

Educational Frontiers in Delirium Liberation: A Qualitative Assessment of Trainee Experiences with Proactive Psychiatric Consultation in a Novel Critical Care Psychiatry Rotation

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Background

Delirium is a complex neuropsychiatric syndrome that impacts approximately 1/3 of ICU patients and increases ICU length of stay and hospital mortality.¹ Given delirium's prevalence across clinical settings, it is beneficial for trainees, regardless of their clinical specialty, to learn to assess and manage patients with delirium. Medical students have benefited from traditional consult-liaison (C-L) rotations by learning to manage psychiatric disorders in medically ill patients.² Using objective screening criteria for delirium and agitation, including the CAM-ICU and RASS, a proactive consultation model has been implemented in the Medical Respiratory Intensive Care Unit at VCU Medical Center. Proactive models of psychiatric consultation are associated with improved clinical and staff satisfaction outcomes for patients in the general medicine and medical intensive care setting.^{3,4} Medical student and resident trainees have the opportunity to gain exposure to this model of care through a critical care psychiatry elective or shadowing opportunity on the proactive ICU psychiatry consult service.

Objective

- Evaluate survey responses of medical student and resident trainees at VCU who participated in the critical care psychiatry elective vs those who did not.
- To compare the confidence of these trainees in assessing and managing delirium to trainees who have not participated in the elective.

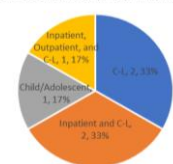
Methods

An online survey was distributed to VCU third- and fourth-year medical students and PGY-2, 3, and 4 psychiatry residents. This survey included 23 different statements and utilized a 5-point Likert scale to evaluate trainee perspectives on this elective experience, the field of proactive psychiatric consultation, and management of delirium. Survey data was collected and managed using Research Electronic Data Capture (REDCap).

The medical student cohort was further divided into those who were exposed to the critical care psychiatry experience and those who were not. The resident data was aggregated due to a small sample size collected. Out of the 23 statements, 9 statements regarding comfort with delirium management and psychiatric consultations were chosen to be aggregated in order to understand each respondent's overall level of comfort with these knowledge areas. The 5-point Likert scale were made numeric such that 0=Strongly Disagree, 1=Disagree, 2=Neither Agree nor Disagree, 3=Agree, 4=Strongly Agree. The responses to the 9 questions were summed for each respondent to obtain a "Comfort score" that potentially ranges from 0 to 36. This cumulative score indicated how comfortable respondents were in assessing and managing delirium as well as with the proactive model of psychiatric consultation. One respondent from the medical student control group was excluded as an outlier. The differences in comfort scores between the responses from trainees that did or did not participate in the elective was determined using a two-sample-t-test assuming equal variance for the two groups. Normality of the data was assessed using a QQ plot of the residuals and equality of group variances was assessed using the Brown-Forsythe test. All analyses were performed using R version 4.0.2 and assuming an $\alpha = 0.05$ significance level.

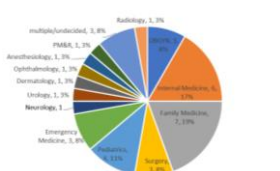
Resident Data

Resident Group- Subspecialty Interests (PGY-2, 3, 4) What clinical subspecialties are you considering pursuing after you finish residency? (N= 6)

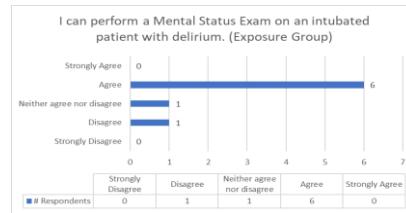
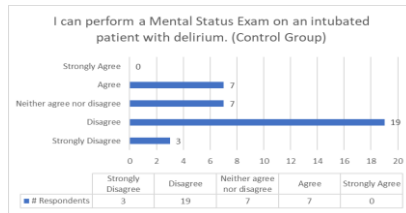
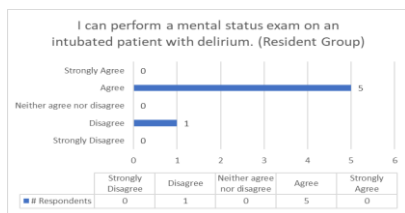
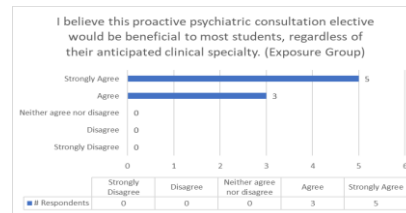
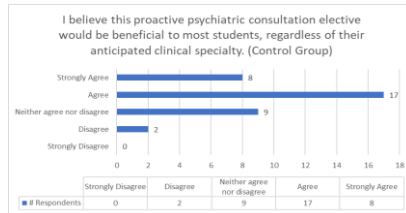
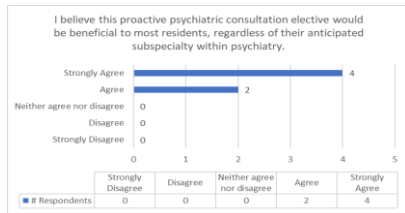
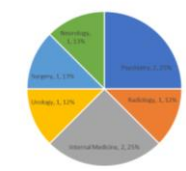


Medical Student Data

Control Group- Specialty Interests (M3s) What clinical specialty do you plan on applying to? (M4s) What specialty did you apply to? (N= 36)

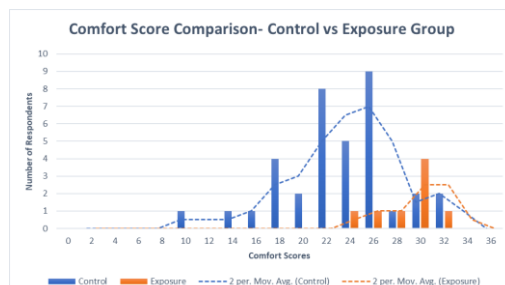


Exposure Group- Specialty Interests (M3s) What clinical specialty do you plan on applying to? (M4s) What specialty did you apply to? (N= 8)

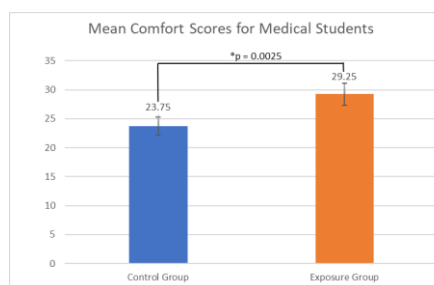


Comfort Score Comparison Between Control and Exposure Group For Medical Students

Comfort Score Questions:
 9- I am confident I can assess patients with delirium in the intensive care setting.
 10- I can perform a mental status exam on an intubated patient with delirium.
 11- I can distinguish between dementia and delirium.
 12- I am comfortable working with delirious patients.
 13- I am confident I can propose appropriate management for delirium and agitation in the intensive care setting.
 14- I learned that recognition of delirium is important in specialties outside of psychiatry.
 16- I am comfortable caring for patients with co-occurring medical and psychiatric conditions.
 17- I learned when and how to effectively seek psychiatric consultation.
 18- I believe a proactive model of psychiatric consultation (i.e. the psychiatrist is consulted because of a clinical trigger, rather than at the request of the primary team) could be beneficial to delirious patients and their care teams by providing early identification and treatment of delirium.



The mean for the Medical Student Exposure Group is 29.25 (95% CI: 27.37, 31.13; Min = 25, Max = 32) and the mean for the Medical Student Control Group is 23.75 (95% CI: 22.17, 25.33; Min = 11, Max = 33) for a difference of 5.50 (95% CI: 2.05, 8.95) ($p = 0.0025$).



Discussion

- Respondent demographics varied widely among both residents and medical students in terms of subspecialty and specialty interests, respectively.
- Analysis of survey results demonstrated a statistically significant difference in comfort scores between medical students who did and did not have exposure to the critical care psychiatry elective, with the exposure group seemingly more comfortable with assessing and managing delirium compared to the control group.
- Notably, a majority of medical students from the exposure group agreed that they can perform a mental status exam on an intubated patient with delirium, a similar result to the resident group, while a majority of medical students from the control group disagreed. Thus, there was an observational difference in medical students' comfort in regards to this statement.
- Additionally, the majority of participants responded favorably regarding the educational benefit of the critical care psychiatry elective, regardless of anticipated clinical specialty.
- Majority of respondents in both medical student and resident groups agreed that a proactive model of psychiatric consultation could be beneficial in terms of patient care.
- Given the data was obtained via an online survey that included a 5-point Likert scale, the data is vulnerable to central tendency bias, secondary to trainees avoiding extreme response categories. Another limitation of this study stems from acquiescence bias through respondents' agreement with the survey statements as presented. Social desirability bias also likely shaped results, given possible attempts by respondents to portray themselves or VCU in a favorable manner.

Conclusions

- As similarly shown in other studies, this study showed that proactive psychiatric consultation was perceived to be beneficial in terms of patient care for delirium in the hospital.
- Our survey results highlight the perceived educational benefits of this specialized consultation elective due to its applicability across a wide diversity of specialties, given the broad presence of delirium.
- Therefore, it may be beneficial for medical students to participate in a C-L rotation or specialized consultation elective in order to gain early exposure to the management of co-morbid neuropsychiatric conditions, such as delirium.
- Given these results, medical schools across the country can take into consideration including a consult-liaison rotation as a standardized element of their psychiatry curriculum since it is not always provided as a component of undergraduate medical education.
- Similarly, proactive psychiatric consultation services should increasingly become available for student and resident involvement as the model continues to grow and expand.

Acknowledgements

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References

- Dalaney A, Hammond N, Litton E. Preventing Delirium in the Intensive Care Unit. *JAMA*. 2018;319(7):659-660.
- Meyer F, Abbasi O, Kasick D, et al. Medical Student Experiences on Consultation-Liaison Psychiatry Rotations: A Nationwide Survey. *Psychosomatics*. 2018;59(1):75-80.
- Triplett P, Carroll CP, Gerstenblith TA, Bienvenu OJ. An evaluation of proactive psychiatric consults on general medical units. *Gen Hosp Psychiatry*. 2019;60:57-64.
- Bui M, Thom RP, Hurwitz S, et al. Hospital Length of Stay With a Proactive Psychiatric Consultation Model in the Medical Intensive Care Unit: A Prospective Cohort Analysis. *Psychosomatics*. 2019;60(3):263-270.
- Harris PA, Taylor R, Thielke R, Payne J, Gonzalez N, Conde JG. Research electronic data capture (redcap)—a metadata-driven methodology and workflow process for providing translational research informatics support. *Journal of Biomedical Informatics*. 2009;42(2):377-381.
- Harris PA, Taylor R, Minor BL, et al. The redcap consortium: Building an international community of software platform partners. *Journal of Biomedical Informatics*. 2019;95:103208. doi:10.1016/j.jbi.2019.103208.
- R Core Team (2020). R: A language and environment for statistical computing. R Foundation for Statistical Computing, Vienna, Austria. URL: <https://www.R-project.org/>