Three (or More) Alcohol-Dependence Symptoms but Not Clustered in the Same 12 Months: Diagnostic Orphans From a Longitudinal Perspective*

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ABSTRACT. Objective: The Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM-IV), currently uses a polythetic classification system for defining alcohol use disorders (AUD; alcohol abuse and dependence). This classification results in individuals who are subthreshold for an official AUD diagnosis but still endorse one or two criteria of dependence: so-called "diagnostic orphans." To our knowledge, however, there has been no attention given to diagnostic orphans from a lifetime perspective. The goal of the current article was to compare various diagnostic groups based on lifetime reports of abuse and dependence symptoms on a range of outcomes. **Method:** Data taken from the National Epidemiological Survey of Alcohol and Related Conditions study were used to form seven mutually exclusive diagnostic groups based on lifetime abuse and dependence symptomatology. **Results:**

Diagnostic groups that experienced extensive dependence symptoms, regardless of past-12-month clustering (i.e., formal diagnostic criteria), tended to exhibit poorer outcomes compared with participants that met formal lifetime diagnosis for an AUD through abuse alone. It is notable that a significant group of individuals who failed to meet formal lifetime AUD diagnosis, but who endorsed a number of dependence symptoms, consistently demonstrated more problematic outcomes on a range of measures compared with individuals who never reported dependence symptoms but who were formally diagnosed with lifetime AUD through alcohol abuse. **Conclusions:** DSM-IV lifetime diagnostic criteria may exclude individuals with a history of extensive dependence symptomatology. Implications regarding lifetime diagnosis conceptualization are discussed. (*J. Stud. Alcohol Drugs, 71,* 864-869, 2010)

THE DIAGNOSTIC AND STATISTICAL MANUAL of Mental Disorders, Fourth Edition (DSM-IV; American Psychiatric Association, 1994), currently uses a polythetic classification system for defining alcohol use disorders (AUD; alcohol abuse and dependence). More specifically, alcohol dependence is diagnosed in the presence of three (or more) of seven dependence criteria, and diagnosis for alcohol abuse is met by the occurrence of one (or more) of four abuse criteria in the absence of dependence. It is notable that the DSM-IV stipulates that dependence symptoms must occur in the same 12-month period (American Psychiatric Association, 1994).

As noted elsewhere (e.g., McBride et al., 2009), this classification results in individuals who are subthreshold for an official AUD diagnosis but still endorse one or two criteria of dependence. These so-called "diagnostic orphans" (Pollock and Martin, 1999) have been identified in a number of samples (see McBride et al., 2009, 2010) including nationally representative data (e.g., Hasin and Paykin, 1999; McBride et al., 2009, 2010). These studies focus primarily on compar-

ing various diagnostic groups that met formal criteria for an AUD in the past 12 months, endorsed one or two symptoms of dependence in the past 12 months, or reported no AUD symptoms in the past 12 months.

To our knowledge, however, there has been no attention given to diagnostic orphans from a lifetime perspective. As opposed to earlier DSM classifications (e.g., DSM-III [American Psychiatric Association, 1980] and DSM-III-R [American Psychiatric Association, 1987]; see Grant and Harford, 1995), DSM-IV requires symptoms to cluster within a 12-month period; thus, criteria for lifetime AUD is met only if an AUD is diagnosed at some point in the lifetime, based on criterial symptoms clustering in a 12-month period. This classification system results in a "lifetime orphan" diagnostic group—individuals who are subthreshold for a dependence diagnosis in a given 12-month period but who experience one or more dependence symptoms during their lifetime (and, cumulatively, may experience three or more dependence symptoms over their lifetime). Individuals could hypothetically report a nontrivial number of dependence symptoms during their life course but no more than two symptoms during the same 12-month period, thus failing to meet formal lifetime dependence diagnostic criteria. Note that "lifetime" *dependence* orphans could still have lifetime AUD diagnoses if one or more *abuse* criteria are met at any point in the life course. Moreover, individuals who meet lifetime AUD diagnosis through alcohol abuse (i.e., *pure abuse*) but do not experience any lifetime dependence symptoms may differ on important outcomes compared with lifetime alcohol abusers with subthreshold dependence

symptomatology, those with syndromal lifetime dependence (DSM-IV lifetime alcohol dependence), and those who do not meet criteria for any AUD but endorse varying subthreshold dependence symptomatology (i.e., diagnostic orphans). Although it could be argued that individuals who experience dependence symptoms clustered within a given year may exhibit lower levels of functioning compared with individuals who experience a number of nonclustered dependence symptoms across the life course (Grant and Harford, 1995), to the best of our knowledge this has yet to be clearly demonstrated empirically. We anticipate that individuals who experience a number of dependence symptoms during their life span, regardless of clustering, may demonstrate diminished functioning compared with individuals who do not report dependence symptoms.

Lifetime diagnoses are important to both research and clinical considerations. Genetic studies, for example, use lifetime diagnoses to reduce "statelike" relations between alcohol dependence and relevant covariates (e.g., Slutske et al., 2002) and are necessary for establishing family histories of disorder. Lifetime diagnoses are also used as supportive evidence for orders of onset between various comorbid conditions (e.g., depression and AUD; Merikangas et al., 1996; see Sher et al., in press). In addition, adult assessment of child and adolescent disorders (e.g., conduct disorder) inherently use lifetime diagnoses (American Psychiatric Association, 1994). Last, in clinical decision making, lifetime diagnoses of relevant psychopathology are used to inform current diagnoses and, thus, treatment choice (e.g., prescribing of pharmaceuticals with high addiction liability in remitted substance-dependent individuals; Cohen et al., 2002; Collins and Streltzer, 2003). Taken together, these issues suggest that optimal lifetime diagnosis of AUDs is a critical topic for both researchers and clinicians.

The goal of the current article was to compare various diagnostic groups based on lifetime reports of abuse and dependence symptoms on a range of outcomes that included general functioning, personality disorder symptomatology, onset of alcohol use, measures of alcohol consumption, and family history of alcoholism. In particular, we were interested in determining (a) whether there was a group of individuals who experienced extensive but not clustered dependence symptomatology and (b) the clinical correlates of this type of lifetime presentation.

Method

Sample

The 2001-2002 National Epidemiologic Survey on Alcohol and Related Conditions (NESARC) is a study of a representative sample of the United States conducted by the National Institute on Alcohol Abuse and Alcoholism (NIAAA; see Grant et al., 2003, for more details). The NESARC target population was the civilian noninstitutionalized population, 18 years and older, residing in households and group quarters. Face-to-face interviews were conducted with 43,093 respondents (response rate = 81%). Blacks, Hispanics, and young adults (ages 18-24) were oversampled, with data adjusted for oversampling as well as household-level and person-level nonresponse. The weighted data were then adjusted based on 2000 census data to represent the U.S. civilian population. The sample in this study comprised individuals who reported having consumed at least one alcoholic beverage in their lifetime ($N = 34,827$).

Measures

Alcohol Use Disorder and Associated Disabilities Interview Schedule–DSM-IV version (*AUDADIS-IV*). The NIAAA AUDADIS-IV (Grant et al., 2001) was designed to generate DSM-IV diagnoses of alcohol abuse and dependence. As opposed to diagnostic measures that do not assess dependence criteria if no abuse criteria are met (Hasin and Grant, 2004), the AUDADIS-IV assesses all DSM-IV abuse and dependence criteria among participants that report lifetime drinking. As described elsewhere (e.g., Hasin et al., 2007), the AUDADIS-IV provides complete coverage of DSM-IV abuse and dependence items, including past-12-month and before past-12-month assessments. This assessment has been shown to be a reliable self-report structured diagnostic interview (see Grant et al., 2001; Hasin et al., 2007).

Outcome variables. Diagnostic groups were compared on a number of outcome variables relevant to both current and lifetime functioning. Life satisfaction and current functioning (over the last 4 weeks) was assessed by the Short Form 12 Health Survey, Version 2 (SF-12v2; Ware et al., 2002; see also Dawson et al., 2009; Grant et al., 2004; Trull et al., 2010). The SF-12v2 can be scored to produce a norm-based physical component summary score; a norm-based mental component summary score; and, in addition, eight individual scales: physical functioning, role physical (the extent to which health interferes with regular activities), bodily pain, general health, vitality, social functioning, role emotional (the extent to which emotional problems interfere with regular activities), and mental health. All standardized scale scores range from 0 to 100 with a mean of 50 ($SD = 10$); higher scores signify better functioning. Studies support the reliability and convergent validity of the SF-12v2 scale scores in both community and clinical samples (e.g., Ware et al., 2002).

Personality disorders in NESARC are assessed on a lifetime basis and include items assessing DSM-IV avoidant, dependent, obsessive-compulsive, paranoid, schizoid, and antisocial personality disorders (see Hasin et al., 2007; Trull et al., 2010). A count of 103 personality-disorder items (i.e., number of diagnostic items endorsed that resulted in re-

ported impairment) was also included as an outcome variable comparing AUD diagnostic groups. These included items relating to Cluster A (i.e., paranoid and schizoid), Cluster B (i.e., antisocial and histrionic), and Cluster C (i.e., avoidant, dependent, obsessive-compulsive) DSM-IV personality disorders.

Diagnostic groups were also compared on a range of past-year and lifetime alcohol-related items, including maximum lifetime drinks, peak heavy-use frequency (i.e., how often five or more drinks were consumed during period of drinking), age at first drinking, and family history of alcoholism (paternal and maternal).

Demographic variables. Diagnostic groups were also compared on sex and age. All analyses involving comparisons between diagnostic groups and aforementioned outcomes controlled for sex and age.

Procedure

Seven mutually exclusive diagnostic groups were created based on lifetime abuse and dependence symptomatology. Using lifetime dependence-symptom counts in conjunction with formal DSM-IV lifetime diagnoses (i.e., current and/or any past-12-month diagnosis before the last year), we composed the following seven groups (see Table 1): (1) nondiagnosers (no lifetime AUD diagnosis or presence of any dependence symptoms during lifetime); (2) pure abuse (lifetime abuse diagnosis without the presence of any dependence symptoms); (3) DSM-IV dependence (lifetime

dependence diagnosis with or without abuse); (4) 1-2 dependence orphans with abuse (lifetime abuse diagnosis and the presence of one or two dependence symptoms during lifetime); (5) 3+ dependence orphans with abuse (lifetime abuse diagnosis and the presence of three or more dependence symptoms during lifetime but not clustered within a 12-month period); (6) 1-2 dependence orphans without abuse (no lifetime AUD diagnosis and the presence of one or two dependence symptoms during lifetime); (7) 3+ dependence orphans without abuse (no lifetime AUD and the presence of three or more dependence symptoms during lifetime but not clustered within a 12-month period). Note that previous research does not distinguish between Group 6 and Group 7, both of which would be considered lifetime "orphans" in the extant literature.

Analysis

The seven diagnostic groups were compared using SU-DAAN statistical package version 10 (Research Triangle Institute, 2004) that uses Taylor series linearization to make adjustments for complex sampling designs. Statistical comparisons among diagnostic groups involving continuous outcomes (e.g., maximum drinks) were conducted in PROC REGRESS, whereas comparisons involving categorical variables (e.g., family history of alcoholism) were conducted in PROC RLOGIST (Research Triangle Institute, 2004). To account for multiple comparisons, a p value of <.01 was required to reach statistical significance.

TABLE 1. Age, sex, and lifetime dependence symptoms total by diagnostic group

| | | | DSM-IV AUD diagnosers | | | | Non DSM-IV AUD diagnosers | |
Variable	Total sample ($N = 34,827$)	Nondiagnosers ($n = 17,590$)	Pure abuse ($n = 1,471$)	Dependence ($n = 4,781$)	1-2 dependence orphans with abuse ($n = 3,715$)	3+ dependence orphans with abuse ($n = 1,876$)	1-2 dependence orphans without abuse ($n = 4,667$)	3+ dependence orphans without abuse ($n = 727$)
Age, M (SE)	44.67 (0.17)	47.04 (0.26)[a]	47.17 (0.46)[a]	38.45 (0.26)[b]	44.39 (0.27)[c]	44.25 (0.39)[c]	43.04 (0.32)[d]	42.66 (0.70)[c,d]
Sex, % male (SE)	51.23 (0.38)	40.29 (0.59)[a]	65.70 (1.34)[b,c]	66.67 (0.84)[b,c]	65.08 (0.96)[c]	69.25 (1.23)[b]	49.29 (0.95)[d]	48.99 (2.54)[d]
Dependence symptoms, M (SE)	1.35 (0.03)	–	–	4.73 (0.03)[a]	1.51 (0.01)[b]	4.05 (0.03)[c]	1.33 (0.01)[d]	3.40 (0.03)[e]
Dependence symptoms total, % (SE)								
0	52.62 (0.71)	100.00 (0.00)	100.00 (0.00)	–	–	–	–	–
1	14.56 (0.25)	–	–	–	49.24 (0.93)	–	66.61 (0.78)	–
2	10.33 (0.23)	–	–	–	50.76 (0.93)	–	33.39 (0.78)	–
3	7.44 (0.21)	–	–	24.02 (0.77)	–	45.48 (1.41)	–	67.98 (2.03)
4	5.44 (0.17)	–	–	24.13 (0.7)	–	24.04 (1.33)	–	24.92 (2.02)
5	4.1 (0.17)	–	–	20.63 (0.74)	–	15.95 (1.12)	–	6.16 (1.12)
6	3.09 (0.13)	–	–	17.12 (0.67)	–	8.95 (0.87)	–	0.95 (0.37)
7	2.43 (0.12)	–	–	14.1 (0.65)	–	5.59 (0.57)	–	0.00 (0.00)

Notes: All diagnoses and symptoms are lifetime reports. Standard errors are in parentheses. Groups that share a superscript letter by row are not statistically different at $p < .01$. Nondiagnosers = no AUD diagnosis or dependence symptoms; pure abuse = alcohol abuse only without dependence symptoms; dependence = alcohol dependence with or without abuse; 1-2 dependence orphans with abuse = no alcohol dependence but 1 or 2 dependence symptoms; 3+ dependence orphans with abuse = no alcohol dependence but 3+ dependence symptoms; 1-2 dependence orphans without abuse = no alcohol dependence but 1 or 2 dependence symptoms; 3+ dependence orphans without abuse = no alcohol dependence but 3+ lifetime dependence symptoms. DSM-IV = Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition; AUD = alcohol use disorder.

Results

Table 1 displays the differences among the diagnostic groups regarding age, sex, and number of lifetime dependence symptoms. Wald tests suggested, overall, that diagnostic groups significantly differed by age, Wald $F(7, 65) = 11,543.59$, $p < .001$. Follow-up contrasts suggested that the nondiagnoser and pure-abuse categories tended to include older participants, the dependence category comprised generally younger participants, and the other diagnostic groups were intermediate in mean age. Groups that met lifetime AUD diagnosis tended to include more male participants. It is interesting to note that orphan groups without abuse (i.e., 1-2 dependence orphans without abuse and 3+ dependence orphans without abuse) exhibited a roughly equal composition of men and women, whereas members of groups that met formal AUD diagnosis through either dependence or abuse were more likely to be men (see Table 1). The dependence category exhibited the highest number of lifetime dependence symptoms relative to the other diagnostic groups. More than 30% of 3+ dependence orphans with abuse and a nontrivial 7% of 3+ dependence orphans without abuse endorsed five or more dependence symptoms during their lifetimes (see Table 1).

Table 2 exhibits the differences in outcomes by diagnostic group, controlling for sex and age. Wald tests suggested, overall, that diagnostic groups significantly differed on all outcomes (see Table 2). Follow-up contrasts suggested that the group comprising 3+ dependence orphans without abuse was significantly lower on all but one of the life satisfaction and current functioning scales (i.e., bodily pain scale) compared with nondiagnoser and pure-abuse groups.

Moreover, on 80% of the subscales, the group of 3+ dependence orphans without abuse exhibited similar levels of functioning/satisfaction compared with the dependence group. Pure abuse exhibited similar levels of functioning to nondiagnosers and, when differences were found, demonstrated *higher* levels of functioning compared with nondiagnosers. Further, the pure-abuse group tended to display higher levels of functioning/satisfaction compared with the respective abuse categories that endorsed lifetime dependence symptoms (see Table 2). It is important to note, however, that lifetime diagnoses of alcohol abuse in NESARC are discrepant with a previous estimate from a similar representative data set (i.e., National Longitudinal Alcohol Epidemiologic Survey; Grant et al., 1994), and, thus, results involving lifetime estimates of abuse from NESARC data should be interpreted with caution.

Similar patterns emerged regarding personality disorder items and alcohol involvement. The group of diagnostic orphans with extensive dependence (i.e., 3+ dependence symptoms) but without abuse endorsed a lower number of

TABLE 2. Outcomes by lifetime diagnostic groups adjusted for sex and age

Variable	Wald F (9, 65 df)	Nondiagnosers ($n = 17,590$)	DSM-IV AUD diagnosers			Non DSM-IV AUD diagnosers		
			Pure abuse ($n = 1,471$)	Dependence ($n = 4,781$)	1-2 dependence orphans with abuse ($n = 3,715$)	3+ dependence orphans with abuse ($n = 1,876$)	1-2 dependence orphans without abuse ($n = 4,667$)	3+ dependence orphans without abuse ($n = 727$)
SF-12v2 Scale								
Physical disability	41,195.29	51.35 (0.11)[a]	52.42 (0.32)[b]	49.58 (0.19)[c]	51.26 (0.19)[a]	49.39 (0.33)[c]	51.27 (0.18)[a]	49.92 (0.45)[c]
Mental disability	58,854.14	53.45 (0.11)[a]	53.10 (0.25)[a,b]	49.11 (0.17)[c]	52.09 (0.18)[d]	50.35 (0.27)[e]	52.75 (0.14)[b]	50.50 (0.47)[e]
Physical functioning	74,080.09	52.24 (0.1)[a]	53.00 (0.25)[b]	50.33 (0.17)[c]	51.98 (0.17)[a]	50.41 (0.32)[c]	51.88 (0.16)[a]	50.45 (0.43)[c]
Role physical	50,971.5	51.96 (0.11)[a]	52.53 (0.29)[a]	49.82 (0.16)[b]	51.61 (0.18)[a]	49.77 (0.33)[b]	51.68 (0.17)[a]	49.80 (0.43)[b]
Bodily pain	33,549.19	50.86 (0.12)[a,b]	51.57 (0.41)[b]	48.18 (0.2)[c]	50.30 (0.22)[a]	48.66 (0.36)[c]	50.81 (0.21)[a,b]	49.52 (0.59)[a,c]
General health	20,803.49	51.66 (0.15)[a]	52.81 (0.34)[b]	48.12 (0.23)[c]	51.36 (0.24)[a]	48.24 (0.37)[c]	51.39 (0.2)[a]	49.29 (0.58)[c]
Vitality	41,769.92	54.9 (0.14)[a]	54.49 (0.3)[a,b]	51.08 (0.18)[c]	53.38 (0.19)[d]	52.07 (0.29)[e]	54.48 (0.17)[a,b]	52.47 (0.51)[c,d,e]
Social functioning	70,911.23	52.71 (0.09)[a]	53.39 (0.25)[a]	49.45 (0.18)[b]	51.96 (0.2)[c]	50.06 (0.29)[b]	52.16 (0.17)[c]	50.33 (0.48)[b]
Role emotional	52,191.99	51.91 (0.11)[a]	52.52 (0.25)[a]	48.85 (0.17)[b]	51.46 (0.19)[a]	49.77 (0.31)[c]	51.77 (0.13)[a]	49.33 (0.49)[b,c]
Mental health	42,595.21	53.29 (0.13)[a]	52.53 (0.32)[a,b]	48.66 (0.17)[c]	51.7 (0.19)[b,d]	49.70 (0.31)[e]	52.23 (0.17)[b]	50.29 (0.51)[d,e]
PD item count	630.58	2.42 (0.07)[a]	3.89 (0.17)[b,f]	10.59 (0.19)[c]	5.57 (0.13)[d]	7.76 (0.24)[e]	3.57 (0.13)[b]	4.51 (0.25)[f]
Maximum drinks	2,463.55	2.77 (0.04)[a]	5.39 (0.1)[b]	13.80 (0.22)[c]	7.54 (0.11)[d]	11.33 (0.32)[d]	5.48 (0.07)[b]	7.45 (0.28)[e]
Heavy use frequency	2,251.22	0.57 (0.02)[a]	2.58 (0.09)[b]	6.73 (0.06)[c]	4.13 (0.07)[d]	6.15 (0.1)[e]	2.33 (0.05)[b]	4.03 (0.16)[d]
Age at first drinking	40,353.25	20.8 (0.07)[a]	18.14 (0.1)[b,e]	17.51 (0.07)[c]	18.04 (0.06)[b]	17.38 (0.09)[c]	19.22 (0.08)[d]	18.59 (0.19)[e]
Family history (paternal)	495.36	15.55 (0.43)[a]	19.82 (1.18)[b,d]	37.27 (0.85)[c]	24.07 (0.83)[b]	29.51 (1.24)[e]	20.47 (0.74)[d]	24.03 (1.87)[b,d]
Family history (maternal)	712.96	3.86 (0.21)[a]	5.60 (0.75)[b,d]	13.67 (0.57)[c]	7.29 (0.55)[b]	10.72 (0.86)[c]	5.88 (0.42)[d]	6.73 (1.12)[b,d]

Notes: All diagnoses and symptoms are lifetime reports. Standard errors are in parentheses. All Wald tests were significant at $p < .001$. Groups that share a superscript letter by row are not statistically different at $p < .01$. Nondiagnosers = no AUD diagnosis or dependence symptoms; pure abuse = alcohol abuse only without dependence symptoms; dependence = alcohol dependence with or without abuse; 1-2 dependence orphans with abuse = no alcohol dependence but 1 or 2 dependence symptoms; 3+ dependence orphans with abuse = no alcohol dependence but 3+ dependence symptoms; 1-2 dependence orphans without abuse = no alcohol dependence but 1 or 2 dependence symptoms; 3+ dependence orphans without abuse = no alcohol dependence but 3+ lifetime dependence symptoms; DSM-IV = Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition; AUD = alcohol use disorder; SF-12v2 = Short Form 12 Health Survey, Version 2; PD = personality disorder.

personality disorder items compared with DSM-IV AUD diagnostic groups that reported lifetime dependence symptoms (i.e., DSM-IV lifetime abuse with limited or extensive lifetime dependence symptoms and DSM-IV lifetime dependence), a statistically equivalent number of items compared with the pure-abuse group, and a higher number of items compared with the nondiagnosing group. The group of diagnostic orphans with extensive dependence but without abuse also tended to experience lower levels of alcohol involvement compared with AUD diagnostic groups that reported lifetime dependence symptoms but higher levels of alcohol involvement compared with the pure-abuse and nondiagnosing groups, respectively (see Table 2).

Discussion

Overall, these results suggest that diagnostic groups that experience extensive (i.e., three or more) dependence symptoms, regardless of past-12-month clustering (i.e., formal diagnostic criteria), tend to exhibit poorer outcomes compared with participants that meet formal lifetime diagnosis for an AUD through abuse alone. These differences reflect small effect sizes but are similar in magnitude to the differences found between the DSM-IV dependence diagnostic group and other groups. It is striking that a significant group of individuals who failed to meet formal lifetime AUD diagnosis but who endorsed a number of dependence symptoms consistently demonstrated more problematic outcomes on a range of measures compared with individuals who never reported dependence symptoms but who were formally diagnosed with lifetime AUD through alcohol abuse.

These findings have several important implications. First, DSM-IV lifetime diagnostic criteria may exclude individuals with a history of extensive dependence symptomatology that is relevant for case conceptualization and treatment planning. Second, the diagnostic value of the lifetime abuse category, absent of dependence symptomatology, to differentiate individuals on overall functioning and problematic alcohol involvement may be limited, and the current findings are consistent with increasing criticism of the validity of the abuse construct (e.g., Martin et al., 2008). Third, the finding that orphan groups without abuse demonstrated equivalent gender composition suggests that both sexes are at equal risk to experience dependence symptoms that are not clustered within a 12-month period. Thus, current DSM-IV AUD categorizations that consistently show higher prevalences of AUD for men may fail to capture potentially important alcohol-related dysfunctions in women. Fourth, the current findings call into question not only the value of requiring clustering for lifetime dependence diagnoses but also, by extension, the clustering requirement of three of seven dependence symptoms in the past 12 months, a change that was introduced in the DSM-IV and that has raised concerns about the problematic status of past-12-month orphans (e.g.,

McBride et al., 2009) and the dimensional nature of alcohol dependence (e.g., Krueger et al., 2005).

Overall, these results suggest that DSM-V development should consider the benefits and drawbacks of requiring 12-month clustering for lifetime diagnoses. Future studies should explore other outcomes associated with numerous but nonclustered dependence symptoms. In addition, the longitudinal course of individuals who experience dependence symptoms but fail to meet DSM-IV lifetime AUD diagnoses should be investigated.

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