Lifetime Psychiatric and Substance Use Disorders Among Impaired Physicians in a Physicians Health Program: Comparison to a General Treatment Population

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Abstract

Objectives—The prevalence of substance abuse and other psychiatric disorders among physicians is not well-established. We determined differences in lifetime substance use, and abuse/dependence as well as other psychiatric disorders, comparing physicians undergoing monitoring with a general population that had sought treatment for substance use.

Methods—Participants were 99 physicians referred to a Physician's Health Program (PHP) due to suspected impairment, who were administered the Computerized Diagnostic Interview Schedule Version IV (CDIS-IV) to assess the presence of psychiatric disorders. Referred physicians were compared to an age, gender, and education status-matched comparison group from National Epidemiologic Survey on Alcohol and Related Conditions (NESARC) Wave 1, in a 1:1 ratio.

Results—While referred physicians did not differ from their counterparts on lifetime use of alcohol, opiates, or sedatives, they did have significantly higher conditional odds of meeting criteria for alcohol, opiate, and sedative DSM-IV abuse/dependence disorders. Physicians referred

to the PHP had significantly lower odds of obsessive compulsive disorder, major depression, and specific phobia compared to their counterparts.

Conclusions—Physicians referred to a PHP have significantly higher odds of abuse/dependence disorders for cannabinoids, and cocaine/crack, compared to a matched general population sample that had ever sought treatment for substance use, even though physicians were less likely to report use of those substances. Although the rate of alcohol use was similar between the two populations, physicians had higher odds of abuse/dependence for opiates, sedatives, and alcohol. More research is needed to understand patterns of use, abuse/dependence and psychiatric morbidity among physicians.

Keywords

Physician impairment; psychopathology; substance abuse; epidemiology; MDs; drug abuse

There is limited epidemiological research and data on substance use disorders and other psychiatric illnesses among physicians. The dearth of such data is due in large part to methodological constraints. Specifically, physicians might be concerned about divulging confidential information to an interviewer; additionally, physicians might feel stigmatized when admitting to symptoms of mental illness, fearing professional consequences (Marshall 2008; Wallace 2010). Studies conducted among convenience samples of physicians suggest that rates of substance use *disorders* are between 6 and 15%, similar to the general population (Baldisseri 2007; Flaherty and Richman 1993; Hughes 1992; Hughes, Brandenburg et al. 1992). This is in spite of the fact that the prevalence of alcohol and substance *use* is lower among U.S. physicians than the general population (Hughes, Brandenburg et al. 1992). While depression among physicians has been reported to be similar to rates for the general population (12 to 13%) (Dyrbye, Thomas et al. 2006; King, Cockcroft et al. 1992), suicide rates in physicians were found to be significantly higher than those in the general population, with female physicians at a higher risk than their male counterparts when compared to matched controls (Lindeman, Laara et al. 1996; Roy 1985).

No study assessing rates of psychiatric and substance use disorders has been conducted with physicians referred for monitoring due to suspected impairment. Currently, 42 state programs in the United States are members of the Federation of State Physician Health Programs (FSPHP). State programs generally mandate participation in a formal program that monitors abstinence, relapse, and compliance (DuPont, McLellan et al. 2009). In many cases, health care professionals may sign a contract with a PHP voluntarily to avoid sanctions such as job loss, licensure revocation/suspension, and/or other legal matters. Health care professionals diagnosed with substance dependence are generally required to sign a five-year contract agreeing to undergo random drug screens (that decrease in frequency from once per week to once a month or less by year five of the contract), attend self-help group meetings, and attend a monitoring group once per week (DuPont, McLellan et al. 2009). There is evidence from one PHP program that physicians are satisfied with their program participation and recognize its value in their recovery process (Cummings, Merlo et al. 2011; Merlo and Greene 2010).

However, it is not known whether the population of physicians undergoing monitoring has significantly higher rates of lifetime substance use, substance abuse/dependence, or other psychiatric disorders than a general population comparison group that has also undergone treatment. We hypothesized that physicians undergoing monitoring would demonstrate no higher rate of these disorders than their comparison group. To our knowledge, this is the first study to compare impaired physicians to a matched general population group who sought treatment for substance use.

Methods

Physician Participants

Recruitment—Physician participants were recruited from one state's PHP under a waiver of authorization of consent. All individuals had to be at least 18 years of age to participate. Physicians (including allopathic and osteopathic physicians) were recruited by independent clinical evaluators who work with the state PHP. These participants were recruited at evaluation sites in six cities in the Southeastern United States between 2008 and 2009. The study was approved by the Washington University in St. Louis and University of Florida Institutional Review Boards (IRBs) and was conducted in accordance with the Helsinki declaration.

Evaluation—Physician participants were administered the Computerized Diagnostic Interview Schedule Version IV (CDIS-IV) during their initial evaluation following referral to the PHP. The CDIS-IV is a fully structured assessment based on the logic and background of DSM-IV to ascertain lifetime substance use, abuse, dependence, and other psychiatric diagnoses among participants. The Diagnostic Interview Schedule (DIS), in its paper or computer format, has been used in various forms since 1980 (Eaton, Anthony et al. 1997; Robins, Helzer et al. 1981; Robins, Helzer et al. 1984; Robins and Regier 1991). It has undergone extensive reliability testing in various settings (Endicott 1981; Semler, Wittchen et al. 1987; Ustun, Compton et al. 1997). For the current study, the CDIS-IV was computer-administered in a private location. Clinical staff members from each evaluator's office were trained in a 2 day workshop by a co-author of the DIS (LBC) and a frequent user of the DIS (SJN). These staff members briefly explained how to use the CDIS-IV with participating physicians. The evaluator and staff members remained blinded to the CDIS-IV results, and sent CDIS data directly to the state PHP. After removing identifying information, the PHP staff sent de-identified CDIS data to the research team at Washington University on a monthly basis for quality control and analysis. Physicians being evaluated were not required to complete the CDIS-IV; however, nearly all those approached did. Interviews were conducted from December 2007 until March 2010.

General Population Comparison Group

Recruitment—A comparison group for the physicians was sought; it was determined that the publically available National Epidemiologic Survey on Alcohol and Related Conditions (NESARC) Wave 1 (2001-2002) population would be suitable, as participants could be matched on certain conditions to the physicians in our sample (Grant, Dawson et al. 2003).

Evaluation—The comparison group from the NESARC study was interviewed with the AUDADIS, also by computer-assisted personal interview (CAPI) (Grant, Dawson et al. 2003). The AUDADIS closely resembles the CIDI, which is an adaptation of the DIS. Since both the AUDADIS and CDIS-IV matched the DSM-IV as close as possible, and authors of the assessments worked on DSM-IV, a diagnostic crosswalk between the two assessments was not completed. The methods for the NESARC study have been detailed elsewhere (Grant, Dawson et al. 2003).

Matching and Statistical Analysis—Physicians referred for evaluation were randomly matched with a comparison group from NESARC that answered affirmatively to the questions "Ever Sought Help Because of Drinking" or "Ever Sought Help Because of Medicine or Drug Use". The physicians were matched in a 1:1 ratio based on age (within six years), gender, and education status. The variable optimal matching algorithm was implemented using the DIST macro (Kosanke 2004). Education status was coded as having completed a master's degree or higher, or not. By default, all doctors had an education status

of "master's degree or higher". The 99 people in the comparison group were drawn from the 43,093 participants of NESARC; from that group, 2,304 people had sought treatment for drug or alcohol use and of those, 113 met the educational match and from them, 99 people were matched based on age and gender.

For analyses involving DSM-IV substance abuse and dependence, prevalence rates and unadjusted odds ratios (ORs) were calculated only among *lifetime users* of each substance. Conditional prevalence was calculated because individuals cannot meet criteria for abuse or dependence for a substance they have never used. If a use or abuse/dependence category had a prevalence of zero in the sample, a logit estimator was used to estimate the odds ratio. All analyses were performed using SAS® proprietary software (SAS version 9.3, SAS Institute NC, USA).

Results

For descriptive purposes, Table 1 displays the specialties of the physicians referred to the PHP (n=99). Family practice and anesthesiology were the most highly-represented specialties. Shown in Table 2 are the demographic characteristics of physicians, along with the age, gender, and educational achievement-matched comparison group from the general population group that sought treatment. As expected, there was no significant difference in age, gender, or educational status. There was also no difference in the racial/ethnic makeup of the two groups. Physicians were significantly more likely to self-report "excellent health" than their general population counterparts (63.6% vs. 31.3%, $p < 0.01$).

Substance use disorders (conditional on lifetime use of each respective substance) are shown in Table 3 for physicians and the comparison group. While there was no significant difference in lifetime use of alcohol, opiates, and sedatives between physicians and the comparison group, physicians had significantly higher odds of having lifetime alcohol (OR 2.56 (95% CI 1.29, 5.06)), opiate (OR 86.58, (95% CI 4.71, 1589.90)), or sedative (OR 54.76, (95% CI 2.87, 1045.18)) DSM-IV abuse/dependence. While physicians and their counterparts reported smoking at similar rates, physicians had significantly lower lifetime odds of tobacco dependence (OR 0.06, (95% CI 0.02, 0.16)). Physicians referred to the PHP had significantly *lower* odds of lifetime use, but *higher* odds of lifetime abuse/dependence for cocaine/crack and cannabis compared to the comparison group (see Table 3). Lifetime amphetamine use (OR 0.21, (95% CI 0.09, 0.48)) was also lower among referred physicians than the comparison group, though there was no difference in abuse/dependence.

Table 4 compares other psychiatric disorders between referred physicians and the matched comparison group. As shown, the only significant differences were for DSM-IV major depressive episode (OR 0.50, 95% CI (0.28, 0.90)) specific phobia (OR 0.21, 95% CI (0.06, 0.75)), and obsessive compulsive disorder (OR 0.04, 95% CI (0.01, 0.29)), with physicians meeting criteria at lower rates compared to their matched comparison group.

Discussion

To our knowledge, this is the first report of psychopathology among physicians referred to a PHP due to suspected impairment. It is also the first study to compare referred physicians to participants from the general population, matched on specific characteristics, including treatment seeking. Thus, it is a glimpse into a vulnerable and hidden population that has been previously neglected in epidemiological research. Given the significant public health implications of physician impairment, research in this area is clearly needed.

We found that physicians undergoing monitoring for substance use or behavioral problems were more likely than a matched general population sample to meet criteria for alcohol,

opiate, and sedative abuse/dependence (among those who had ever used a particular drug) even though there was no difference in overall use between the two groups. These findings align with an earlier study suggesting that rates of opioid dependence and abuse are higher among physicians than matched controls (Hughes, Brandenburg et al. 1992) where both groups were *not* in treatment programs. Many hypotheses have been presented to explain this finding, including the fact that physicians generally have increased access and exposure to these drugs (Cummings, Merlo et al. 2011; Merlo, Goldberger et al. 2008).

Another important finding was that physicians suspected of impairment had significantly *lower* lifetime *use* of cannabis and cocaine/crack than the comparison group, but among those who had ever used, they had *higher* prevalence of abuse/dependence. It is also worth noting that of the drugs for which physicians had lower odds of reporting lifetime use (amphetamines, cannabis, and cocaine/crack), all were illicit. Much of the research regarding physician drug abuse has focused on alcohol and prescription drug abuse, and there is little data regarding illicit drug use among physicians. Further research is needed.

Most studies ignore conditional prevalence and choose to present rates of substance abuse/dependence using the total number of the sample as a denominator. Since lifetime use among the physicians and general population differed significantly for some drugs, the conditional prevalence rate is a better indicator of liability for abuse/dependence.

There were few significant differences in non substance-related psychiatric disorders between physicians referred for evaluation and the general population, with physicians displaying significantly lower rates of major depression, OCD, and specific phobia. This conflicts with results of previous studies that suggest the rate of depression among physicians is similar to that of the general population (Dyrbye, Thomas et al. 2006; King, Cockcroft et al. 1992). This may be the result of a less comprehensive diagnostic approach and methodology in the earlier studies. Additionally, these studies did not concern populations that had sought treatment. More studies evaluating depression among physicians in general, and specifically among those suspected of impairment, must be conducted.

The demographics of the physicians studied closely resembled those of the current practice population in the United States (Runy 2009). Recent surveys have shown the average age of this population to be 41-49, similar to the 45.6 in the survey (Runy 2009). Moreover, the gender split shown among these physicians referred for evaluation (76.7% male, 23.3% female) resembles that of the American physician practice population (Runy 2009). This may suggest that gender and age are not likely factors for referral for monitoring. Further research is needed.

This study was launched as a pilot study to understand the feasibility of conducting diagnostic assessments in an evaluator's office and to evaluate the prevalence of psychiatric conditions among physicians undergoing monitoring. The strengths of this study include the acceptance of the assessment in the practice, although the team felt that a stronger relationship between evaluators and academics would be favorable. Additionally, information on symptoms was obtained using a standardized instrument that was administered by computer, removing interviewer biases. While our feasibility study did not allow evaluators to access the results of the CDIS-IV, a future study where evaluators were offered access to the CDIS-IV results would be beneficial.

Examining the particular psychopathology of this group may help elucidate why the treatment facilitated by PHP programs has been so successful (Merlo and Gold 2008). A study examining the 5-year outcomes of physicians sampled from 16 state PHPs found that 78% of participants had no positive alcohol or drug test results over this monitoring period, and that 72% continued to practice medicine (DuPont, McLellan et al. 2009; Gold 2005).

Without such data, and without data on psychopathology among physicians in general, our best option is to compare these physicians' substance use disorders with a matched comparison group from the general population who had also sought treatment, as we have done.

While there were a number of strengths, limitations included the fact that the sample was small (n=99 impaired physicians), and from one state, leading to high confidence intervals for the odds ratios. The general population group from NESARC was also small, due to the low proportion of people with master's degrees or higher who had ever sought drug/alcohol treatment in that sample, and explains the high confidence intervals on many of the odds ratios. In addition, the issue of stigma that could result from reporting symptoms of psychiatric disorders raised earlier may affect the findings.

Conclusions

In conclusion, physicians suspected of impairment that had ever used alcohol, cocaine, cannabis, opiates, and sedatives had significantly higher rates of abuse/dependence than members of the general population who had tried these substances. More research is needed to understand psychiatric morbidity in physicians, especially those suspected of impairment, due to their higher risk for abuse.

Acknowledgments

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Table 1

Specialties of Physicians Surveyed

Specialty	#	Specialty	#
Family Practice	12	Pulmonary Disease	3
Anesthesiology	10	Otology	2
Internal Medicine	8	Cardiology	2
Surgery	6	Dermatology	2
Pediatrics	6	Gastroenterology	2
Emergency Medicine	5	Urology	2
Obstetrician/Gynecologist	4	General Practice	1
Neurological Surgery	3	Preventative Medicine	1
Psychiatry	3	Radiology	1
Orthopedic Surgery	3	Resident	1
Plastic Surgery	3	Unspecified/Unknown	19

Table 2

Demographics of Physicians and NESARC Wave 1 matched comparison group

	Physicians (n=99)	NESARC Wave 1 matched comparison group(n=99)	p-value
Age (Mean (SD))	45.6 (10.8)	47.1 (10.3)	0.32
Male gender	76 (76.7%)	76 (76.7%)	1.00
Master's Degree or Higher	99 (100.0%)	99 (100.0%)	1.00
Race/Ethnicity:			0.13
Non-Hispanic White	72 (72.7%)	82 (82.8%)	
Non-Hispanic Black	2 (2.0%)	5 (5.1%)	
Hispanic	14 (14.1%)	8 (8.1%)	
Asian	7 (7.1%)	2 (2.0%)	
Other	4 (4.0%)	2 (2.0%)	
Married	53 (53.5%)	43 (43.4%)	0.16
Self Reported "Excellent" Health	**63 (63.6%)**	**31 (31.3%)**	**<0.01**

Abbreviations: NESARC, National Epidemiologic Survey on Alcohol and Related Conditions; SD, Standard Deviation

Table 3

Substance Use Disorders of Physicians and NESARC Wave 1 Matched Comparison Group[*]

Substance	Physicians (n=99)	NESARC Wave 1 matched comparison group (n=99)	OR (95% CI)
Alcohol	89 (91.8%)	97 (98.0%)	0.23 (0.05, 1.11)
Abuse/Dependence	**31 (35.2%)**	**17 (17.5%)**	**2.56 (1.29, 5.06)**
Amphetamines	**8 (8.3%)**	**30 (30.3%)**	**0.21 (0.09, 0.48)**
Abuse/Dependence	1 (12.5%)	0 (0.0%)	12.2 (0.45, 330.38)
Cannabis	**28 (29.2%)**	**64 (64.6%)**	**0.23 (0.12, 0.41)**
Abuse/Dependence	**5 (17.9%)**	**1 (1.6%)**	**13.70 (1.52, 123.54)**
Cocaine/Crack	**18 (18.8%)**	**37 (37.4%)**	**0.39 (0.20, 0.74)**
Abuse/Dependence	**8 (44.4%)**	**0 (0.0%)**	**60.7 (3.23, 1140.58)**
Opiates	26 (27.1%)	23 (23.2%)	1.23 (0.64, 2.35)
Abuse/Dependence	**17 (65.4%)**	**0 (0.0%)**	**86.58 (4.71, 1589.90)**
Sedatives	17 (17.7%)	24 (24.2%)	0.67 (0.33, 1.35)
Abuse/Dependence	**9 (52.9%)**	**0 (0.0%)**	**54.76 (2.87,1045.18)**
Tobacco	63 (64.9%)	71 (71.7%)	0.73 (0.40, 1.34)
Dependence	**6 (9.5%)**	**45 (63.4%)**	**0.06 (0.02, 0.16)**

Abbreviations: NESARC, National Epidemiologic Survey on Alcohol and Related Conditions; OR, Odds Ratio

[*] Percentages out of participants with data

Table 4

Psychiatric Disorders of Physicians and NESARC Wave 1 matched comparison group [*]

	Physicians (n=99)	NESARC Wave 1 matched comparison group (n=99)	OR (95% CI)
Agoraphobia	1 (1.0%)	4 (4.0%)	0.24 (0.03, 2.21)
ASPD	7 (7.2%)	11 (11.1%)	0.62 (0.23, 1.68)
Major Depression	**30 (30.3%)**	**46 (46.5%)**	**0.50 (0.28, 0.90)**
Generalized Anxiety Disorder	7 (7.1%)	6 (6.1%)	1.18 (0.38, 3.64)
Hypomanic Disorder	5 (5.2%)	3 (3.0%)	1.74 (0.40, 7.49)
Manic Disorder	6 (6.2%)	9 (9.1%)	0.66 (0.23, 1.93)
OCD	**1 (1.0%)**	**21 (21.2%)**	**0.04 (0.01, 0.29)**
Pathological Gambling Disorder	1 (1.0%)	1 (1.0%)	1.03 (0.06, 16.73)
Social Phobia	5 (5.1%)	7 (7.1%)	0.70 (0.21, 2.28)
Specific Phobia	**3 (3.0%)**	**13 (13.1%)**	**0.21 (0.06, 0.75)**

Abbreviations: ASPD, Antisocial Personality Disorder; OCD, Obsessive Compulsive Disorder; NESARC, National Epidemiologic Survey on Alcohol and Related Conditions; OR, Odds Ratio

[*] Percentages out of participants with data