

NURSE ANESTHETISTS AND SUBSTANCE USE: GATHERING CRITICAL INFORMATION FOR TARGETED INTERVENTIONS

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Presented at the NCSBN
2024 Scientific Symposium: From Data to Policy



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Learning Objectives:

At the end of the presentation, the participant will be able to:

- Describe historical information related to substance use in certified registered nurse anesthetists (CRNAs).
- Recall themes surrounding substance use in CRNAs based on qualitative data.
- List at least five of the American Association of Nurse Anesthesiology (AANA) recommended strategies to minimize drug diversion.
- Identify the associations between the implemented AANA strategies and perceived effectiveness of the strategies.
- Consider novel findings and conclusions from merged data.

Special Acknowledgements

Study Team/Coauthors:

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- Study sponsored by the National Council of State Boards of Nursing: Center for Regulatory Excellence (Project #R2011007)
 - **Publication:** Nurse Anesthetists: Current Perceptions and Practices Related to Substance Use. (2022). *Journal of Nursing Regulation*.

Background

CRNAs and Substance Use

- 61,000 CRNAs and RN anesthesia residents in clinical settings (AANA, 2022).
- Practice in wide range of healthcare settings, including operating rooms, offices for dentists, podiatrists, ophthalmologists, plastic surgeons, and pain management specialists.
- Trinkoff et al. (2022):
 - Nurses overall: 11.4% for SU problems; and **6.6% SUD**
 - APRNs: 15.2% SU problem and **4.0% SUD**
 - OR/PACU/Outpatient surgery/Anesthesia: 7.9% SU problems; **7.1% SUD**

Background

CRNAs and Substance Use

- CRNAs: Risk for SUDs:

Moderate risk: 23.56% for Alcohol; 10.27% Tobacco; and 6.28% for Cannabis (Foli et al., 2023).

Selection of substances used may be shifting from OR diverted substances found in Bell et al. (1999) and Wright et al. (2012).

- American Association of Nurse Anesthesiology (AANA):

Multiple resources for CRNAs who struggle with SUDs.

Peer Assistance program

Guidance on Fitness for Duty and Reporting Peers

Research Questions

Current Study

- What are the vulnerabilities of CRNAs to initiation of SU, recurrence, and overall perceptions related to SU?
- Are current AANA recommended strategies to avoid diversion being implemented in the organization, and how does implementation compare with perceived effectiveness?
- In merging the two types of data, what new insights surrounding CRNA SU can be gained?

Procedure

Methods

- AANA Research Services used to deploy online survey via Qualtrics
- \$50 incentive offered
- 3,000 AANA members sent survey in February 2021
- 280 responses; 195-225 surveys with 75% of items completed

Procedure

Sample

- The majority were female (61.3%)
- Caucasian (84.4%)
- Married (72.4%)
- Resided in urban areas (99.5%)
- Masters prepared (77.4%)
- Worked less than 10 years (41%);
11 to 20 years (31.4%)

Qualitative Findings

Qualitative Data

Open-Ended items

- What adds to the vulnerability of using substances?
- What was happening at the time of first substance use?
- What triggered recurrence of SU?
- Additional comments related to substance or alcohol use or impairment.

Themes: SU Initiation, Recurrence, and Recovery

Question 1: What is happening in one's current work environment and/or personal life that adds to the vulnerability of using substances?¹

Events and context aggravate SU in CRNAs: Personal vulnerabilities are magnified with unique environment and role.

1A. Personal risk factors and symptoms of SU

1B. System issues and workplace environment conducive to SU and diversion

The pandemic creates more vulnerabilities to feel stress and use substances.

Narrative Data

Question 1 (39 responses analyzed)

System issues and workplace environment conducive to SU and diversion

Near complete lack of vigilance over controlled substances has led to the destruction of several colleagues. Action from administration is retrospective at best and universally involves termination. Rather than treating the dispensing of controlled substances as an occupational hazard with prudent safeguards and monitoring, the entire burden is placed on the individual. When an individual diverts, they are then treated as a criminal.

Themes: SU Initiation, Recurrence, and Recovery

Question 2: What was happening at the time when one first began using substances?²

Initiation of SU: Coping with personal and professional stressors 2A. Initial relief, then dependence

Question 3: What was happening that triggered a recurrence in SU?³

Tried to stop, but...: Failure to remain abstinent 3A. Going it alone

Narrative Data

Question 2: (35 responses analyzed)

Initiation of SU: Coping with personal and professional stressors

New grad from anesthesia school, recently married, bought a new home and a controlling mother. Started a full time job at the hospital he trained at and was scheduled to take night call, at a level one trauma center, 2 months on the job, alone.

...When I used fentanyl for the first time I felt a bit of normalcy and relief of lifelong mental pain...

Narrative Data

Question 3: (21 responses analyzed)

Tried to stop, but.... Failure to remain abstinent

I stopped using opioids on my own, but never recognized that I had an addiction. I substituted the opioids for THC capsules to help me sleep at night. I white knuckled it for 3-4 weeks, but went back to the opioids and kept using THC at night. I was afraid to seek any sort of help because, I was afraid of losing my license and my only source of income.

Themes: SU Initiation, Recurrence, and Recovery

Question 4: Additional comments related to substance or alcohol use or impairment. ⁴

Penalties for seeking help

4A. Regulatory, organizational, and peer punishments

Vulnerabilities of being a CRNA

4B. Access to drugs, stress, work conditions make return to use likely

4C. Outcomes of SU

Red flags and identifying those with SUDs

4D. Overt and covert symptoms

Drugs of choice: Alcohol, diversion of anesthesia suite substances, and cannabis

Narrative Data

Question 4: (41 responses analyzed) Penalties for seeking help

I've known people that want help, but are afraid to obtain help because then it must be reported to all boards/ associations/ certification/ credentialling. Getting help cannot be anonymous, unlike other non-healthcare professions. Essentially, all licensed healthcare workers are "labeled" and/or denied employment if they want help;/know that they need help.

Qualitative Summary

CRNAs vulnerable to initiation, recurrence, and ongoing SU.

- Susceptibility to SUD compounded by work environment, weak leadership, and system-level breakdowns as well as personal stressors.
- Triggers to recurrence are similar to those that contribute to SU initiation: personal and professional stress with an inability to cope.
- Self-initiated efforts to abstain are ineffective.
- Perceived regulatory, organizational, and peer barriers to reporting and seeking treatment dominated responses.

Quantitative Findings

AANA Considerations for Drug Diversion Preventions

AANA Considerations for Drug Diversion Prevention Strategies: Organizational Implementation and Effectiveness

Variable	<i>n</i>	Implemented ¹ <i>M (SD)</i>	Effective ² <i>M (SD)</i>	<i>p</i> value
1. Institute random drug testing	198	1.32 (1.19)	3.15 (1.82)	<0.001
2. Install automated drug dispensers	198	2.76 (1.51)	3.32 (1.62)	0.001
3. Return all unused medication to a centralized location	197	2.65 (1.44)	3.42 (1.60)	<0.001
4. Secure return bins	198	2.35 (1.54)	3.45 (1.74)	<0.001
5. Audit anesthesia records	198	2.43 (1.73)	3.70 (1.35)	<0.001
6. Witness disposal of excess waste from medications	197	2.86 (1.48)	3.32 (1.61)	0.007
7. Collaborate with other departments to create reconciliation systems	195	2.67 (1.62)	3.51 (1.50)	<0.001
8. Investigate medication discrepancies	198	3.20 (1.34)	3.82 (1.29)	<0.001
9. Withdraw substances for only one patient at a time and administer immediately	197	3.00 (1.25)	3.40 (1.62)	0.012
10. Implement policies and procedures for investigations and management of confirmed diversions	197	2.52 (1.72)	3.68 (1.34)	<0.001
11. Create safe environment for prompt reporting to discourage drug diversion	197	2.33 (1.73)	3.87 (1.34)	<0.001

Merged Findings

Merged Findings

Regulatory and Organizational Implications

- CRNAs desire change on many levels: internal (implementing strategies to discourage diversion; improved working conditions) and external (reporting to regulatory/licensing bodies, hospital/clinic credentials, and insurance panels).
- Internal organizational environments include professional stress, workload, negative behaviors in the workplace, and exposure to substances that ease such stressors.
- External to the organization, barriers to reporting SUD are formidable. The last AANA strategy, “Create a safe environment for prompt reporting to discourage drug diversion,” was the highest rated item for effectiveness.
- The stark contrast between the respondents’ ratings of AANA strategy implementation and effectiveness provides evidence that organizational changes to discourage SU diversion would be supported by CRNAs.

Limitations

- Self-reported data surrounding a sensitive topic.
- Low response rate likely due to data collection during the COVID-19 pandemic.
- CRNAs were impacted by patient needs during pandemic with both increased and decreased activities.

Conclusions

- Qualitative findings provide evidence for personal, professional, and environmental stressors facing CRNAs.
- Significant differences were noted between implemented strategies to minimize drug diversion and perceived effectiveness of the same strategies.
- Merged qualitative and quantitative data reflect that CRNAs believe significant barriers exist that prohibit reporting of substance use.
- Employer emphasis on alternative-to-discipline programs to promote a safe environment for reporting substance use and an examination of a reduction in penalties for reporting SU are called for.

THANK YOU

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References

- American Association of Nurse Anesthesiology. (August 2022). What to know about becoming a CRNA. [us/about-crnas/become-a-crna/#:~:text=More%20than%20%2C400%20student%20registered,pactice%20settings%20of%20every%20type](https://www.aana.com/about-crnas/become-a-crna/#:~:text=More%20than%20%2C400%20student%20registered,pactice%20settings%20of%20every%20type).
- Bell, D. M., McDonough, J. P., Ellison, J. S., & Fitzhugh, E. C. (1999). Controlled drug misuse by certified registered nurse anesthetists. *AANA Journal*, *67*(2), 133–140.
- Foli, K. J., Forster, A., Bostic, L. A., Zhang, Z., Zhang, L., & Stone, L. (In Press). Predictors of substance use risk in nurse anesthetists. *Journal of Addictions Nursing*.
- Foli, K. J., Forster, A., Bostic, L. A., Zhang, Z., Zhang, L., & Stone, L. (2022). Nurse anesthetists: Current perceptions and practices related to substance use. *Journal of Nursing Regulation*, *12*(4), 23-34. [https://doi.org/10.1016/S2155-8256\(22\)00008-4](https://doi.org/10.1016/S2155-8256(22)00008-4)
- Trinkoff, A. M., Selby, V. L., Han, K., Back, H., Steele, J., Edwin, H. S., Yoon, J. M., & Storr, C. L. (2022). The prevalence of substance use and substance use problems in registered nurses: Estimates from the Nurse Worklife and Wellness Study. *Journal of Nursing Regulation*, *12*(4), 35-46.
- Wright, E. L., McGuinness, T., Moneyham, L. D., Schumacher, J. E., Zwerling, A., & Stullenbarger, N. E. N. (2012). Opioid abuse among nurse anesthetists and anesthesiologists. *AANA Journal*, *80*(2), 120–128.

Extra Slides

CRNA Sample Characteristics

Sample Demographics (N = 225)			Marital Status (n = 225)		
Variable	n	%			
<i>Gender (n = 225)</i>			<i>Marital Status (n = 225)</i>		
Male	86	38.22%	Married	163	72.44%
Female	138	61.33%	Living as if married	14	6.22%
Other	0	0.0%	Widowed/divorced/separated	24	10.67%
Decline to answer/missing	1	0.44%	Never married	23	10.22%
<i>Residence (n = 201)</i>			<i>Highest Education (n = 221)</i>		
Urban	200	99.5%	Master's degree or MSN	171	77.38%
Rural	1	0.5%	DNP	36	16.29%
<i>Race/Ethnicity (n = 218)</i>			<i>Personal Income (n = 225)</i>		
Caucasian/White	190	84.44%	PhD or DNS	4	1.81%
African American/Black	9	4.0%	Terminal degree outside of nursing	3	1.36%
Native American	0	0.0%	Certificate/diploma nurse anesthesia	5	2.26%
Hispanic American	5	2.22%	Other	2	0.90%
Asian American/Pacific Islander	10	4.44%	<i>Years as Practicing CRNA (n = 207)</i>		
Bi-racial/multi-racial	2	0.89%	<\$25,000	4	1.78%
Other	2	0.89%	\$25,000-\$49,999	2	0.89%
<i>Hispanic/Latino (n = 225)</i>			\$50,000-\$74,999	5	2.22%
Yes	13	5.78%	\$75,000-\$99,999	5	2.22%
No/decline to answer	212	94.22%	Decline to answer	209	92.89%
			<i>Years as Practicing CRNA (n = 207)</i>		
			≤10	85	41.06%
			11-20	65	31.40%
			21-30	36	17.39%
			31-40	19	9.18%
			41-50	2	0.97%

Themes: SU Initiation, Recurrence, and Recovery

Themes and Subthemes: SU Initiation, Recurrence, and Recovery	
Theme	Subtheme
<i>Question 1: What is happening in one's current work environment and/or personal life that adds to the vulnerability of using substances?</i> ¹	
Events and context aggravate SU in CRNAs: Personal vulnerabilities are magnified with unique environment and role.	1A. Personal risk factors and symptoms of SU 1B. System issues and workplace environment conducive to SU and diversion
The pandemic creates more vulnerabilities to feel stress and use substances.	
<i>Question 2: What was happening at the time when one first began using substances?</i> ²	
Initiation of SU: Coping with personal and professional stressors	2A. Initial relief, then dependence
<i>Question 3: What was happening that triggered a recurrence in SU?</i> ³	
Tried to stop, but..: Failure to remain abstinent	3A. Going it alone
<i>Question 4: Additional comments related to substance or alcohol use or impairment.</i> ⁴	
Penalties for seeking help	4A. Regulatory, organizational, and peer punishments
Vulnerabilities of being a CRNA	4B. Access to drugs, stress, work conditions make return to use likely 4C. Outcomes of SU
Red flags and identifying those with SUDs	4D. Overt and covert symptoms
Drugs of choice: Alcohol, diversion of anesthesia suite substances, and cannabis	