develop measures so as to classify the severity of substance dependence. This would help in a more rational approach to the evaluation and treatment of patients with possible integration to the psychosocial implications (insurance claims, financial aspects etc.) of substance dependence.

However, this study had certain limitations, viz. the sample being clinic-based, studying only 'dependence' and not 'abuse/harmful use', small sample size for substances other than alcohol and opioids, and lack of structured instruments for arriving at initial clinical diagnosis.

Nevertheless, this study assumes importance as being the first of its kind in assessing endorsement of criteria and concordance of severity of dependence; especially from a developing country. This could help in further refining the concept of substance dependence.

REFERENCES

- APA (1980)** *Diagnostic and Statistical Manual of Mental Disorders*, Edn. 3rd (DSM-III). Washington DC : American Psychiatric Association.
- APA (1987)** *Diagnostic and Statistical Manual of Mental Disorders*, Edn. 3rd, revised (DSM-III-R). Washington DC : American Psychiatric Association.
- APA (1994)** *Diagnostic and Statistical Manual of Mental Disorders*, Edn. 4th (DSM-IV). Washington DC : American Psychiatric Association.
- Babor, T.F. & Mendelson, J.H. (1986)** Ethnic/religious differences in the manifestation and treatment of alcoholism. *Annals of New York Academy of Sciences*, 472, 46-59.
- Cottler, L.B., Helzer, J.E., Mager, D., Spitznagel, E.L. & Compton, W.M. (1991)** Agreement between DSM-III and III-R substance use disorders. *Drug and Alcohol Dependence*, 29, 17-25.
- Cottler, L.B. (1993)** Comparing DSM-III-R and ICD-10 substance use disorders. *Addiction*, 88, 689-696.
- Edwards, G. (1986)** The alcohol dependence syndrome : a concept as stimulus to enquiry. *British Journal of Addiction*, 81, 171-183.
- Edwards, G. & Gross, M. (1976)** Alcohol dependence : provisional description of a clinical syndrome. *British Medical Journal*, 1, 1058-1061.
- Edwards, G., Arif, A. & Hodgson, R. (1976)** Nomenclature and classification of drug and alcohol-related problems : a WHO memorandum. *Bulletin of World Health Organization*, 59, 225-242.
- Fleiss, J. (1981)** *Statistical Methods for Rates and Proportions*, Edn. 2. New York : Wiley.
- Grant, B., Harford, T., Hasin, D., Chou, P. & Pickering, R. (1992)** DSM-III-R and proposed DSM-IV alcohol use disorders, U.S. 1988 : a nosological comparison. *Alcohol and Clinical Experimental Research*, 16, 215-221.
- Grant, B.F. (1993)** ICD-10 and proposed DSM-IV harmful use of alcohol/alcohol abuse and dependence, United States 1988 : a nosological comparison. *Alcohol and Clinical Experimental Research*, 17, 1093-1101.
- Hasin, D. & Grant, B.F. (1994)** Nosological comparisons of DSM-II-R and DSM-IV alcohol abuse and dependence in a clinical facility : comparison with the 1988 National Health Interview Survey results. *Alcohol and Clinical Experimental Research*, 18, 272-279.
- Hasin, D., Li, Q., Mccloud, S. & Endicott,**

J. (1996) Agreement between DSM-III, DSM-III-R, DSM-IV and ICD-10 alcohol diagnoses in US community-sample heavy drinkers. *Addiction*, 91, 1517-1527.

Kaplan, H.I. & Sadock, B.J. (1995) *Comprehensive Textbook of Psychiatry*, Edn. 6th. Baltimore : Williams & Wilkins.

Langenbucher, J., Morgenstern, J., Labouvet, E. & Nathan, P.E. (1994) Diagnostic concordance of substance use disorders in DSM-III, DSM-IV and ICD-10. *Drug and Alcohol Dependence*, 36, 193-203.

Miller, W.R. (1986) Haunted by the Zeitgeist : reflections on contrasting treatment goals and concepts of alcoholism in Europe and

the United States. *Annals of the New York Academy of Sciences*, 472, 110-129.

Rounsaville, B.J., Spitzer, R. & Williams, J. (1986) Proposed changes in DSM-III substance use disorders : description and rationale. *American Journal of Psychiatry*, 143, 463-468.

Rounsaville, B.J., Bryant, K., Babor, T., Kranzler, H. & Kadden, R. (1993) Cross system agreement for substance use disorders : DSM-III-R, DSM-IV & ICD-10. *Addiction*, 88, 337-348.

WHO (1992) The ICD-10 classification of mental and behavioural disorders. Geneva : World Health Organization.

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