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Esther S. Kim

Marna R. Greenberg DO, MPH, FACEP

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A Comparison of Substance Use Intervention Completed by Medical Students and Residents

Esther Kim, MS4

Mentor: Marna Greenberg, DO, MPH

Lehigh Valley Health Network, Allentown, Pennsylvania

- The emergency department [ED] often serves as a huge resource for substance use healthcare and intervention[1].
- However, a common barrier for physicians providing adequate substance use intervention is competing work priorities[3].
- SBIRT conducted by both physicians and non-physician providers such as nurses have been shown to be equally effective in reducing alcohol consumption[4].
- Medical student substance use intervention workshops are also shown to effectively prepare students with the knowledge and skills for providing intervention[5].
- However, there are currently no studies demonstrating the efficacy of medical students delivering intervention to real patients.
- In this study, we compared the results of substance use intervention delivered by medical students and residents to the ED substance use population at LVHN hospitals utilizing Yale's Project ASSERT program.

Problem Statement

This project evaluated whether...

- 1) Medical student intervention was beneficial in reducing substance use
- 2) Patient participation in an intervention program for substance use in the ED setting differed when administered by medical students vs residents.

- To conduct this study, an intervention and survey modeled after Yale's Project ASSERT program[6] was implemented at LVHN's Cedar Crest and Muhlenberg ED locations.
- Eligibility requirements for the study included a positive screen for substance use who is
 - 1) over the age of 18,
 - 2) has capacity for decision-making, and
 - 3) gives verbal consent to participate in the study. Substances studied include tobacco, alcohol, marijuana, benzodiazepines, cocaine, and methamphetamine.
- ED patients were screened by looking through patient charts via the electronic medical record for patients arriving at assigned pods.
- Motivational interviewing techniques were used to guide intervention by way of substance use discussions to encourage reduction and/or quitting substance use.
- Patients were provided educational and local resource pamphlets about relevant substances by either medical students or residents.
- Data analysis and outcomes were completed by a team of medical students, residents and research assistants.
- The results are reported as frequencies and percentages.
- This project was reviewed by the IRB and determined to be consistent with quality improvement, not research.

Substance Use Intervention Results by Percentage

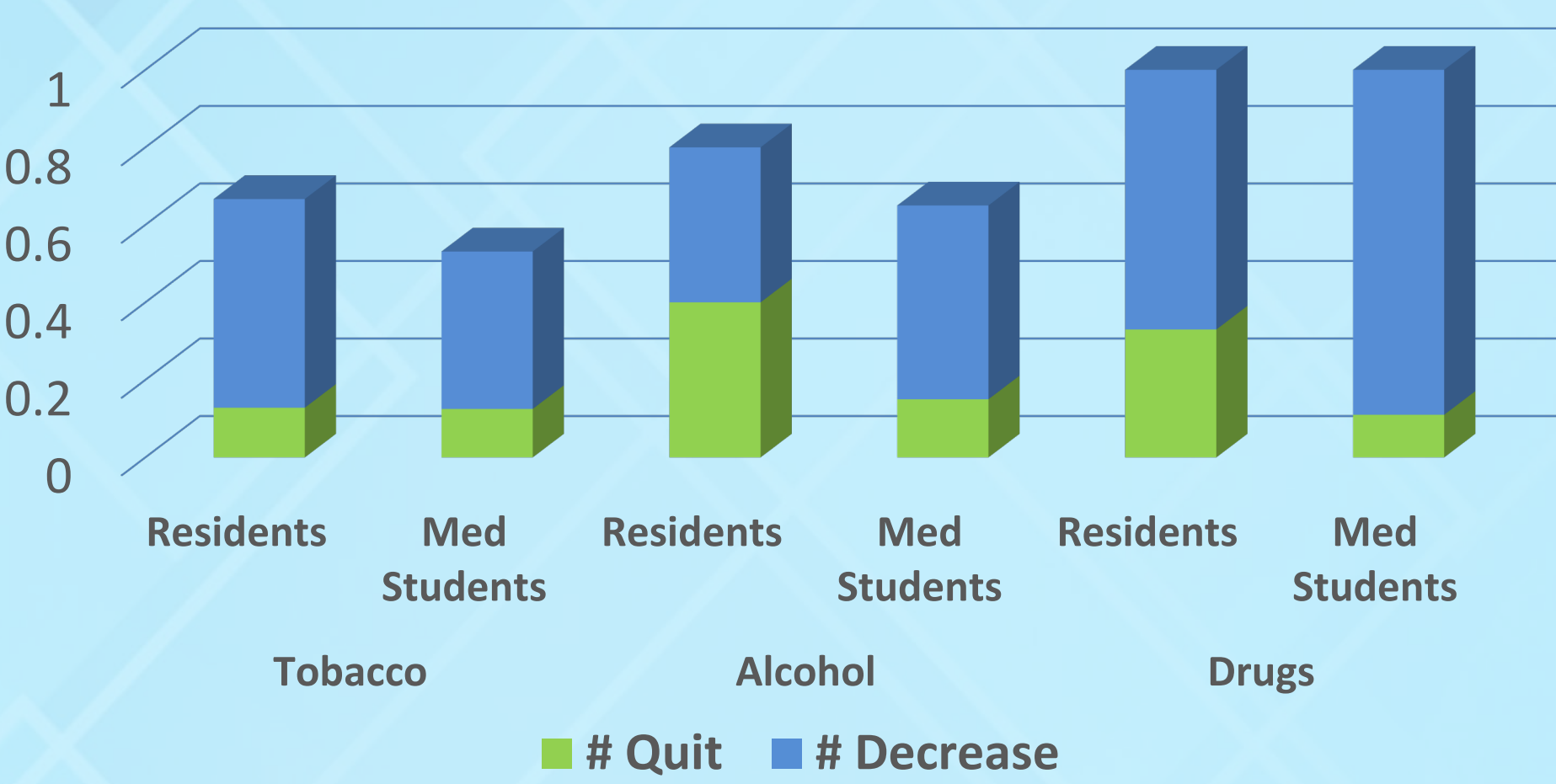


Figure 1. Substance Use Intervention result percentages by residents vs medical students per substance. Note that #Decrease for drugs reflects no drug use in the 30 days preceding follow-up interview.

	Tobacco				Alcohol			
	Res	R%	MS	MS%	Res	R%	MS	MS%
# Quit	5	0.13	8	0.13	6	0.4	3	0.15
# Decrease	21	0.54	26	0.41	6	0.4	10	0.5
# No Change	10	0.26	27	0.42	2	0.13	3	0.15
# Missing	3	0.08	3	0.05	1	0.07	4	0.2
Total	39		64		15		20	

Table 1. Tobacco and Alcohol Use Intervention result numbers and percentages comparing interventions performed by residents vs medical students. Res = Resident result number, R% = Resident result percentage, MS = Medical Student result number, MS% = Medical Student result percentage.

	Drugs			
	Res	R%	MS	MS%
# No F/U 30d Use	4	0.67	8	0.89
#Quit	3	0.33	1	0.11
# No Quit	2	0.33	3	0.33
#Missing	1	0.17	5	0.56
Total	6		9	

Table 2. Drug Use Intervention result numbers and percentages comparing interventions performed by residents vs medical students. Res = Resident result number, R% = Resident result percentage, MS = Medical Student result number, MS% = Medical Student result percentage.

- Medical students and EM residents administered an intervention with follow-up survey to 153 patients from June 2017 to February 2018 at two hospital sites.
- Overall results show that both intervention groups reduced substance use in this patient population, but there are some small differences in frequencies of substance use reduction between the two groups.
- Most notably, Table 1 and Figure 1 show:
 - the Resident intervention (RI) group had higher percentages of alcohol and drug cessation than those of the medical student intervention (MSI) group
 - the MSI group had higher reduction in alcohol and 30-day drug use compared to those of the RI group.

- Currently many ED physicians (and residents) cite competing priorities as a barrier to providing consistent substance use counseling and intervention.
- In contrast, medical students do not have as many competing priorities, are highly motivated, and recently trained in disease management.
- But medical students are often underutilized in clinical settings.
- The data from this study demonstrates that medical student intervention does reduce substance use over time.
- Further studies with greater sample sizes that control for various confounding factors are needed to more accurately determine whether medical student intervention is as effective as resident intervention for substance use.
- This project reflects the SELECT domain of Health Systems by aiming to understand the local substance use prevalence and testing an intervention method that could increase the frequency and resources for intervention in the ED setting at LVHN.
- A systemic evaluation of frequencies and patterns can help healthcare teams more effectively target areas for improvement.

- Medical student administration of substance use intervention is beneficial for reducing the rate of substance use and increasing rates of substance use cessation.
- However, it is difficult to determine the significance of the similarity or difference between the medical student and resident groups because statistical analysis was not included as a part of this study.
- Hence, future studies that control for numerous variables are needed to ascertain whether there is a significant difference between medical students and residents.
- In conclusion, medical students should more frequently be utilized as medical educators for patients considering the recency of their education and training, their eager desire to contribute to patient care, and the low risk of harm to either patient or educator.

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