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Alexa Cares MPH, Elizabeth Pace MSM RN CEAP, Jean Denious PhD & Lori A. Crane PhD MPH

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Substance Use and Mental Illness Among Nurses: Workplace Warning Signs and Barriers to Seeking Assistance

Alexa Cares, MPH,[1] Elizabeth Pace, MSM, RN, CEAP,[2] Jean Denious, PhD,[1] and Lori A. Crane, PhD, MPH[3]

ABSTRACT. *Background:* Although some studies have examined the prevalence of substance use among nurses, few have assessed substance use in the workplace or early cues for identifying these health conditions. Primary data collected as part of a larger program evaluation were examined with the purpose of better understanding (a) the context and perceived consequences of substance use and mental illness among nurses and (b) barriers and opportunities for earlier identification and treatment of these issues among nurses, their colleagues, and employers. *Methods:* Anonymous surveys were mailed to 441 active and recent participants of a peer health assistance program in the summer of 2010. The survey examined drug-related behaviors in the workplace; behavioral cues that may permit earlier identification of substance use and mental illness; perceptions of barriers to seeking assistance; and strategies for preventing problems and overcoming barriers to seeking assistance. *Results:* Responses were received from 302 nurses (69%). Nearly half (48%) reported drug or alcohol use at work, and two fifths (40%) felt that their competency level was affected by their use. More than two thirds of respondents thought their problem could have been recognized earlier. The most highly rated barriers to seeking assistance for substance use and mental illness included fear and embarrassment and concerns about losing one's nursing license. Respondents recommended greater attention be paid to early identification of risk factors during nurses' professional training as a prevention strategy. *Conclusions:* Findings from this study provide preliminary data that can be used by schools of nursing and health care employers to improve early identification of nurses' substance use and mental illness treatment needs. These data also suggest a need for more research to explore the prevention and early identification of co-occurring disorders in health care settings where nurses practice.

Keywords: Alcohol, barriers to seeking assistance, drugs, mental illness, nurses, peer health assistance program, substance use, worksite warning signs

INTRODUCTION

Research suggests that nurses experience alcohol, drug use, and mental illness at rates that mirror or exceed those found in the general population.[1,2] Studies also show that stress and other work demands may contribute to substance use[3,4] and mental illness, such as depression.[5] Substance use among nurses is a matter of public safety, putting nurses and their patients at risk.[6,7] Understanding the nature of substance use and mental illness among nurses, as well as potential approaches for early identification of these problems and the barriers to seeking assistance, is crucial to improving prevention, intervention, and rehabilitation services. Recognizing these early cues may facilitate the identification, treatment, and return of nurses to the workforce. This paper explores primary data collected as part of a larger program evaluation to better understand (a) the context and perceived consequences of substance use and mental illness among nurses and (b) barriers and opportunities for earlier identification and treatment of these issues among nurses, their colleagues, and employers.

[1]*OMNI Institute, Denver, Colorado, USA*
[2]*Peer Assistance Services, Inc., Denver, Colorado, USA*
[3]*Colorado School of Public Health, University of Colorado Anschutz Medical Campus, Aurora, Colorado, USA*
Correspondence should be addressed to Alexa Cares, MPH, OMNI Institute, 899 Logan Street, Suite 600, Denver, CO 80203, USA. E-mail: acares@omni.org

Prevalence and Predictors of Substance Use Among Nurses

According to the National Survey on Drug Use and Health (NSDUH), an estimated 20.6 million Americans (8% of the population) aged 12 and older were classified with substance dependence or abuse in 2011.[8] Of those, 14.1 million had dependence or abuse of alcohol but not illicit drugs; 3.9 million had dependence or abuse of illicit drugs but not alcohol; and 2.6 million were classified with dependence or abuse of both.

Although the research on nurses with substance use disorders has grown in recent decades,[9] studies' various approaches to measuring prevalence make it challenging to draw comparisons.[7(p2)] In addition, the prevalence of substance abuse among nurses is difficult to determine, as nurses may underestimate the amount and impact of their substance use patterns and/or fear legal and professional repercussions, leading to underreporting.[10] Estimates indicate, however, that rates are lower among nurses for alcohol use disorders (5% among nurses[11] compared with 8% among the general population[12]); the same for drug use disorders (2%)[13] and significantly greater for nonmedical prescription drug use (7% among nurses[14] compared with 3% in the general population[15]).

Environmental factors associated with substance use among health care professionals include a disrupted lifestyle due to inconsistent work schedules,[16] role strain, and high expectations at work.[17] Personal risk factors for substance-related impairment among nurses include depression, burnout,[18,19] history of sexual abuse, and family history of depression and alcoholism.[20] A 1998 study found that nurses in high strain jobs were 50% to 60% more likely to be nonmedical drug users compared with nurses working in low strain nursing jobs.[4(p49)] Rates of drug and alcohol use have been found to vary greatly by specialty, with nurses working in oncology, psychiatry, adult critical care, and emergency units reporting the highest prevalence.[21] Pediatric critical care nurses and emergency nurses had the highest rates of cocaine and marijuana use (7%), followed by adult critical care nurses (6%).[21(p583)] Prescription drug use was less varied, at 7% across specialties.[21(p583)]

Prevalence and Predictors of Mental Illness Among Nurses

According to the Centers for Disease Control and Prevention (CDC), mental illness (which includes all diagnosable mental disorders) results in more disability in developed countries than any other group of illnesses, including heart disease and cancer.[22] Studies have found that about 25% of US adults have a mental illness, and nearly 50% of adults will develop at least 1 mental illness during their lifetime.[23] The CDC analyzed Behavioral Risk Factor Surveillance System (BRFSS) data and determined that among 235,067 adults, 9% met the screening criteria for a depressive disorder (including major depression, nonspecified depression, minor depression, or dysthymia).[24] Several studies have found high rates of depression among nurses specifically. One study that screened 1171 registered nurses (RNs) employed in hospital settings in North Carolina found that 18% exhibited signs and symptoms of major depression, as listed in the *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition*, and measured by the Patient Health Questionnaire (PHQ-9).[25] Another study found that 35% of medical-surgical nurses scored above the cutoff for mild or moderate depressive symptoms, as measured by the Center for Epidemiologic Studies—Depression Scale (CES-D).[26]

Research also shows that people with drug and alcohol dependence are more likely to have co-occurring psychiatric disorders, such as mood, personality, and anxiety disorders.[27] The National Comorbidity Survey found that 51% of those surveyed with a lifetime alcohol or other drug disorder also indicated that they had a lifetime mental health disorder.[28]

Although some studies have examined the prevalence of substance use problems among nurses, few have assessed substance use in the workplace or early cues for identifying these health conditions. We conducted an anonymous mail survey of 302 participants of a peer health assistance (PHA) program for nurses in the summer of 2010. The purpose of the survey was to evaluate a PHA program and services and to examine the following: substance use patterns and drug-related behaviors in the workplace; behavioral cues that may permit earlier identification of substance use and mental illness; perceptions of barriers to seeking assistance; and strategies for preventing problems and overcoming barriers to seeking assistance after problems have developed.

METHODS

Program Description

The PHA program described here is administered by a nonprofit organization with a long history of providing substance abuse prevention and intervention services in workplaces and communities. The organization contracts with the state Board of Nursing for services required in the Nurse Practice Act. The program provides a continuum of services to registered nurses (RNs) and licensed practical nurses (LPNs) who may be experiencing physical, emotional, psychiatric, psychological, drug or alcohol abuse problems that may be detrimental to their ability to practice nursing. Nurses may self-refer to the program, or may be referred by others, including the state Board of Nursing, employers, treatment providers, family, and friends. The nurse contacts the program to schedule a comprehensive bio-psycho-social assessment. If the nurse is determined to be unsafe to practice with reasonable skill and safety, a rehabilitation contract is implemented. Individualized rehabilitation contracts vary from 1 to 5 years, with case managers guiding nurses through 5 phases of case management, including (1) intake and assessment, which determines the most appropriate level of treatment; (2) development and signing of contract; (3) structured monitoring; (4) reduced restrictions as recovery stabilizes; and (5) discharge with recovery plan. In 2010, the organization contracted with faculty in a public research university's school of public health to conduct an independent evaluation of the PHA program's client perceptions and experiences in order to inform further prevention and intervention efforts.

Sample

All 441 participants enrolled in the PHA program between June 1, 2008, and March 31, 2010, were included in the sample. The evaluation plan was reviewed by the state's Multiple Institutional Review Board and received a designation of "Not Human Subjects Research" because of its purpose as program evaluation.

Measures

An original, anonymous survey was developed for the primary purpose of collecting program evaluation data. The questionnaire was pilot-tested by a group of program participants, and their feedback was reflected through survey revisions prior to administration.

The final questionnaire comprised of 104 items assessing a broad range of topics related to the substance use and/or mental illness that brought participants to the program and participants' perspectives regarding the program. An additional 13 items were asked only of participants who came to the program because of alcohol or drug problems. Survey items excluded from analysis were those specific to respondents' satisfaction and experiences with the program; all survey items were reported in full to the state Board of Nursing. All questions were answered using fixed response options. Most questions also provided an "Other" response option and allowed respondents to provide detailed answers.

Survey Implementation

Participants were sent a letter informing them about the evaluation and that they would be mailed a survey within several weeks. The first survey was mailed to participants with a postage-paid envelope addressed to the evaluator. In addition, a postage-paid postcard addressed to the organization was included with the survey. The postcard included the participant's program identification number, and each participant was asked to mail the postcard back separately from the survey. This approach allowed the organization to track participation in the survey without linking client numbers to survey responses, thereby protecting participant confidentiality. A $5 cash incentive was included with the first mailing to encourage participation. Participants who did not mail back a postcard were mailed up to 2 more surveys approximately 1 and 2 months later, respectively, in order to maximize the participation rate.

Data Analyses

Analyses were primarily descriptive and included frequency distributions and mean scores, as appropriate. Most questions provided an "Other" response option, and respondents were allowed to write in additional information as necessary. These responses were also reviewed to provide additional detail. Analyses were conducted in SPSS version OS X for Mac (IBM, Armonk, NY). To compare respondents and nonrespondents, aggregate data were provided by the organization and Open Epi software[29] was used to assess statistical significance of differences.

RESULTS

Key Characteristics of Respondents

The evaluator received 302 of 441 surveys, for a response rate of 69%. Table 1 describes the key characteristics of the sample. The majority of respondents (81%) were female, and over two thirds (69%) were 35 to 54 years old. Half (51%) of all respondents reported that they had been referred to the program by the regulatory board, 34% were self-referred, and 18% were referred by an employer or manager. More than half of respondents (57%) reported having active licenses, and 28% reported that their licenses were active with restrictions, stipulations, or probation. Sixty percent were actively practicing as nurses at the time of survey administration, and 17% were seeking employment in nursing. Two thirds (76%) of respondents were enrolled in the program at the time of administration, and the majority of enrolled participants reported 7 to 24 months of participation in the program.

Respondents Compared With Nonrespondents

Demographic data from the program's database were provided for those who did ($n = 308$) versus did not ($n = 133$) return postcards in order to examine representativeness of the analysis sample. Six more postcards were returned than surveys, and it was not possible to identify those who returned a postcard but did not complete a survey or vice versa.

Respondents were somewhat older than nonrespondents (56% of respondents were ≥45 years old compared with 41% of nonrespondents; $P < .01$). Additionally, respondents were more likely than nonrespondents to be currently enrolled in the program (respondents = 76%, nonrespondents = 48%; $P < .01$). Respondents were also more likely to have been in the program for a longer amount of time (71% of respondents had participated for over 1 year as compared with 56% of nonrespondents; $P < .01$). No differences between groups were observed for gender (81% of respondents were female and 82% of nonrespondents were female; $P = .78$) or for the presenting health problem (90.0% of respondents presenting problem was a substance use disorder or a co-occurring substance use and mental health disorder compared with 92.5% of nonrespondents; $P = .25$).

Prevalence of Substance Use and Mental Illness

When asked about the health problems that led them to engage with the program, the majority of participants ($n = 256$; 85%) said that they were there because of problems related to alcohol and/or drugs (45% indicated problems with alcohol, 33% indicated a single drug, and 27% indicated problems related to more than 1 drug). Respondents could indicate more than 1 problem that brought them to the program, so there is overlap between groups. Twenty-three percent of respondents reported mental illness. Additional problems included physical impairment (3%), anger management (2%), "other" behavioral diagnosis (2%), and issues with sexual boundaries (1%). Eighteen percent of respondents indicated that either alcohol, or a single drug, or more than 1 drug *and* a mental health problem or other behavioral health problem brought them to the program. Six respondents selected the "Other" option and indicated that a DUI (driving under the influence) brought them to the program.

Type and Method of Substance Use

Of the 256 individuals who indicated seeking services because of an alcohol or drug problem, 247 individuals responded to additional questions about their alcohol and drug use. Fifty-five percent reported using alcohol, and 50% reported using opiates at the time of seeking services. Other drugs abused were benzodiazepines (9%), cocaine (8%), marijuana (8%), amphetamines (7%),

TABLE 1
Key Characteristics of Respondents ($N = 308$)*

Characteristic	*n*	%
Sex		
Male	59	19.2
Female	249	80.8
Age		
18–24	2	0.6
25–34	45	14.6
35–44	89	28.9
45–54	122	39.6
55–64	45	14.6
65+	4	1.3
Unknown	1	0.4
Referral source		
Regulatory board	153	51.0
Self-referral	102	34.0
Employer or manager	55	18.3
Attorney	5	1.7
Treatment provider	4	1.3
Professional colleague	4	1.3
Professional intervention team	4	1.3
Other family member	3	1.0
School	1	0.3
Employee	1	0.3
Other alternative/diversion program	21	7.0
Licensure status with regulatory board		
Active	170	56.5
Active with restrictions, stipulations, or probation	84	27.9
Suspended	21	7.0
Inactive	8	2.7
Lapsed	5	1.7
Surrendered or relinquished	5	1.7
Never licensed	2	0.7
Revoked	1	0.3
Current employment status		
Currently practicing	181	60.3
Seeking employment in my licensed profession	51	17.0
Employed but not in health care	18	6.0
Seeking employment but not in my licensed profession	17	5.7
Not employed and not seeking employment	11	3.7
Employed in another capacity in health care	7	2.3
Retired	6	2.0
Amount of time that current participants had participated in the program (self-report; $N = 227$)		
Less than 3 months	8	3.5
3–6 months	20	8.8
7–12 months	48	21.1
13–18 months	46	20.3
19–24 months	64	28.2
More than 25 months	41	18.1
Amount of time since past participants had participated in the program (self-report; $N = 74$)		
Less than 3 months	11	3.6
3–6 months	10	13.5
7–12 months	27	36.5
13–18 months	15	20.3
19–24 months	10	13.5
More than 25 months	1	1.4

*The administering organization provided sex and age data for the respondents and nonrespondents because no demographic questions were asked in the survey. The organization received 308 postcards from participants who said that they had completed the survey; however, the evaluator only received 302 surveys. Therefore, $N = 308$ for the sex and age questions, and $N = 302$ for the rest of the questions in this table. "Other" responses are not included in table.

TABLE 2
Substance Use at Work and the Influence of Use on Job Performance ($N = 248–252$)

Question/Response options	*n*	%
Did you ever use alcohol or drugs while at work?		
Yes	120	47.6
No	132	52.4
Did your use of alcohol or drugs affect your competency level at work?		
Yes	100	40.3
No	103	41.5
Don't know	45	18.1
Overall, how much do you think your alcohol or drug use affected your job performance?		
A lot	56	22.6
Somewhat	61	24.6
Little	58	23.4
Not at all	68	27.4
Don't know	5	2.0
Looking back, do you think you ever put patients at risk when you were using alcohol or drugs?		
Yes, put patients at risk one or more times	68	27.2
No, never put patients at risk	151	60.4
Don't know	31	12.4

and tramadol/soma (5%). Write-in responses indicated that participants also used diet pills and antidepressants.

Substance Use in the Workplace and Perceived Impact of Use

Respondents seeking services because of alcohol or drug problems were asked how they obtained drugs, frequency of use at work, and how substance use affected their job performance.

One quarter of respondents (25%) indicated that they obtained drugs in the workplace; of these respondents, 12% reported that they ordered drugs for their own use, 9% obtained waste from "sharps" containers, 8% replaced drugs they had taken with other drugs, and 4% forged prescriptions. Two respondents (<1%) reported that they replaced sterile needles with used needles (respondents could select "Yes" to more than 1 question, so there is overlap between groups).

Nearly half of respondents (48%) reported that they had used drugs or alcohol while at work. Forty percent felt that their competency level at work had been affected by their substance use, 42% felt that their competency level was unaffected, and 18% were unsure. When asked about overall impact on job performance, 48% felt that their performance was affected a lot or somewhat by alcohol or drug use. Twenty-seven percent of respondents acknowledged that patients were put at risk 1 or more times because of their substance use, and 12% were unsure about whether they had ever put patients at risk (Table 2). Seventy percent of respondents reported that they did not use needles, 28% reported that they used sterile needles every time, and <2% ($n = 4$) said that they sometimes used needles that were not sterile.

Earlier Recognition and Prevention of Substance Use or Mental Illness

A series of questions was asked to better understand how respondents' presenting problems might have been prevented or identified and treated sooner. More than two thirds (68%) of respondents thought their problem could have been recognized earlier. Of those, three quarters of respondents (76%) thought they themselves might have recognized their problem(s) sooner. Half (52%) thought that their spouse or partner might have recognized it sooner. Others who might have recognized the problem sooner included a friend (37%), employer (37%), coworker (37%), other family member (34%), or professional colleague (20%). Fifteen respondents checked "Other"; of those, 4 respondents said that a doctor may have recognized their problem(s) earlier.

The most commonly reported cue or clue that respondents thought could have helped someone in the workplace identify problems earlier was a change in physical or emotional condition (45%). Other cues reported were increased use of pain medications documented in patients' charts (24%), repeated absenteeism and/or excessive tardiness (22%), decreased reliability (19%), increased wastage or breakage of drugs (18%), and unexplained disappearances on the job (16%) (Table 3). Cues or clues described in the "Other" category included the smell of alcohol, working extra shifts (i.e., greater drug access), and verbalized stress to coworkers.

Barriers to Seeking Assistance

All respondents were asked to rate potential barriers to seeking assistance for their substance use, mental health, or health problems. Over 50% of respondents answered "somewhat" or "a lot" to the following barriers: too scared, too embarrassed to seek assistance, concerns about confidentiality, and thought they would lose their license. Also rated highly (42%–47%) were: did not know about the program and too ill to seek assistance. Other barriers endorsed by fewer participants (≤22%) were: couldn't pay, no insurance, and did not have a health care provider (Table 4). Thirty-eight respondents reported additional barriers to seeking assistance, including denial, stigma, ego, fear of attending 12-Step program, fear of prison, and high cost of rehabilitation programs.

Participants also indicated factors that helped them overcome barriers to seeking assistance. The most highly rated items (over

TABLE 3
Cues or Clues for Earlier Identification of Health Problem(s) at the Workplace ($N = 279$)

Behavioral cue/clue	*n*	%*
Change in physical or emotional condition	126	45.2
Increased use of pain medications documented	66	23.7
Repeated absenteeism and/or excessive tardiness	62	22.2
Decrease in dependability	53	19.0
Increase in wastage or breakage of drugs	49	17.6
Unexplained disappearances on the job	44	15.8
Missing drugs or unaccounted doses	32	11.5
Complaints from others of irritability, physical roughness, or verbal abuse	27	9.7
Omitted, illogical, or illegible charting	25	9.0
Other behavioral cues for identifying health problem at the workplace	30	10.8

*Participants could indicate more than one cue for identifying their health problem(s) at the workplace, so the percentage total is greater than 100%.

60% answering "somewhat" or "a lot") were greater knowledge of ability to maintain professional license, support by friends, greater confidentiality in process of seeking assistance, support by professional colleagues, support by spouse/partner, and greater knowledge of treatment services. The remaining items were endorsed between 53% and 59% and included lower cost of treatment services, insurance coverage of treatment, confrontation or intervention by family or colleagues, and knowledge of the program. Thus, all of the items presented in the survey were perceived to be at least somewhat important to reducing barriers to seeking assistance (Table 4). Additional strategies for overcoming barriers to seeking assistance mentioned by participants included alleviating fears of punishment, knowledge of the disease aspect of addiction; having an anonymous place to call to ask for help, allowing

TABLE 4
Barriers to Seeking Assistance, Overcoming Barriers, and Preventing Behavioral Health Problems ($N = 290$)

Barrier	Percentage of respondents who answered "Somewhat" or "A lot"	Mean score (4-point scale)
Barriers to seeking assistance		
Too scared	63.0	2.83
I was too embarrassed to seek assistance	61.1	2.77
I was concerned about confidentiality	56.4	2.62
I thought I would lose my license	54.5	2.61
I did not know about [the program]	47.3	2.42
I was too ill to seek assistance	42.2	2.21
Couldn't pay	21.4	1.64
No insurance	12.7	1.38
I didn't have a health care provider	8.8	1.25
Overcoming barriers to seeking assistance		
Greater knowledge of ability to maintain professional license	68.4	2.96
Support by friends	64.0	2.85
Greater confidentiality in process of seeking assistance	60.0	2.79
Support by professional colleagues	62.2	2.78
Support by spouse/partners	60.1	2.77
Greater knowledge of treatment services	61.5	2.72
Lower cost of treatment services	57.6	2.68
Insurance coverage of treatment services	56.4	2.67
Confrontation or intervention by family or colleagues	58.5	2.64
Knowledge of [the program]	53.0	2.54
Ways to prevent behavioral health problems		
Emphasis on identification of risk factors during professional training	64.8	2.82
Awareness of programs such as this one	60.9	2.75
Awareness of workplace stressors	60.3	2.70
Frequent contact with peers to avoid isolation	52.8	2.42
Adherence to storage and administration standards of controlled substances in the workplace	50.4	2.41
Understanding financial demands of getting started in profession	30.3	1.87
Awareness of financial pressure of incurred educational debts	24.6	1.77

*Respondents answered this question on a 4-point scale where 1 = "Not at all," 2 = "A little," 3 = "Somewhat," and 4 = "A lot."

time off from work to keep appointments, and education on substance abuse and the consequences of drinking and driving.

When asked how much various strategies might help prevent substance use and mental illness, the highest rated strategy (65%) was emphasizing identification of risk factors during professional training. Other strategies rated over 60% were awareness of workplace stressors and of programs like this one. Frequent contact with peers to avoid isolation and adherence to storage and administration standards of controlled substances in the workplace were identified by about half (50%–53%) of the sample. The lowest scored items (≤30%) were understanding financial demands of getting started in the profession and awareness of financial pressure of incurred educational debts (Table 4). In addition, 6 respondents checked "Other" and said that more education during nursing school or in the workplace could help prevent these problems. Additional other responses included increased awareness of nursing board regulations, support without the fear of losing our jobs, having nurses from the program go into hospitals and share their experiences, and changes in legislation to protect nurses in the practice of their profession.

An open-ended item at the end of the survey allowed participants to provide additional comments. In total, 178 survey respondents (58%) provided comments. Most comments were specific to the PHA program and its services, but some ($n = 29$) addressed education and early detection of substance use and mental illness. Participants expressed frustration at the difficulties of regaining employment after enrolling in the PHA program and suggested that major hospitals receive more education about the PHA program and its participants to increase understanding, support, and willingness to rehire. Respondents also cited the need to educate nurses about workplace stressors and other factors that may contribute to substance abuse among nurses, as well as the consequences if they are found to be using substances. Finally, participants recommended increased awareness for nursing students, nurses, and employers about substance use, mental illness, and how PHA programs can assist with rehabilitation.

DISCUSSION

Although some studies have assessed the prevalence of substance use and mental illness among nurses on a broad, population level, nurses' substance use characteristics, barriers to seeking assistance, and strategies to overcome barriers have rarely been addressed in the research literature. The findings from our analysis of survey data collected from current and past participants of a PHA program help illuminate the nature of nurses' substance use in the workplace, and the associated consequences for themselves and their patients. Most respondents indicated that they were referred to the program because of alcohol and/or drug use, mental illness, or co-occurring conditions, and nearly half reported using drugs or alcohol while at work. Two fifths of respondents felt that their job performance was affected somewhat or a lot by their substance use, and over one fourth said that patients were put at risk 1 or more times because of their use.

Several findings are of particular importance to informing improved practices for prevention, early detection, or intervention with licensed nurses. First, just over one third of participants in our study thought that a colleague or employer could have recognized their problem(s) earlier. Although nurse-peers may be the primary identification source for substance-related behaviors or impaired nurse practice,[30] nurses may be uncertain about their abilities to recognize impaired nursing practice in others.[7(p8)] Thus, education and awareness programs could improve abilities of workplace peers to recognize cues such as changes in nurses' physical or emotional condition; the use of pain medications documented in patients' charts; and repeated absenteeism and/or excessive tardiness.

Respondents' perceptions of the barriers to seeking assistance also inform possible approaches for facilitating earlier entry into treatment. The most highly rated barriers included fear and embarrassment, as well as concerns about confidentiality and losing one's license. To overcome those barriers, respondents recommended educating nurses about how to seek support from friends, colleagues, and spouses/partners, as well as what steps to take to maintain their licenses and seek assistance confidentially. The barriers to seeking assistance identified in this study align with findings from a study conducted among 4187 registered nurses in Alberta, Canada, where most (78%) of the nurses who self-identified as positive for substance dependence in the preceding 12 months did not seek assistance because they were too embarrassed to discuss it with anyone (82%) or did not think anyone could help (53%).[7(p6)]

The response rate was 69%, which is high for a mail survey that included sensitive questions and provides us with confidence that the results are representative of the views of participants in the program. Several limitations should be noted, however. First, the data collected were all self-report and represent the perceptions of respondents. The reports of behaviors are based on participants' memories and willingness to disclose information. Members of the respondent group were currently or had been in treatment for serious substance use or mental illness, which might have threatened their careers or professional lives, and this may have affected their recollections and responses. Second, the response options for the questions related to the early behavioral cues, barriers to seeking assistance, overcoming barriers, and recommendations for preventing substance use or mental illness were generated by the study investigators and should not be considered an exhaustive list. Finally, the sample is composed of participants from a single program in one geographic region; therefore, the results may not be generalizable to other nurse rehabilitation programs or a larger nursing population.

Despite these limitations, this study provides important information about nurses' substance use and mental illness; substance use in the workplace; and how nurses, their colleagues, and their employers can recognize problems so that nurses are provided with earlier treatment. These preliminary data can inform education and awareness efforts in nursing schools and work settings and suggest a need for more research to explore the prevention and early identification of co-occurring disorders in health care settings where nurses work. Additional studies are also necessary to document the characteristics, behaviors, and perspectives of a broader sample of nurses.

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AUTHOR CONTRIBUTIONS

Alexa Cares was responsible for data collection, analysis, interpretation of results, writing, and revision. Elizabeth Pace was responsible for research conception and design, data collection, interpretation of the results, writing, and revision. Jean Denious provided interpretation of the results, writing, and revision. Lori A. Crane was responsible for research conception and design, collection of data, analysis, interpretation of the results, writing, and revision.

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