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Depersonalization In The Emergency Department

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Depersonalization in the Emergency Department

A Thesis Submitted to the

Yale University School of Medicine

in Partial Fulfillment of the Requirements for the

Degree of Doctor of Medicine

By

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DEPERSONALIZATION IN THE EMERGENCY DEPARTMENT. Damian Apollo, Karen Jubanyik.

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Abstract

Yale medical students have given feedback about the emergency medicine rotations via the end of clerkship feedback and the annual student mistreatment questionnaires collected by the medical school and stated that they felt distress and that patient depersonalization occurred during resuscitations. Accordingly, the objectives of this study were to assess medical students' perspectives with regards to resuscitation exposure, depersonalization, utilization of support services, and support services that students thought would be helpful as well as the timeframe in which these interventions should occur. We hypothesized that many students are exposed to resuscitations, awareness of support services is high while utilization is low, and that students value a post-resuscitation intervention proximate to the event. Our study revealed that 54.76% (n = 215) of medical students are exposed to a code during their training with 43.43% exposed to 5 or more codes during their training. The majority of code exposures occurred in emergency medicine (50.60%), internal medicine (27.11%), and surgery (7.83%). Of those students involved in codes, 57.55% were directly involved in the resuscitation. Of the students involved in emergency resuscitations, 74.00% felt depersonalization occurred with 59.18% seeing it as necessary/natural and 40.82% seeing it as problematic/something that warrants intervention. It was determined that 92.39% of respondents have not used support services. Awareness of resources available was low, with only 20.18% of respondents aware that meeting with the Dean of Student affairs (the category with the greatest awareness) was a possible support service and some students not being aware of any resources. Many students (43.09%) felt that the department of emergency medicine did not offer adequate support services, with 56.82% of respondents believing that additional resources are needed for students exposed to emergency resuscitations. Students preferred an intervention proximate to the event with 29.25% favoring an intervention immediately after the event, 30.61% within 1 day, and 29.25% within 1 week. A preference was placed on an intervention that involved a trained debriefer, a peer/clinical individual, and an individual who does not grade the student. These results suggest that depersonalization during resuscitations is experienced by medical students and that a significant amount of students believe that an intervention could be helpful if implemented as part of the emergency medicine curriculum.

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Introduction

Yale Medical Student Feedback on the Emergency Medicine Clerkship

Yale medical students have given written feedback after the emergency medicine clerkship that they feel that patients who undergo an emergency resuscitation (also known as a code) are depersonalized (defined in the survey as a loss of the patient's individual traits that makes them a unique person such as seeing the patient as an object to be resuscitated versus as a parent, family member, peer etc.). Review of semi-annual student mistreatment documentation also revealed occasional reports of ongoing student distress after code situations. Many students felt depersonalization occurred as revealed below:

"A man died. He was brought into the emergency department from the green, getting CPR for more than half an hour. EMTs brought him in, still covered in a good bit of dirt and leaves, his many layers of clothing splayed open. As he was moved from the EMS stretcher to the ED stretcher, most of the staff who had gathered in the resuscitation room wandered out of the room. They asked me if I wanted to do some chest compressions, which I did for a minute or two minutes. Then I heard them call Time of Death 4:35pm and everyone just went on to their next patient or task. This was the first person I had ever touched who then died. Although I did not feel responsible for his death, I just generally felt lost. But I did not want anyone to see me crying, especially since everyone else seemed to be fine. Someone at the admin level checked in with me a couple of days later, but I really needed some help that day and I did not know what to do or where to go in the moment."

Students also demonstrated concern with team dynamics and began to insinuate that they would desire some sort of intervention or post-resuscitation debriefing, in particular, early in their training. These sentiments were demonstrated in one of the more vivid pieces of feedback below:

"The ER staff needs to take time with students to explore their feelings after a death. I witnessed a very young woman patient who presented in cardiac arrest. Though it was clear that she was unlikely to survive, every last effort was made in the emergency department before she was declared dead. The room she was in was in shambles at the end. I noticed the cleaning crew come in to mop up blood and even they looked upset. The patient was my age, just a couple months younger than me. It was unbelievably sad. I took a moment by myself, and then rejoined the team about 20 minutes later. No one asked where I had been. That day, no one asked how I was doing. This was my first clinical rotation."

Finally, many students demonstrated concerns with attitudes towards emergency resuscitations and the perceived routineness of death further demonstrating another facet of resuscitations that should be discussed with the students as revealed in this piece of feedback:

"I thought the team was callous towards death and dying patients in general. We had a couple deaths and it was so routine."

Overall, common themes extracted from these responses were concern related to depersonalization, team-dynamics, and coping with student distress.

This prompted the need to assess the extent of the problem and to develop feasible, cost-effective, and useful interventions. It is natural for medical students to feel that their clerkship experiences in the, "hidden curriculum," are contradictory to what was learned in their preclinical years. Medical students spend their first several years of medical school working on communication skills, interviewing, and building rapport with a patient. They are taught that one of the most important relationships is the doctor-patient relationship that is built over time, and that it not only aids in diagnosis but is a therapeutic instrument as well [1]. Medical students are introduced early to the biopsychosocial model which looks at the patient's biology, physiology, psychology, social circumstances, and environment as important influencers of health. The biopsychosocial model is perpetually emphasized, and students attend countless skills sessions with faculty who teach students communication skills, empathy, and altruism. The fundamentals of the courses on patient interviewing and performing the physical exam are to make them centered on patient comfort and understanding the patient on a fundamental level while building a lifelong relationship. Early in their training, medical students at Yale are not typically exposed to situations that deviate from this model of care such as resuscitations or trauma in the emergency department. Students are even cautioned against losing this more humanistic approach to medicine which may come with years of practice and exposure to clinical situations that can desensitize the student to the needs of the patient beyond their mere medical condition and presentation [2-4]. In

many ways, this model of patient care is antithetical to the practice of medicine in an emergency resuscitation and contradicts this model of training perhaps explaining the negative response students are having toward it.

The Hidden Curriculum

The concept of what is termed, "the hidden curriculum," is thought to exist in medical schools. The hidden curriculum is thought to represent an, "unintended consequence," of education where students learn certain values via the education that is not openly intended [5-7]. These values could represent the transmission of norms, values, and beliefs conveyed in the hospital, on rotations, and in the informal social environment (such as rounds, the reading room, and the charting room) where what is exhibited may not be what is intended to be demonstrated to students in the medical curriculum [6]. It is thought that this curriculum is influenced by spheres such as institutional policies, evaluation activities, resource-allocation decisions, and institutional, "slang," thus making assessment and understanding of the hidden curriculum complex and vary from institution to institution [6].

It is thought that the true emergence of the hidden curriculum occurs in the third/clinical year of medical school where individuals encounter patients, physicians, and residents who may display behaviors and values that contradict what the students have been taught which can include both positive role models and effective teachers, with professional behavior as well as a, "hierarchical and competitive atmosphere in the medical school, in which haphazard instruction and teaching by humiliation occur," [7]. Narrative responses from medical students have demonstrated distinct themes describing the hidden curriculum including the following from Gaufberg et al:

1. Medicine as a culture (with distinct subcultures, rules, vocabulary, and customs)

2. The importance of haphazard interactions to learning

3. Role modeling

4. The tension between real medicine and prior idealized notions.

Other themes in the hidden curriculum include power–hierarchy issues in training and patient care, dehumanization/depersonalization, "hidden assessment" of student performance, suppression of normal emotional responses, and struggling with the limits of medicine [5]. In particular, the, "tension between real medicine and prior idealized notions," may be prominent during an emergency resuscitation where aggressive interventions are performed on an individual without a history of rapport with the patient with death as a common outcome [5].

The unanticipated aspects of the hidden curriculum could prove challenging for medical students, in particular, when it directly contradicts what the students were taught as proper patient care. Emergency resuscitations are an example where the communication skills, patient-centered interview, and rapport built with a patient are bypassed or expedited to perform life-saving measures. The therapeutic doctor-patient relationship is not the priority in this situation which is in stark contrast to what is taught to medical students in terms of what is the most important part of practicing medicine (communication, rapport, and empathy). For this reason, students may find emergency resuscitations to be distressing. In addition, it may be necessary to place in the formal curriculum skills and interventions to deal with aspects of this hidden curriculum.

Defining Depersonalization

5

For the purpose of this study, depersonalization was defined as a loss of the patient's individual traits that makes them a unique person (this was further clarified as seeing the patient as an object to be resuscitated versus as a parent/family member or peer). We defined that > 10% of students experiencing depersonalization as problematic to be a clinically significant number that would support an intervention being implemented in the emergency medicine curriculum.

Depersonalization has several various definitions which follow a common theme. Negative feelings and cynical attitudes toward the recipients of one's service or care is a commonly utilized definition [8]. Interestingly, this definition was almost directly described by one student in their feedback about the emergency medicine clerkship:

"I thought the team was callous towards death and dying patients in general. We had a couple deaths and it was so routine."

Other common definitions include describing depersonalization as merely a detached attitude towards others [9]. Clinically, depersonalization can be defined as an anomalous body experience (which is more related to depersonalization disorder), emotional numbing, anomalous subjective recall, and alienation from one's surroundings which shares several aspects with the definition used to describe the depersonalization experienced by professionals in their work [10].

Depersonalization in Medicine

Depersonalization is an interesting phenomenon as it can be seen in pathological states, as well as healthy individuals in responses to physical stresses such as sleep

deprivation or emotional stress and in some contexts can even be seen as protective [11]. It is interesting that depersonalization can actually be a protective mechanism that may isolate an individual from stressful aspects of their life such as death and suffering which may be encountered regularly in the emergency department, in particular, during emergency resuscitations. It could also be seen as maladaptive and merely a less effective coping mechanism than more effective mechanisms such as trait emotional intelligence (comprehensive operationalization of emotion-related self-perceptions and dispositions) which has been found to be protective when encountering occupational stress [9, 12].

Depersonalization has been seen as an escalating problem in medicine, potentially causing burnout in physicians and poorer outcomes and doctor-patient relationships for patients [13]. Common tools such as the Maslach Burnout Inventory measures burnout as an issue with 3 key components:

(1) Emotional exhaustion (feeling emotionally drained)

(2) Depersonalization (negative feelings and cynical attitudes toward the recipients of one's service or care)

(3) Reduced personal accomplishment (a tendency to evaluate negatively one's own work) that occurs among individuals who work with people in some capacity [8].

It is important to note that a core aspect of this burnout index is the inclusion of depersonalization, thus prompting the need to assess depersonalization in situations when it is likely to occur, such as an emergency resuscitation in a medical student population [8]. Finally, medical students in their clinical training have often noted that in the practice of medicine there is a, "positive power of human connection," which may serve

to combat burnout, but may be absent or reduced in emergency resuscitations further reifying the negative effect that they could have [5].

Defining Burnout

The term, "burnout," has become a very common term that has been used to describe mild stress/disdain from one's work, to depression, to severe stress that impairs functioning [14]. The term initially was used to describe the consequences of severe stress and high ideals in "helping" professions like those in medicine where individuals sacrifice themselves for others and end up feeling symptoms which include exhaustion, listlessness, and an inability to cope [14]. Given the myriad of definitions for burnout, precisely measuring its ubiquity can be a challenge as different sources can define it differently [14]. Similarly, the root cause of burnout is dependent on the individual and can include feeling overworked, under-challenged, being exposed to conflict, and self-neglect [14]. Emergency medicine is a profession that is laden with individuals feeling burnt out, and one of the key contributing factors has been thought to be the depersonalization that occurs in the emergency department which alienates physicians from patients and the rapport that can make their work meaningful [2, 14-19]. High degrees of depersonalization can be seen in residents who suffer from burnout thus making this a problem for physicians at every level of their training [20]. In this modern age of burnout in the medical profession, it thus becomes important to assess the contributing factors and attempt to combat them in order to improve the field and reduce the emotional burden on physicians.

Emergency Resuscitations & Depersonalization

In an emergency resuscitation, much important communication groundwork and rapport-building is not always possible as the most necessary and life-saving measures are quickly implemented to save the patient's life. This may include but is not limited to chest compressions, intubation, trauma surveys, surgical airways, chest tube placement, and other invasive medical procedures that may be done in an acute resuscitation. The initial history is not always performed (at least as in depth as would be ideal when meeting a new patient) and there typically is little social context in which to understand the patient, and in some circumstances, no rapport is built prior to a patient receiving aggressive medical interventions, or little rapport is built as the emergency physician must communicate and build rapport under time-constrained and stressful circumstances.

In emergency medicine, such procedures and resuscitations are completed regularly and can be particularly stressful for a young trainee as they may lack the coping skills and experience to tolerate these challenging situations. Performing invasive medical procedures on a patient with whom there is little or no context to their life circumstances, and with whom little/no rapport has been established creates a situation where the patient could be depersonalized as they could be seen as an object of resuscitation rather than an individual whom we are trying to understand and care for. Some have even attributed this depersonalization to the burnout that exists within the field which can lead to poorer patient outcomes, and poor self-care among emergency medicine physicians [15, 17, 19].

Clearly, depersonalization is a concerning factor in emergency medicine (as well as all of medicine) and one that should be understood and combatted for the health and wellness of patients and physicians or at least better understood so that protective measures and training can be implemented. Common themes in positive psychology

typically suggest that happiness, content-ness, and fulfillment can lead to more efficient, successful, and innovative employees thus it is problematic when such an important decision maker such as the emergency medicine physician begins to experience burnout [21].

Emergency medicine is renowned for burnout among physicians. Among a cohort of Canadian emergency physicians, 46% of emergency medicine physicians experience emotional exhaustion, 93% experience medium to high levels of depersonalization, 79% experience medium to low feelings of personal accomplishment while only 61% are satisfied with their lives, and 75.5% are satisfied with their jobs [16]. These results reveal the high level of depersonalization that in many ways is innate to the profession of emergency medicine and also suggests that if physicians with years of experience and practice find depersonalization to be prevalent in their practice of medicine, it could be even more problematic for young trainees who lack the coping skills and experience to manage stress associated with practicing in the emergency department.

Emergency medicine physicians who reported higher levels of job satisfaction and personal accomplishment were noted to have utilized a balanced number of short-and long-term coping methods when it came to dealing with stress in their career [15]. Similarly, it seems that emergency medicine physicians demonstrate high values for all risk parameters for burnout in the profession of medicine. These factors are strongly correlated with work experience meaning that the longer a physician practices, the worse their symptoms could be [18]. The established coping mechanisms of active coping and behavioral disengagement seem to remain constant in this group demonstrating that they do not necessarily become better at dealing with these stresses the longer they work in the

field [18]. This further reifies the concept that individuals need to establish and practice proper coping mechanisms early in their career so that it becomes a lifelong habit that hopefully mitigates burnout or the creation of improper coping mechanisms such as behavioral disengagement.

Both early exposure to emergency resuscitations and proper interventions to combat depersonalization and burnout are necessary for not only residents and attendings, but also medical students in training. This study sought to look at the degree of depersonalization that occurred from a medical student perspective, and student beliefs surrounding which post-resuscitation interventions would be most helpful and when students think they should be implemented in terms of timeframe.

There are no published studies that have investigated the medical student emotional experience during and after resuscitations and post-resuscitation interventions. Similarly, no studies have addressed medical students' perspectives and opinions about what interventions would be helpful, and the timing of said interventions. However, medical student burnout has been shown to be associated with lower medical student empathy scores and lower professionalism climate scores observed in medical students, residents, and faculty [2].   That being said, despite evidence of a decline in empathy that occurs naturally throughout medical school, empathy may be preserved in medical school by personal and professional development courses [3]. This evidence suggests that interventions can be effective in a medical student population with regards to coping skills and emotional responses. In the setting of perceived depersonalization in the emergency department at Yale, it is thus logical that a standardized intervention thus may

be truly valuable in helping medical students cope with depersonalization in the emergency department.

Stress Reactions, Debriefing, & Critical Incident Debriefing

Debriefing, in particular, was thought to be a useful intervention for students exposed to emergency resuscitations. Group psychological debriefings have been found to alleviate the effects of vicarious psychological distress in emergency care providers [22]. There are a myriad of studies that have demonstrated benefit; however, there is also substantial literature that draws into question the value of debriefing with a, "current expert consensus and meta-analytic review suggest[ing] that CISD is possibly noxious, generic psychological debriefing is probably inert, and that more emphasis should be placed on screening for, and providing, early intervention to those who go on to develop pathological reactions," [23, 24].

Debriefing was considered in this project given its ease of implementation and the possibility that it could be helpful as well as serving as an intervention that can teach proper coping skills going forward thus acting as both a pre-event and post-event intervention. However, this is one possible mechanism where students could derive benefit, and it is likely that other interventions may be necessary such as training prior to events and simulations that prepare medical students for the challenges that they may encounter on their clinical rotations such as emergency resuscitations.

Critical Incident & Educational Debriefing – Gaps in Knowledge

There is vast research that has looked at debriefing as a tool after simulations and emergencies to improve education, as well as debriefing amongst residents, physicians, and nurses [25, 26]. For example, post-event debriefing has been quite helpful for

cardiopulmonary resuscitation quality improvement [27]. Currently, there does not exist any literature that has delved into a medical student population and assessed opinions about emergency resuscitation exposure, depersonalization, and debriefing. Given the evidence that debriefing can improve clinician knowledge and skill acquisition when implemented in a clinical setting, it is possible that similar benefits could be seen in improving medical students' emotional responses to emergency resuscitations [28].

A formal response such as debriefing is important for both small-scale (such as codes), and large-scale (such as disasters) incidents, and health care providers at all levels should participate in programs to understand and cope with stressors and critical incidents [29]. Critical incident stress debriefing has been shown to play a valuable role in preventing post-traumatic stress disorder (PTSD) and it is logical that this sort of debriefing, if extended to a medical student population when they are exposed to events that could be traumatic such as an emergency resuscitation, could be useful even if there is some evidence that contradicts its utility [22, 29].

Some extrapolation must be made between the success and increased satisfaction in medical education which is ubiquitously studied, and how these interventions may extend to debriefing amongst medical students post-code in the emergency department. In one cohort of medical students, a simulation-based curriculum demonstrated improved learning and increased satisfaction with the curriculum [30, 31]. This evidence lends itself to suggesting that interventions could be helpful, but also suggests that perhaps practice/simulation emergency medicine resuscitations with structured debriefings structured around the emotional response in addition to the clinical knowledge could be valuable. However, we discounted this as a valuable intervention at Yale given that the

surgery and emergency medicine clerkships currently practice this with a structured

simulation followed by an emotional debriefing, debriefing of team environment, and

finally discussion of the clinical science and practice of medicine. Though this

intervention could be optimized, it is possible that it may be valuable to add another

intervention that is vastly different and entirely focused on processing emotions, building

coping skills, and understanding what happened with the clinical team in a structured

debriefing setting.

Current Study

To better assess student opinions with regards to emergency resuscitations, an

assessment needed to be performed to understand the magnitude of the problem, student

perspectives, and the interventions that they would find most valuable as well as the

timeframe in which to implement said measures. This would allow for a subsequent

intervention to be performed and assessed further to refine the clerkship and educational

experience for Yale medical students. Currently, no studies have assessed student

perspectives surrounding emergency resuscitations and if they would find any

interventions useful, and when these interventions should occur.

To solve this problem, first an assessment of student experiences and opinions

with regards to emergency resuscitations was completed. Utilizing a fully anonymous

online survey (Qualtrics survey technology), we assessed what students experience when

they are involved in a code, if they experience patient depersonalization, and what

interventions they believe would be helpful to combat any depersonalization they

experience in addition to the timeframes that they feel the intervention would be best

implemented. All medical students (years 1 through 4 and dual-degrees) were polled in

this study. We defined a clinically relevant number of students to be > 10% when deciding how to interpret the data and make recommendations with regards to the stressful nature of codes and depersonalization and student recommendations for interventions. This information will allow the emergency medicine clerkship to understand student perspectives and potentially implement an intervention based on the data collected.

Future Studies & Implementation

With the results of this study, the emergency medicine clerkship can decide if they would like to implement a new intervention. If they decide to, the efficacy of this intervention can then be assessed, and the clerkship can be further refined to deliver a better experience to medical students. We believe students will value debriefing sessions after experiencing a code and will benefit vastly from discussing their experiences with mentors in the field and other students. We also believe that the best time for an intervention will be right after exposure to the emergency resuscitation, rather than days or weeks after an incident.

We expect student awareness of support resources to be rather high (> 50%), based on the ubiquitous contact with medical students both via emails from the Dean of Student Affairs reminding students of available resources, and the pre-clerkship transition meetings which again remind students of these resources. However, we expect the utilization of said services to be low (< 25%) based on the time constraints (clerkship requirements, USMLE preparation, etc.), stigma of seeking services, and fear of repercussions academically if the student were to leave a rotation early to receive said services.

We expect that the didactics and implementation of an intervention may be challenging and will require significant faculty and resident training. Finding emergency medicine faculty and residents who are willing to work with students in the emergency department, as well as protected time for the students (which is perhaps the most important barrier preventing utilization of said services) is paramount to making these resources more accessible and thus more thoroughly utilized. Such an intervention could not only improve the medical student experience, but also could improve future physicians and their patient care as a result. It has been established that both distress and well-being are related to medical student empathy and can enhance professionalism and it seems that interventions that address these issues and reinforce coping skills could be truly valuable [4].

Statement of Purpose

The purpose of this study was to assess medical student perspectives related to emergency resuscitation exposure. First, we sought to assess medical student exposure to emergency resuscitations and quantify how often this occurs on average for medical students on their emergency medicine rotations. Next, we sought to characterize under which circumstances medical students were being exposed to resuscitations by assessing the chief complaint/presenting illness of the code patient, as well as the procedures performed during the resuscitation and the student's role.

Our next objective was to understand if the students felt that the patient was depersonalized and how they felt the patient was depersonalized/other impressions and emotions that they felt. We hoped to discover their perspective with regards to depersonalization (such as if they felt it was a necessity/a natural occurrence in a resuscitation, if they felt it occurred on a case by case basis, or if they felt it was prevalent and problematic in patient care) and any other concerning clinical behavior that they may have observed that we would not have anticipated. To assess this aim, a combination of multiple choice, check box, and open-ended free-text questions were asked.

Our next goal surrounded assessing student knowledge and utilization of support services and the timeframe in which said services were utilized. We finished by assessing student perspectives with regards to what students thought would be helpful in terms of debriefing/interventions on their emergency medicine rotations and when they would find these interventions helpful (if any at all). We anticipate that > 10% of students will value debriefing with their clinical team as proximate to the resuscitation as possible (ideally right after the event) given that this will be the most relevant time to

discuss the event with the experience and emotions more palpable to the student.

Hypotheses

1. All medical students who have completed an emergency medicine or trauma rotation have been exposed to an emergency resuscitation at least once. This hypothesis is secondary to the crime rate in New Haven which is anywhere from 13% to 203% above the United States average over the past 8 years with Yale New Haven hospital being the main medical center and only full trauma center that serves the New Haven community [32]. The probability that a medical student who has shadowed or completed an emergency medicine or surgery clerkship (which are mandatory) is exposed to an emergency resuscitation is very high as a Yale medical student.

2. Greater than 10% of medical students feel that patients were depersonalized during emergency resuscitations and found this depersonalization either personally troubling or as compromising to patient care. This belief is secondary to data collected from the annual student mistreatment reports and end of clerkship feedback where common themes of depersonalization and distress were observed.

3. There is a low utilization of support services to help medical students cope with the emotional stress of being exposed to an emergency resuscitation. This belief is largely based upon anecdotal stories at post clerkship discussions that occur at the end of every block. Very few students admitted to utilizing said services and a very small population (only 1 to 3 students) often speak about their use of said services. In conjunction with the time

constraints associated with rotations and USMLE prep, it is also not

necessarily feasible for students to allocate time to the support services at

Yale unless they are very deliberate and structured in their attempts to seek

help given their other obligations.

4. Greater than 10% of medical students would value an intervention such as

debriefing after experiencing an emergency resuscitation either directly after

the event or at the conclusion of the rotation with a preference for an

intervention as soon as possible. This is based on feedback that Yale

medical students have given in the annual student mistreatment report and at

the end of clerkship feedback.

Specific Aims

Justification of Current Study:

Yale medical students have demonstrated concern with regards to patient

depersonalization during emergency resuscitations and expressed perpetual/lasting

distress based on post-clerkship assessments that are performed regularly at the end of

each clerkship. Such distress and concern among medical students prompts a need to

assess student perspectives with regards to depersonalization, their desire for post-code

interventions, when they believe said interventions would be useful, and who they think

should perform the interventions.

Current Research

Current literature has delved into the benefits of debriefing in a medical student

population with regards to simulation and education and it is common practice to

implement this practice as it seems to improve the educational experience and retention

of clinical knowledge [33]. This has been demonstrated in many situations whether it is

high-fidelity simulation with debriefing, real-time discussion/feedback during procedures

like CPR, and simulation of clinical scenarios with debriefing sessions [27, 28]. Given

the burnout that occurs frequently in medicine (in particular in emergency medicine), and

the loss of empathy that is regularly noted in medical students, it is important to

determine what aspects of medicine students find troubling and to offer interventions that

mitigate these negative possibilities [2-4, 29].

Emergency medicine is particularly plagued by stress, burnout, and low satisfaction

with one's life [16]. In addition, the annual student mistreatment report and end of

clerkship feedback supported this assertion that students are experiencing distress

potentially related to depersonalization and a lack of coping/processing skills thus prompting the need for assessment.

Gaps in Knowledge

Review of the literature demonstrates that current research has not thoroughly assessed student perspectives with regards to depersonalization during codes and the interventions that would be useful and when they would be useful. There is a plethora of research that has demonstrated the utility of debriefing and intervention in simulation and for the sake of quality in emergency resuscitations (process improvement, team dynamics, etc.) thus suggesting that a similar intervention for depersonalization among medical students could be helpful. Prior to implementing interventions, it is important to first assess student perspectives to determine if there is a critical amount of student distress with regards to depersonalization occurring (which we defined as > 10%) and which interventions would be desired.

Critical Need

Currently, a major obstacle to medical student satisfaction and potentially learning on their emergency medicine rotation is this depersonalization that is experienced on the rotation and a seemingly lack of resources and utilization for students to cope with this aspect of emergency medicine. Prior to determining which interventions would be most effective, it was first necessary to assess student opinions with regards to depersonalization, whether or not they think an intervention would be useful, and how to best implement it.

We assessed each of the specific aims below via an anonymous survey of all Yale medical students (including dual degrees) utilizing the anonymous Qualtrics survey

software. All students including pre-clinical students were surveyed with regards to their experiences and perspectives.

1. Assess medical student exposure to emergency resuscitations (in terms of quantity and location/service where they were exposed).

2. Assess whether the students believe depersonalization of the patient occurred during the emergency resuscitation and if they found it to cause distress/be problematic.

3. Assess for other observations and deviations from ideal care (such as professional behavior, interactions with family, etc.) during resuscitations and any other observations that could contribute to less optimal care or that they saw as problematic.

4. Assess student awareness of current support services at Yale.

5. Assess student utilization of the aforementioned support services and any other interventions and barriers that may exist that decrease said utilization.

6. Assess student opinions on what they think would be helpful in terms of support services.

7. Assess what timeframes that said support services should be implemented for optimal utilization and any other potential time constraints that may exist.

Materials and Methods

Preliminary Data

The initial data that motivated this study with regards to depersonalization and student distress was collected at the end of each clerkship via written feedback that occurs regularly at the end of every clerkship. This end of clerkship feedback was gathered and common themes of distress and depersonalization were noted. In addition, the annual student mistreatment survey demonstrated similar findings further reifying this concern and the need for further assessment. This survey and data collection was created and performed by the Yale department of emergency medicine and served as the initial motivation for this study.

Data Collection Tool

The specific aims were assessed utilizing an entirely anonymous survey that can be seen in Appendix 1. The survey was sent out using the Yale Qualtrics survey tool which created an anonymous link that allowed medical students (years 1 through 4 including dual degrees) to feel comfortable using a trustworthy and commonly used software that they knew guaranteed anonymity. This allowed for them to fully express their ideas and perspectives surrounding emergency resuscitation exposure, depersonalization, and support services. No personal identifiers were collected (including class year) to protect student anonymity. The survey was reviewed by Yale's IRB and the director of the Yale Teaching and Learning Center to ensure its appropriateness in assessing the study aims in a manner that would be non-threatening to the Yale medical student population. The Yale Teaching and Learning Center has extensive experience with surveys given to the medical student population and how to

frame them in such a manner so they are not perceived as threatening and collect the most unbiased (from fear of repercussions from not responding, or that their grade will be affected) information as possible.

Consent was obtained from all participants with the initial screen of the survey (see Appendix 3: Consent Form). Students were informed both with the recruitment email and survey introduction that the survey was:

1. Entirely anonymous

2. Not related to their grade at all

3. Not linked to any form of compensation

The survey questions were a mixture of multiple choice, check box (with the option to check multiple answers and provide a text answer if insufficient options), and text box for the narrative portion of the survey. We designed the entire survey, the consent form, and the outreach email and made alterations to the aforementioned based on feedback from Yale's IRB and the Yale Teaching and Learning Center.

Subject Outreach

Yale medical students were contacted using the email listservs and encouraged to participate but were informed that participation was anonymous, voluntary, and in no way associated with their grade or performance evaluation. No compensation was offered to students who completed this survey to ensure the integrity of responses and avoid incomplete/less thoughtful responses which only sought the reward offered. In addition, students were informed that they could discuss their experiences with regards to emergency resuscitations in relation to any service/clerkship they were on (rather than just on the emergency medicine clerkship) to include a broader group of students who

may have only been exposed on certain services or who have not yet completed their emergency medicine clerkship.

The survey invitation was worded (see Appendix 2: Student Outreach E-mail) in a manner that emphasized that this was an optional survey not linked to the student at all in terms of identifiers, their grades, or compensation. This laid the groundwork for unbiased information collection to truly collect student's opinions without any fear of coercion. The lack of compensation also created an environment where only students truly interested in responding participated, and there were no instances where students merely clicked through the survey/did not provide information in order to receive compensation.

Results: Tables and Figures

Response rate

The response rate to our survey was 53.75% (215 out of 400 medical students). Students were not segregated based on class or pre-clinical vs. clinical years to protect anonymity which is a potential limitation of the data collected.

Definition of Clinical Significance

For the purposes of this study, a clinically significant number of students was considered to be any amount > 10% of respondents. A lower threshold was chosen given the smaller class size at Yale School of Medicine and the rich resources available which could have a vast impact on a student's professional career even if they are in the minority when it comes to experiencing distress and depersonalization.

Emergency Resuscitation Exposure & Student Involvement

Of those medical students who responded, 45.24% (n = 95) of students had never been exposed to an emergency resuscitation thus the information collected from them was utilized in terms of their current knowledge about support services, their utilization, and their beliefs surrounding what would be helpful. The remaining 54.76% (n = 115) of students had been exposed to an emergency resuscitation at some point with 15.15% (n = 15) having been exposed to 1 resuscitation, 13.13% (n = 13) having been exposed to 2 resuscitations, 12.12% (n = 3) exposed to 3 resuscitations, 16.16% (n = 16) exposed to 4, and 43.43% (n = 43) exposed to 5 or more resuscitations as medical students. A likely explanation for there not being a 100% response rate/exposure to emergency resuscitations is likely related to the fact that pre-clinical students were also surveyed for this project.

A majority of emergency resuscitations occurred when medical students were on their emergency medicine rotation (46.99%, n = 78) and their internal medicine rotation (27.11%, n = 45). Of those exposures, cardiac (42.44%, n = 73) and trauma (36.63%, n = 63) were the predominant chief complaints. This data could suggest clinical scenarios for the department of emergency medicine to implement via simulations which reflect these chief complaints for more realistic scenarios if the department chooses to go in that direction in terms of intervention.

Student involvement in emergency resuscitations was robust with 57.55% (n = 122) of students actively involved performing chest compressions (24.06%), obtaining equipment (22.64%), generally assisting with the code (8.96%), performing ultrasound (0.94%), interacting with family (0.47%), or assisting with transfusion (0.47%). These results suggest a high level of hands on involvement by medical students during emergency resuscitations.

Student Perspectives on Depersonalization

Of those students involved in an emergency resuscitation, 74.00% (n = 74) believed that depersonalization occurred to some extent. Of those that believed depersonalization of the patient occurred, 34.69% (n = 17) of respondents found it as a regular occurrence and as problematic (with smaller portions finding it as against the patient's recorded DNR wishes) far exceeding our threshold of clinical significance at 10%. A majority of medical students who believe depersonalization occurred also believe that it is a necessary/natural aspect of an emergency resuscitation (59.18%, n = 29).

Support Services Utilization

Student support service utilization demonstrated that only a minority of students (7.61%, n = 7) were actually utilizing support services while at Yale. Of those who utilized support services, the only services used were Yale Mental Health, mental health services outside of Yale, and a peer advocate. All respondents (100.00%) who utilized these services thought they were helpful with students utilizing the service within 1 week, 1 month, or 1 year of the event.

Support Service Awareness

Only .29% (n = 2) of respondents were not aware of any support services available to them. The category of support service with the greatest amount of awareness was a meeting with the Dean of Student affairs (20.18%, n = 138), followed by Yale Mental Health (19.88%, n = 136), then meeting with the attending on your service (15.79%, n = 108), meeting with the clerkship director (14.91%, n = 102), meeting with the student's academic adviser (13.45%, n = 92), and meeting with a chaplain (12.72%, n = 87). The remainder of services had less than 2.00% of students aware of their existence/availability. No category of support service had a majority of student awareness despite all of these resources being demonstrated regularly as possible options while on service. This data suggests that students are not internalizing the information presented to them in terms of available support services and could suggest that alternative/more effective means of communication are necessary to communicate with said students.

Student Perspectives on Support Services

The top support services that students thought would be helpful would be a debriefing session with residents (16.21%, n = 130), debriefing session with attendings

(15.46%, n = 124), a debriefing session with fellow medical students (15.34%, n = 123), Yale Mental Health (12.22%, n = 98), a meeting with the attending on that service (10.72%, n = 86) a meeting with the Dean of Student affairs (9.10%, n = 73), and a meeting with the clerkship director (7.48%, n = 60). The remaining possible services received 5% or less of student support as a possible intervention. There was a diverse set or perspectives with regards to what students would deem effective thus making choosing 1 particular service more difficult due to the lack of consensus. Many of these resources exceeded our clinical threshold of 10% thus making them viable options as interventions per the data collected.

Student Perspectives on Emergency Medicine Clerkship Resources and Debriefing

Of those students polled, 43.09% (n = 53) felt the department of emergency medicine did not offer adequate support and opportunities for students to discuss stressful experiences when on their emergency medicine rotations. A majority of students (56.82%, n = 75) felt that the department of emergency medicine should offer a support measure for students exposed to emergency resuscitations that is not currently either implemented or accessible. This value far-exceeded our clinical threshold of 10% and supports the notion that an intervention should be implemented or made more accessible for students.

The most favored post-emergency resuscitation interventions were debriefing with clinical individuals (residents, attendings, and nurses) at a convenient point (45.61%, n = 26), an immediate debrief after the event (21.05%, n = 12), and debriefing with individuals specifically trained in debriefing (10.53%, n = 6). A significant amount of students felt that debriefing should occur within 1 day of the event (30.61%, n = 45),

immediately after the event (29.25%, n = 43), or within 1 week of the event (29.25%, n =

43). Overall, a significant preference for proximate and clinically-oriented individuals

was favored.

Table 1: Student Exposure to Emergency Resuscitations

Student exposure to emergency resuscitations	Number of Students	Percent
Unexposed	95	45.24%
Exposed	115	54.76%

Figure 1: Student Exposure to Emergency Resuscitations
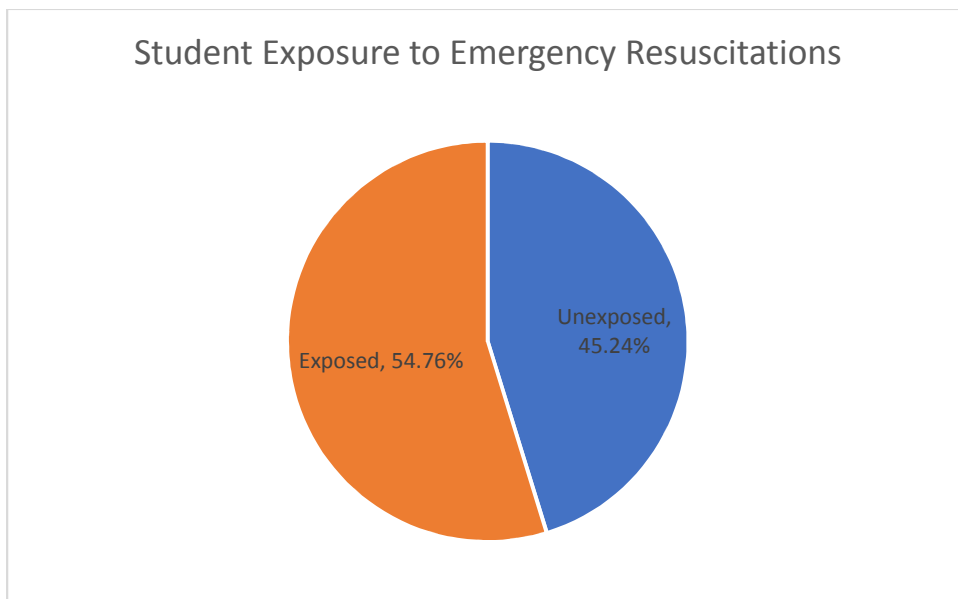
Figure 1 demonstrates how a majority of students (including pre-clinical students who

have not yet done their clerkships) have been exposed to an emergency resuscitation.

Table 2: Quantity of Emergency Resuscitation Exposures

Resuscitation exposure quantity	Number of Students	Percent

1	15	15.15%
2	13	13.13%
3	12	12.12%
4	16	16.16%
5+	43	43.43%

Figure 2: Quantity of Emergency Resuscitations Exposed to
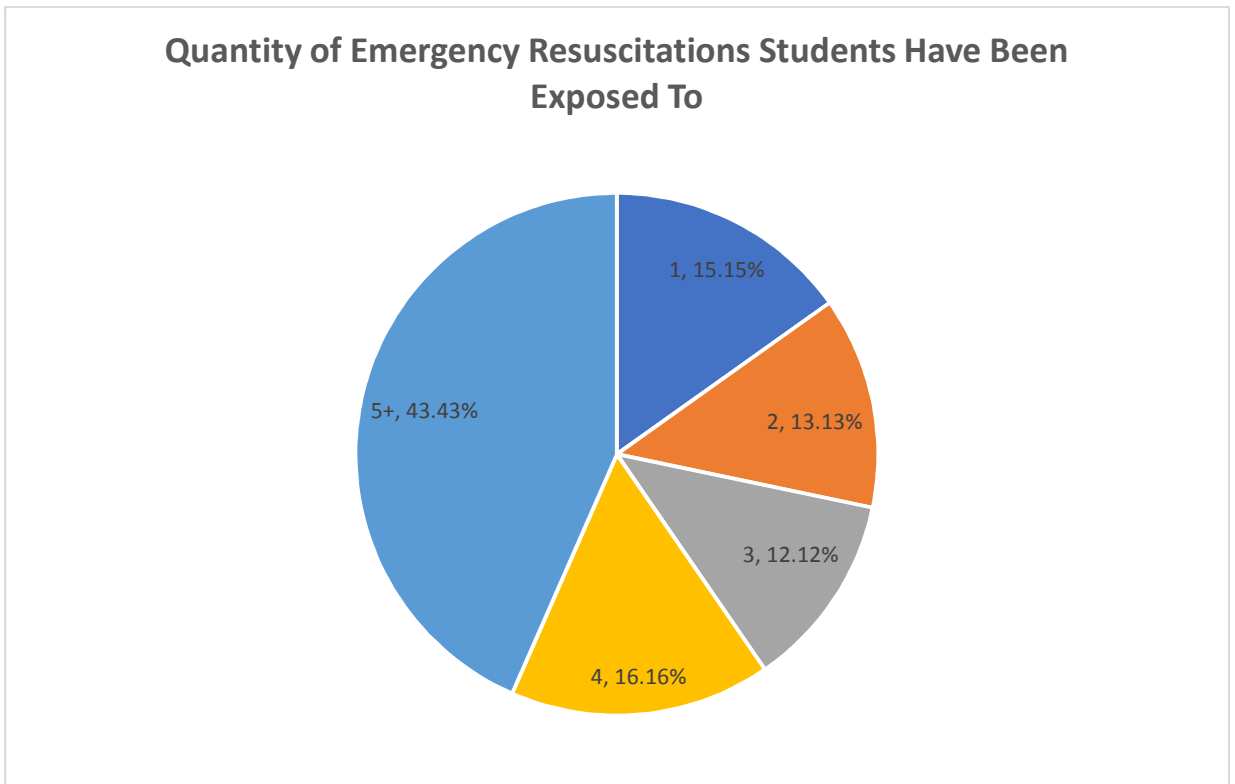
Figure 2 demonstrates that a plurality of students have been exposed to 5 or more emergency resuscitations demonstrating the ubiquity of exposure that occurs while on clinical rotations.

Table 3: Where Students are Exposed to Emergency Resuscitations

Resuscitation exposure location	Number of Students	Percent
Emergency Medicine Clerkship	78	46.99%
Emergency Medicine Sub-I	6	3.61%
Trauma surgery	4	2.41%
Internal Medicine	45	27.11%
Surgery	13	7.83%
Cardiology	5	3.01%
EM Ultrasound	3	1.81%
Neuro	2	1.20%
Shadowing EM	7	4.22%
Pediatrics	2	1.20%
Interventional Radiology	1	0.60%

Figure 3: Where Students are Exposed to Emergency Resuscitations

Where Students are Exposed to Emergency Resuscitations

- Pediatrics, 1.20%
- Shadowing EM, 4.22%
- Interventional Radiology, 0.60%
- Neuro, 1.20%
- EM Ultrasound, 1.81%
- Cardiology, 3.01%
- Surgery, 7.83%
- Emergency Medicine Clerkship, 46.99%
- Internal Medicine, 27.11%
- Trauma surgery, 2.41%
- Emergency Medicine Sub-I, 3.61%
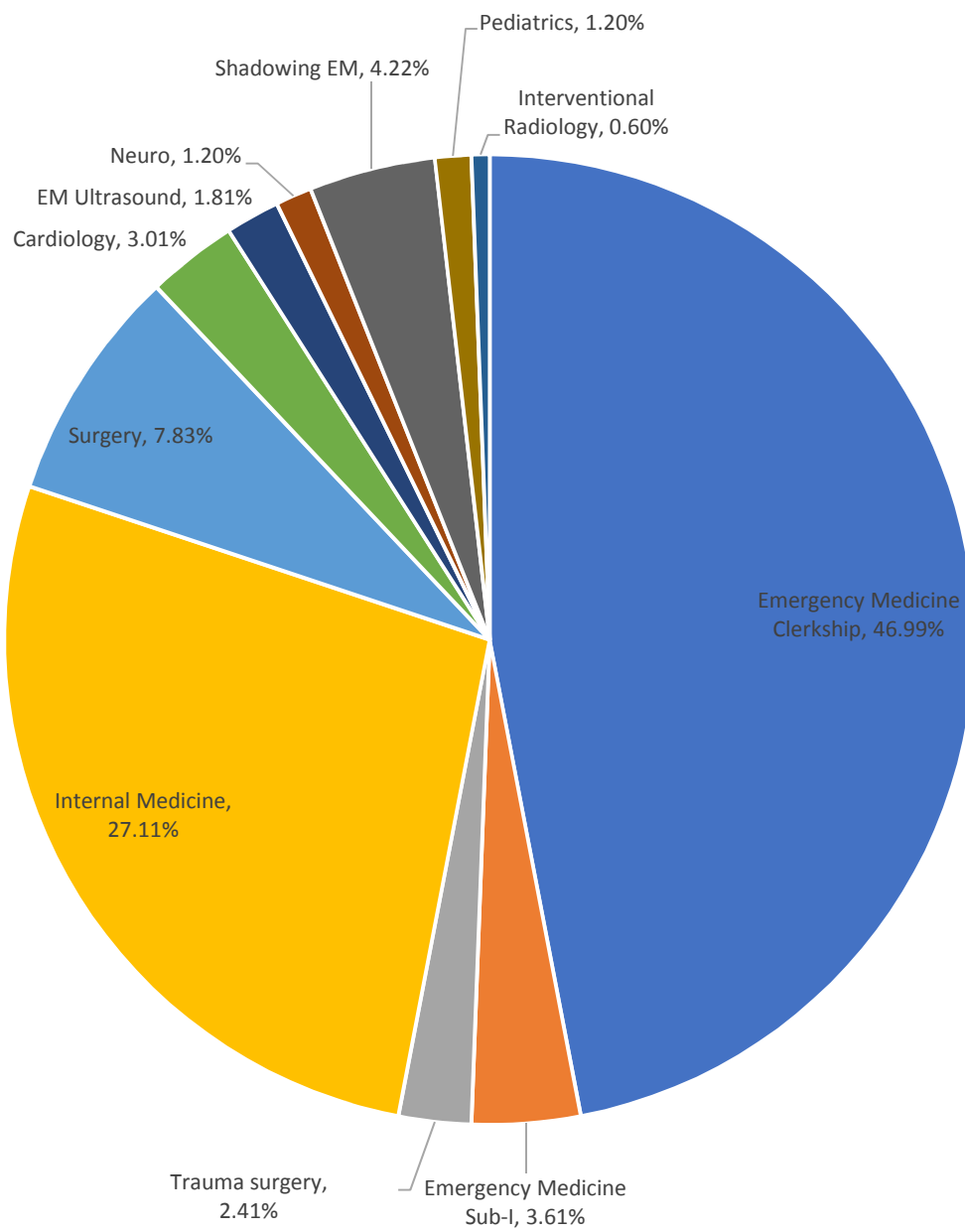
Figure 3 demonstrates that the largest amount of emergency resuscitation exposures occurred on emergency medicine rotations.

Figure 3A: Chief Complaint of Patient Being Resuscitated

Chief Complaint of Patient Being Resuscitated

- Psychiatric, 5.81%
- Cardiac, 42.44%
- Trauma, 36.63%
- Neurologic, 15.12%
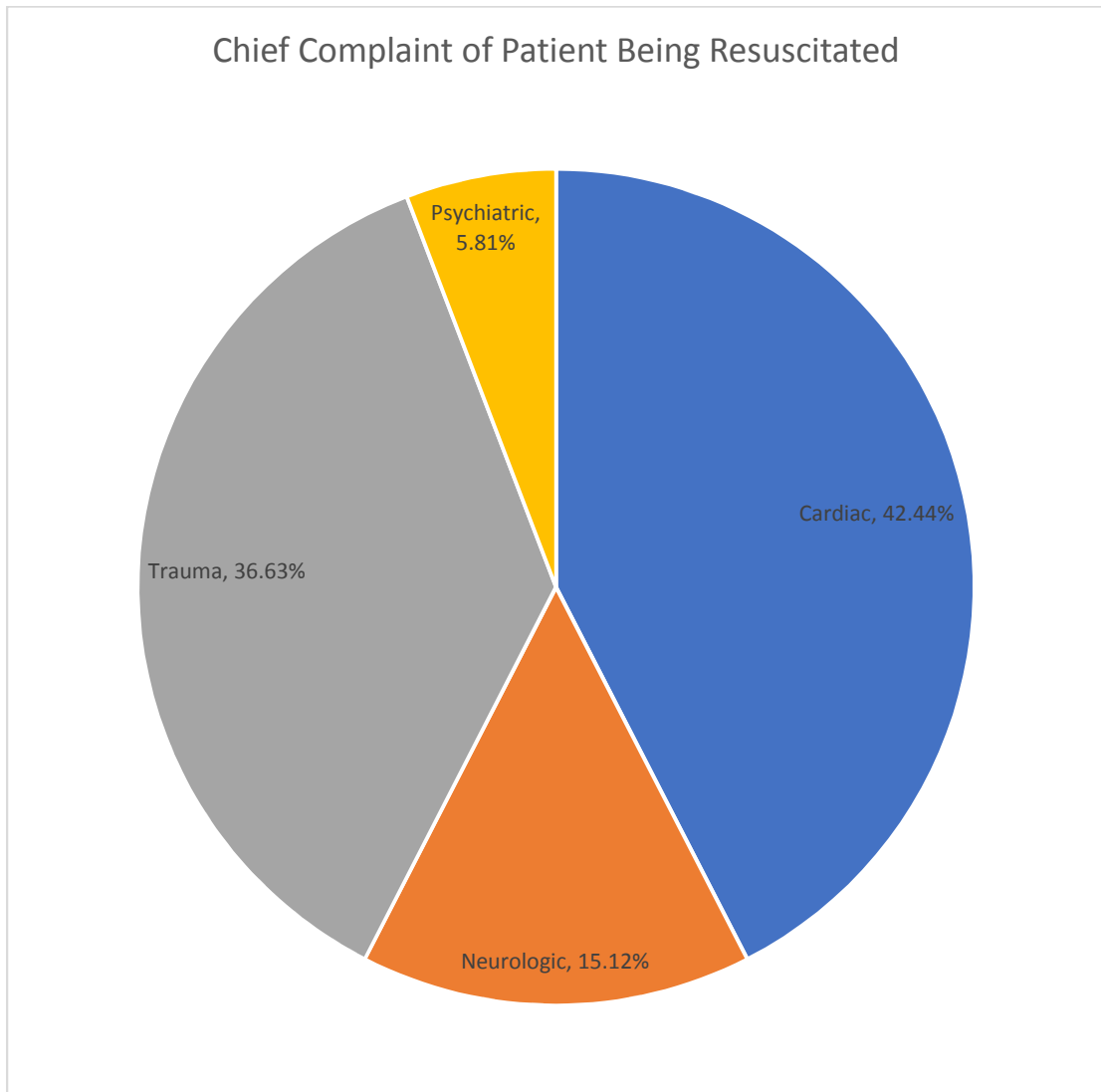
Figure 3A demonstrates the common chief complaints observed during emergency resuscitations with trauma and cardiac related presentations dominating.

Figure 3B: Intervention Performed During the Resuscitation
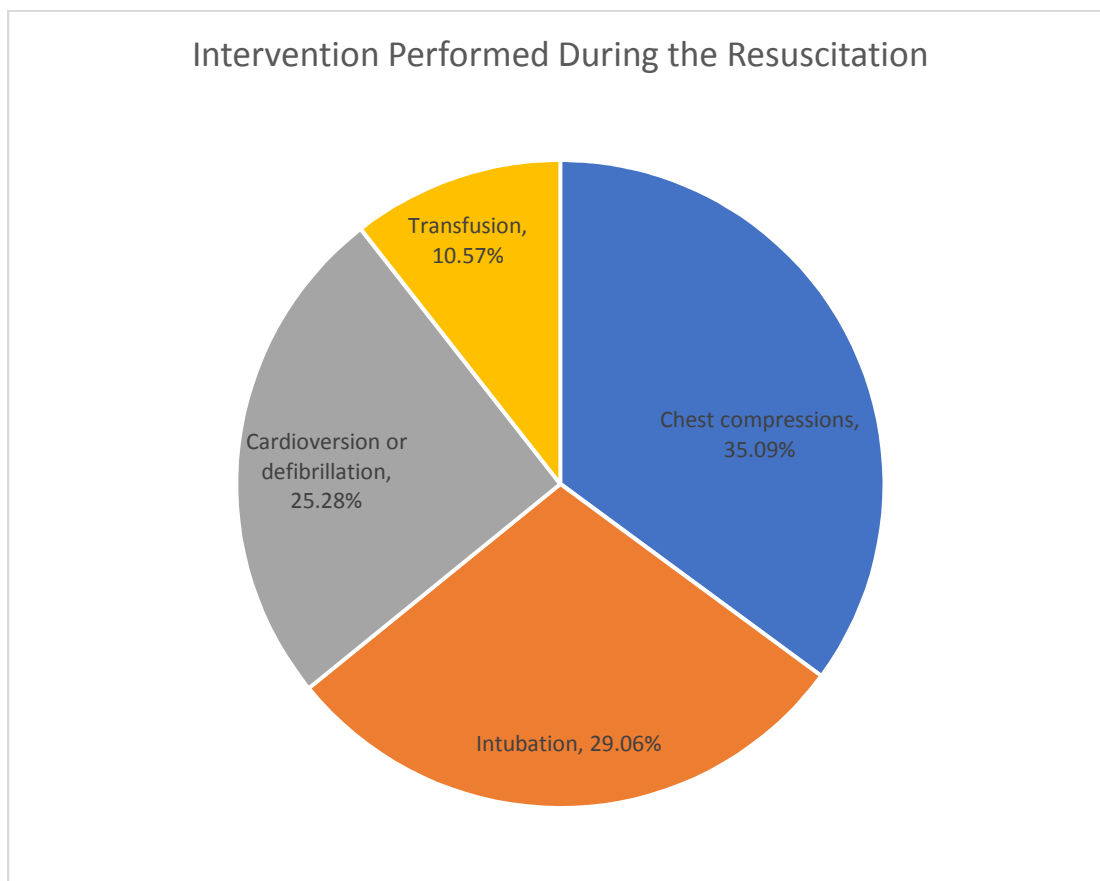
Figure 3B demonstrates the interventions that were performed during the resuscitation.

Table 4: Medical Student Involvement in Emergency Resuscitations

Involvement in code	Number of Students	Percent
Observed	90	42.45%
Performed chest compressions	51	24.06%
Got equipment	48	22.64%
Assisted with code	19	8.96%

Ultrasound	2	0.94%
Called family/DNR	1	0.47%
Assisted with transfusion	1	0.47%

Figure 4: Medical Student Involvement in Emergency Resuscitations

Medical Student Involvement in Emergency Resuscitation

Ultrasound, 0.94% — Called family/DNR, 0.47% — Assisted with transfusion, 0.47%

Assisted with code, 8.96%

Got equipment, 22.64%

Observed, 42.45%

Performed chest compressions, 24.06%
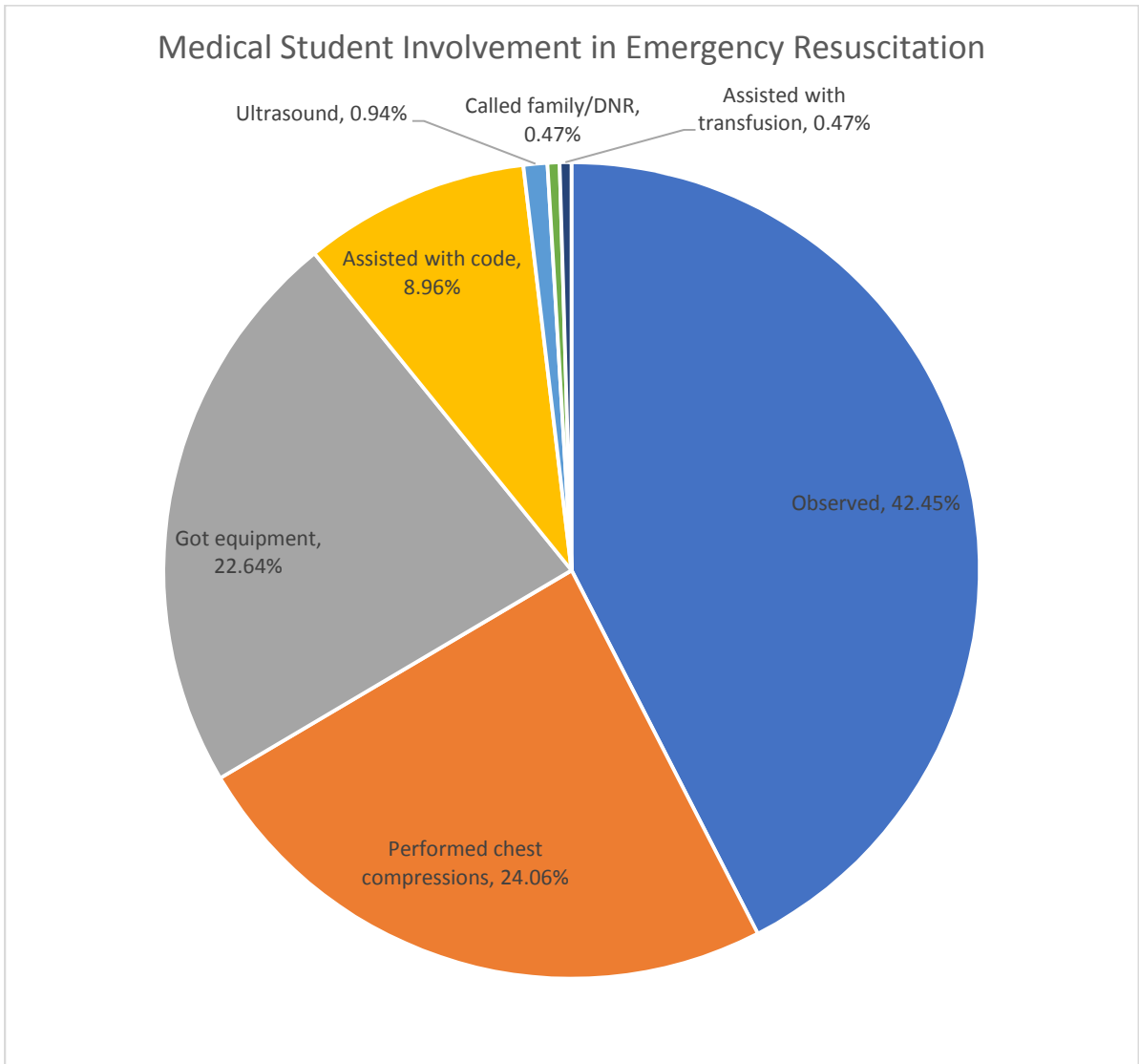
Figure 5 demonstrates how medical students were involved in the emergency

resuscitation with a large amount of students only observing.

Table 5: Student Perspectives on Depersonalization During Resuscitations

Did depersonalization occur during the resuscitation	Number of Students	Percent
No	26	26.00%
Yes	74	74.00%

Figure 5: Did depersonalization occur during the resuscitation?
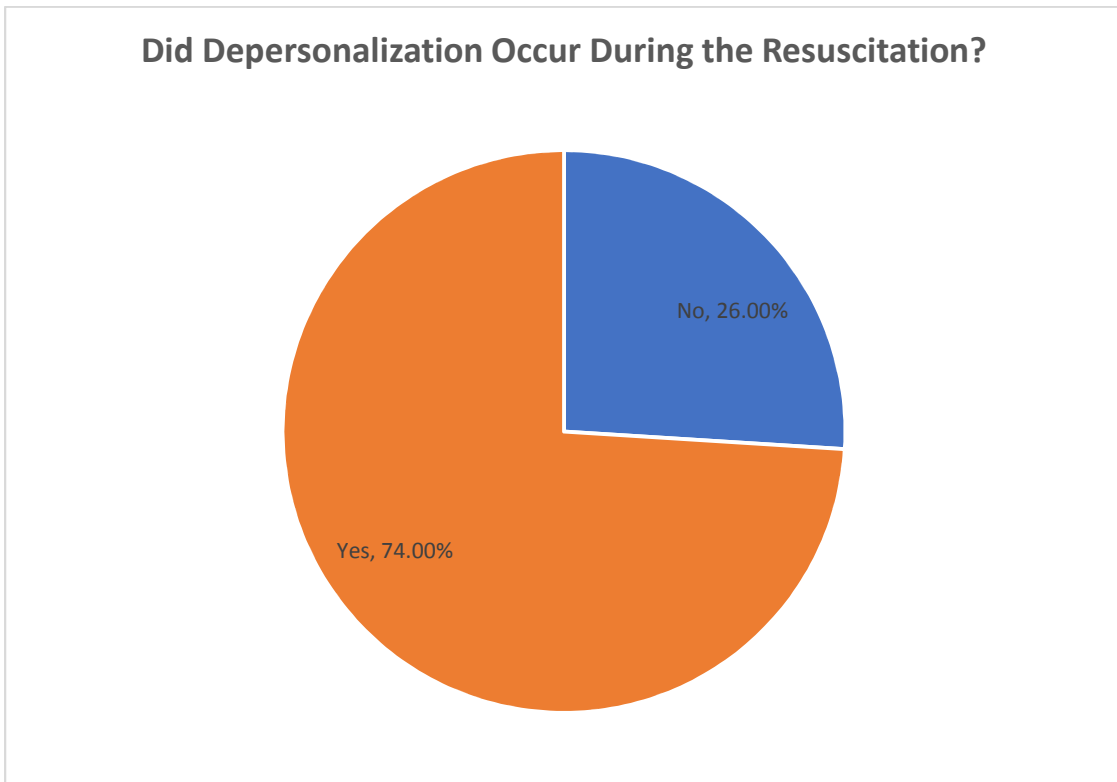
Figure 5 demonstrates student perspectives on if they believed that depersonalization occurred during the resuscitation.

Table 6: Student Perspectives on Depersonalization

Student Perspectives on Depersonalization	Number of Students	Percent

Depersonalization occurred but is necessary	29	59.18%
Resuscitation was performed against recorded DNR and ignored patient wishes	2	4.08%
Depersonalization is sometimes necessary, but sometimes goes too far depending on the case	1	2.04%
Depersonalization occurs regularly and is problematic	17	34.69%

Figure 6: Student Perspectives on Depersonalization

Student Perspectives on Depersonalization

- Depersonalization occurs regularly and is problematic, 34.69%
- Depersonalization occurred but is necessary, 59.18%
- Depersonalization is sometimes necessary, but sometimes goes too far depending on the case, 2.04%
- Resuscitation was performed against recorded DNR and ignored patient wishes, 4.08%
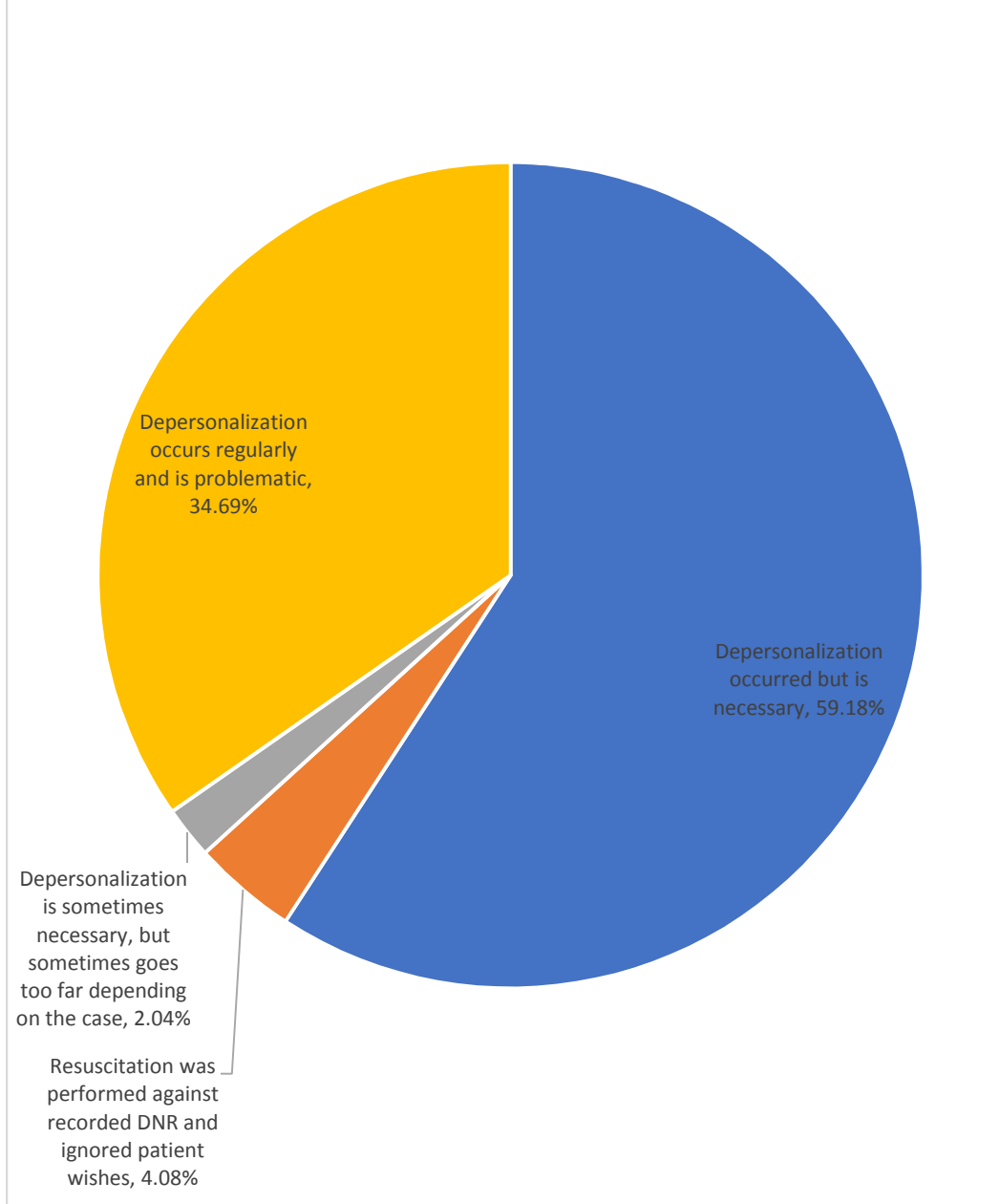
Figure 6 demonstrates student perspectives with regards to depersonalization with a majority of students believing that depersonalization occurred but is a natural part of an emergency resuscitation.

Table 7: Student Support Service Utilization

Have you ever used support service	Number of Students	Percent
Yes	7	7.61%
No	92	92.39%

Figure 7: Student Support Service Utilization

Did You Utilize a Support Service?

Yes, 7.61%

No, 92.39%
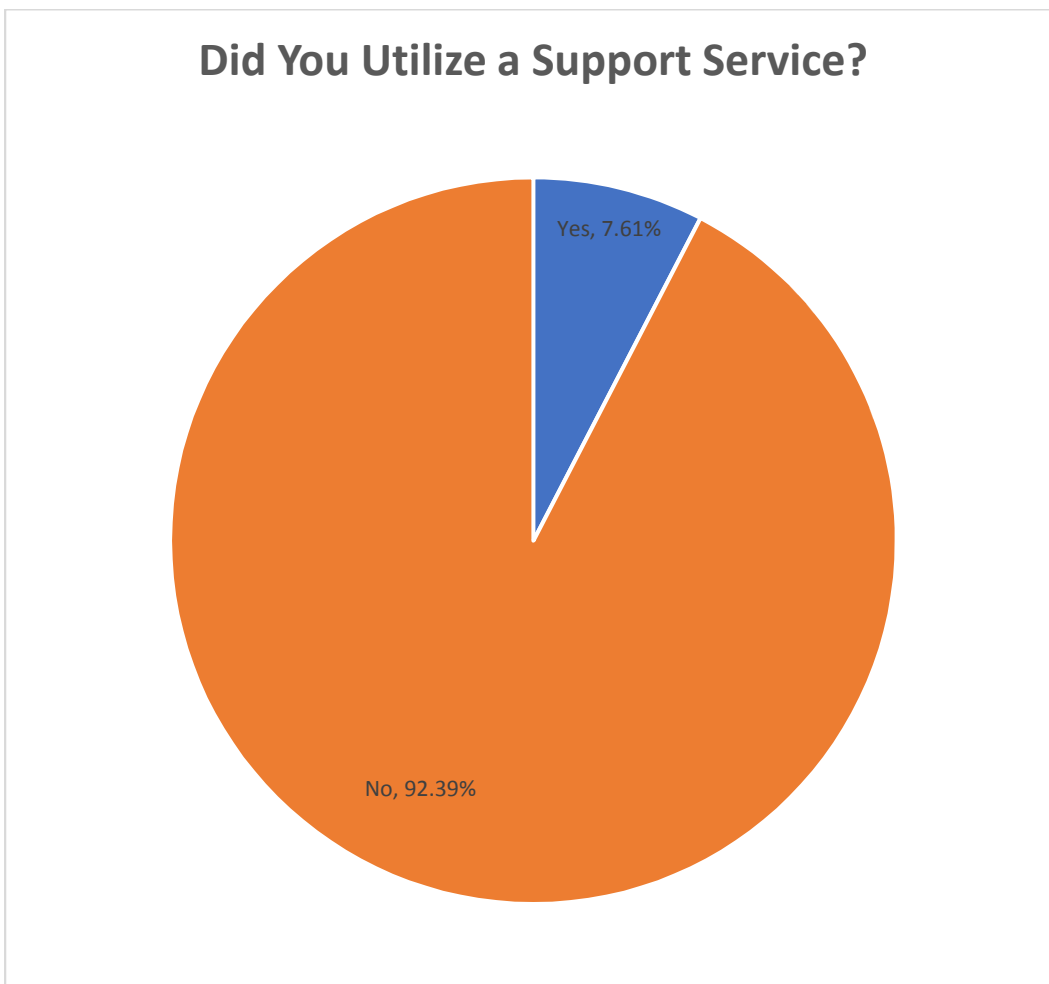
Figure 7 demonstrates the support services utilized with a majority of students having

never utilized a support service.

Table 8: Support Services Utilized by Students

Which Support Service did you use	Number of Students	Percent
Yale Mental Health	3	50.00%
Mental health outside Yale	1	16.67%
Peer advocate	2	33.33%

Figure 8: Support Services Utilized by Students

Support Services Utilized by Students
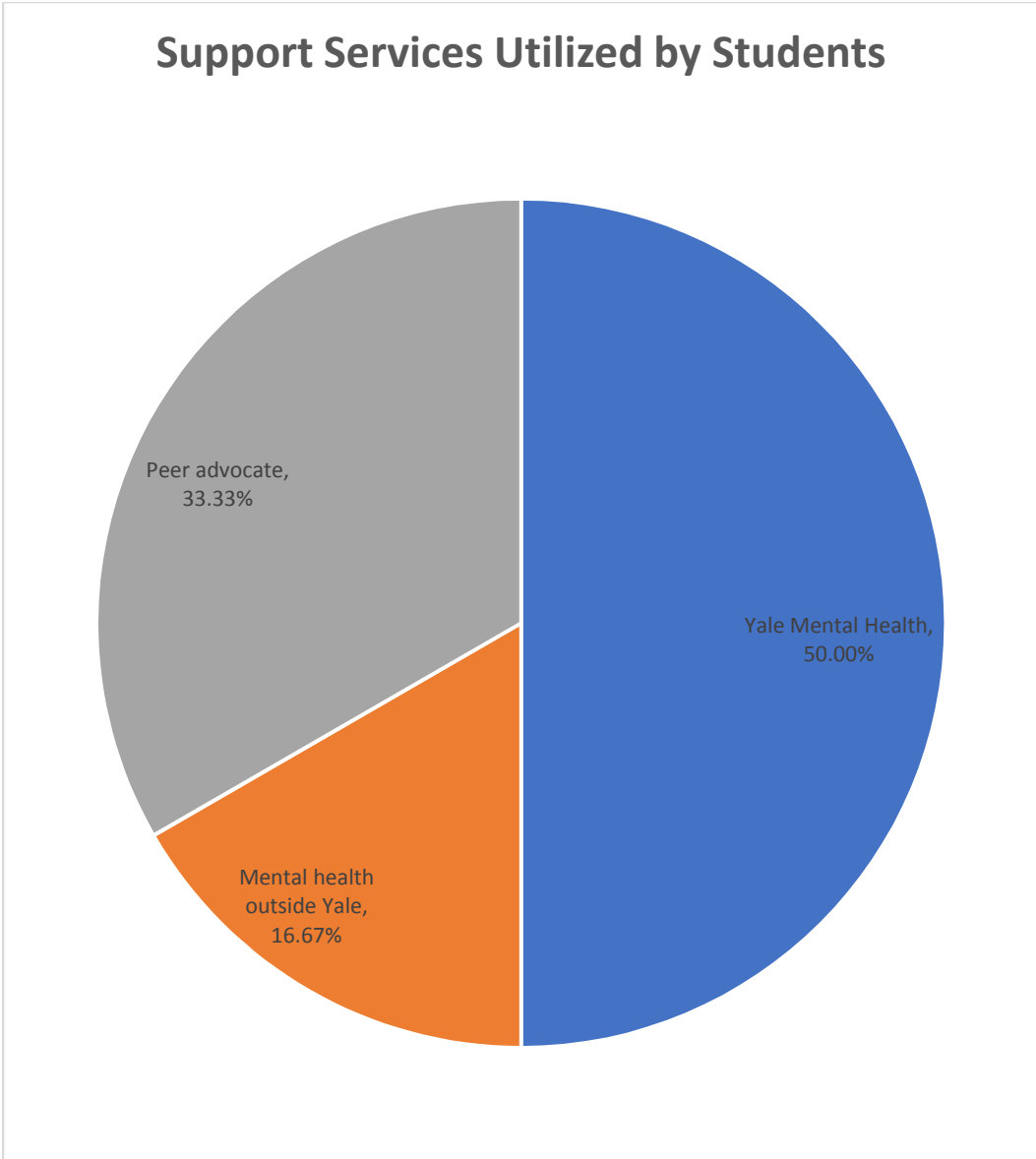
Figure 8 demonstrates the specific resources utilized by students who chose to utilize support services with most students utilizing mental health services.

Table 9: Perceived Usefulness of Support Services Utilized

Did you find the service you used helpful?	Number of Students	Percent

	4	100.00%
No	0	0.00%

Table 10: Student Recommendations for Usefulness of Support Services Utilized

Would you recommend the support service you used to others?	Number of Students	Percent
Yes	4	100.00%
No	0	0.00%

Table 11: When Students Utilized Their Support Services

What most accurately describes when you used this support service?	Number of Students	Percent
Within 1 month of the event	1	33.33%
Within 1 week of the event	1	33.33%
Within 1 year of the event	1	33.33%

Figure 11: When Students Utilized Their Support Services

When Students Utilized Their Support Services

Within 1 year of the event, 33.33%

Within 1 month of the event, 33.33%

Within 1 week of the event, 33.33%
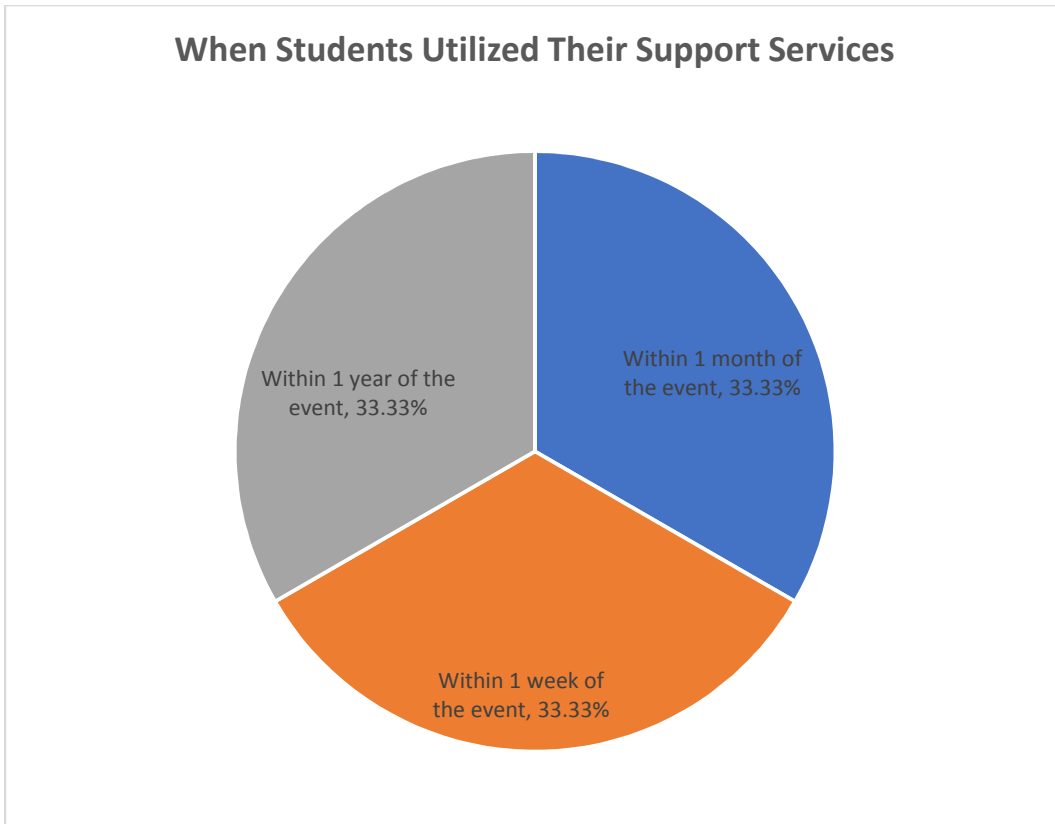
Figure 11 demonstrates the time frame in which students utilized their support services.

Table 12: Student Awareness of Available Support Services

What support services are you aware of that exist at Yale for resuscitation exposure?	Number of Students	Percent
I am not aware of any	2	0.29%
Meeting with the Dean of Student affairs	138	20.18%
Meeting with the clerkship director	102	14.91%
Meeting with your attending	108	15.79%
Meeting with your academic adviser	92	13.45%
Yale Mental Health	136	19.88%

Meeting with a chaplain	87	12.72%
The aforementioned options and wait times/relationships with these people may make them not viable options	1	0.15%
Discussion with peers	9	1.32%
Outside mental health	1	0.15%
Resident debriefing	4	0.58%
Reflective writing	1	0.15%
Discussion with house staff	2	0.29%
Diversity office	1	0.15%

Figure 12: Student Awareness of Available Support Services

Student Awareness of Available Support Services

- Discussion with peers, 1.32%
- The aforementioned options and wait times/relationships with these people may make them not viable options, 0.15%
- Resident debriefing, 0.58%
- Outside mental health, 0.15%
- Reflective writing, 0.15%
- Discussion with house staff, 0.29%
- Diversity office, 0.15%
- I am not aware of any, 0.29%
- Meeting with the Dean of Student affairs, 20.18%
- Meeting with the clerkship director, 14.91%
- Meeting with your attending, 15.79%
- Meeting with your academic adviser, 13.45%
- Yale Mental Health, 19.88%
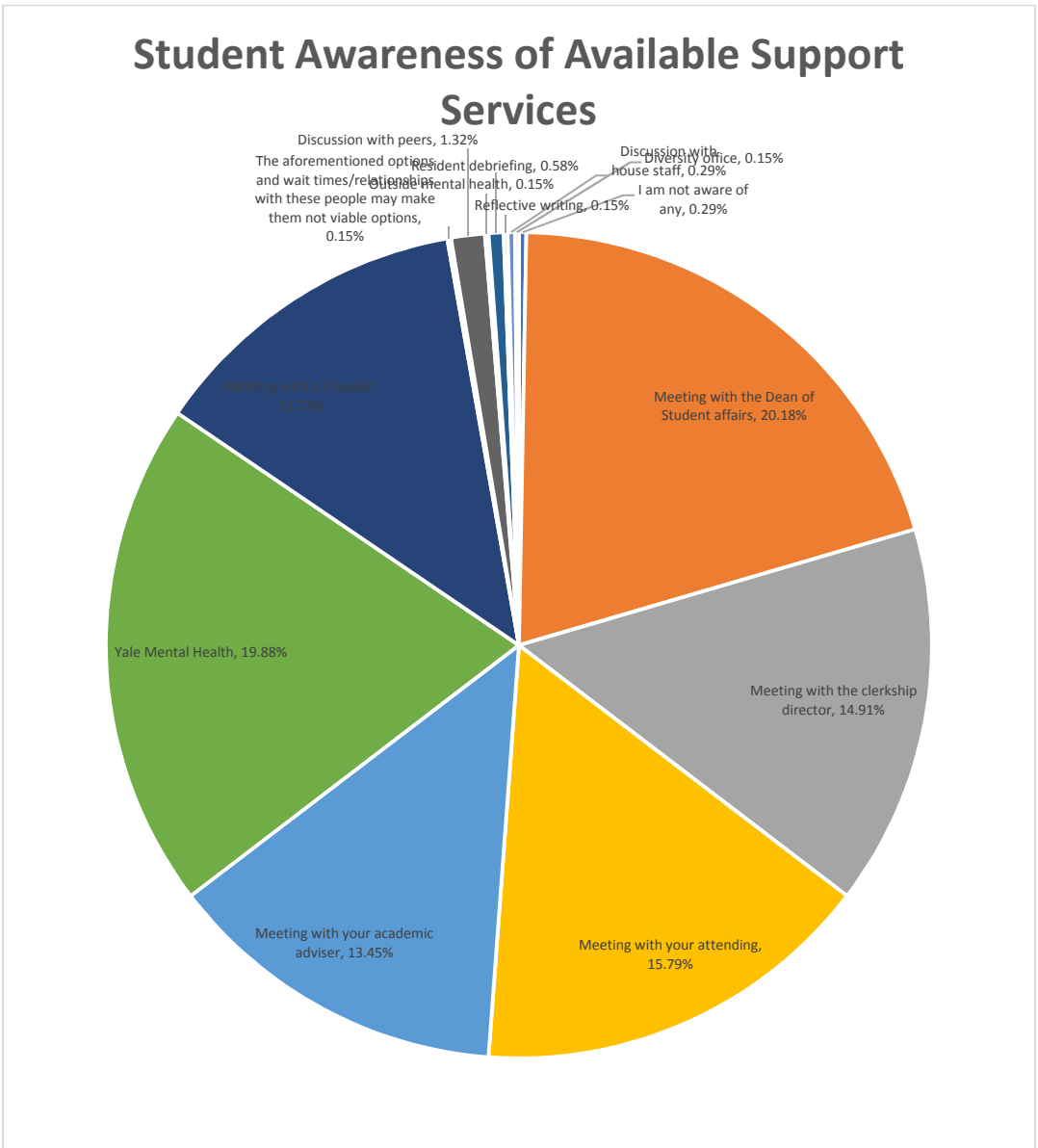- Meeting with a chaplain, 12.22%

Figure 12 demonstrates the resources that medical students are aware of as being available to them.

Table 13: Interventions Students Believe Would Be Helpful Post-Resuscitation

What supportive interventions do you think would be helpful for medical students?	Number of Students	Percent

I do not think supportive interventions are needed or would be helpful to medical students	2	0.25%
Meeting with the Dean of Student affairs	73	9.10%
Meeting with the clerkship director	60	7.48%
Meeting with your attending	86	10.72%
Meeting with your academic adviser	43	5.36%
Yale Mental Health	98	12.22%
Meeting with a chaplain	58	7.23%
Debriefing session with attendings	124	15.46%
Debriefing session with residents	130	16.21%
Debriefing session with fellow medical students	123	15.34%
Peers	1	0.12%
Resident not grading you	2	0.25%
Depends on the rapport you have with your team	1	0.12%
Only trained residents and attendings - untrained and forced debriefing likely harmful/not helpful	1	0.12%

Figure 13: Interventions Students Believe Would Be Helpful Post-Resuscitation

Interventions Students Believe Would Be Helpful Post-Resuscitation

- Depends on the rapport you have with your team, 0.12%
- Peers, 0.12%
- Resident not grading you, 0.25%
- Only trained residents and attendings - untrained and forced debriefing likely harmful/not helpful, 0.12%
- I do not think supportive interventions are needed or would be helpful to medical students, 0.25%
- Meeting with the Dean of Student affairs, 9.10%
- Meeting with the clerkship director, 7.48%
- Meeting with your attending, 10.72%
- Meeting with your academic adviser, 5.36%
- Yale Mental Health, 12.22%
- Meeting with a chaplain, 7.33%
- Debriefing session with attendings, 15.46%
- Debriefing session with residents, 16.21%
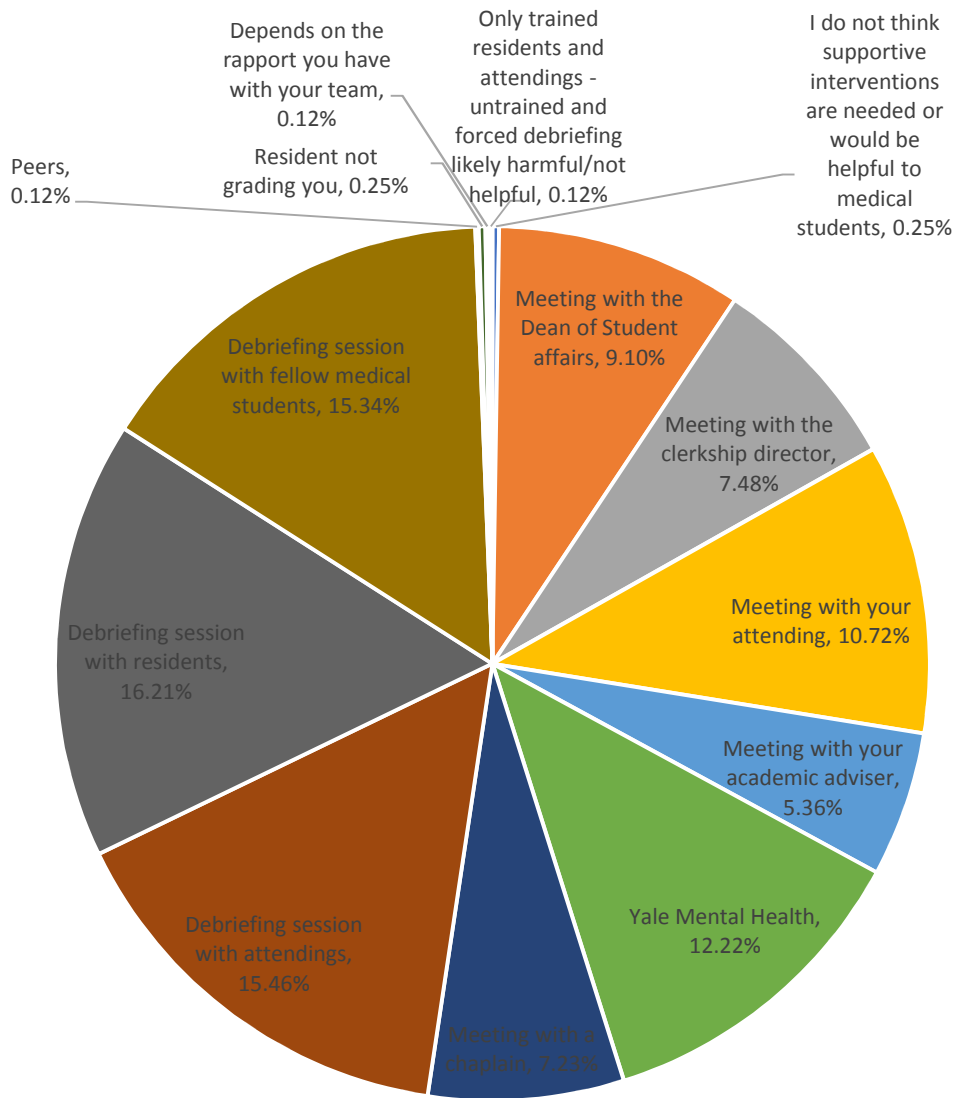- Debriefing session with fellow medical students, 15.34%

Figure 13 demonstrates the resources students believe would be helpful to them post-resuscitation exposure with an even distribution of responses amongst most options.

Table 14: Student Perspective on Adequacy of Support Services Currently Offered

Do you feel the Department of Emergency Medicine offered adequate support and opportunities for you to discuss stressful experiences when on your rotation?	Number of Students	Percent
No	53	43.09%
Yes	70	56.91%

Figure 14: Student Perspective on Adequacy of Support Services Currently Offered

Do you feel the Department of Emergency Medicine offered adequate support and opportunities for you to discuss stressful experiences when on your rotation?
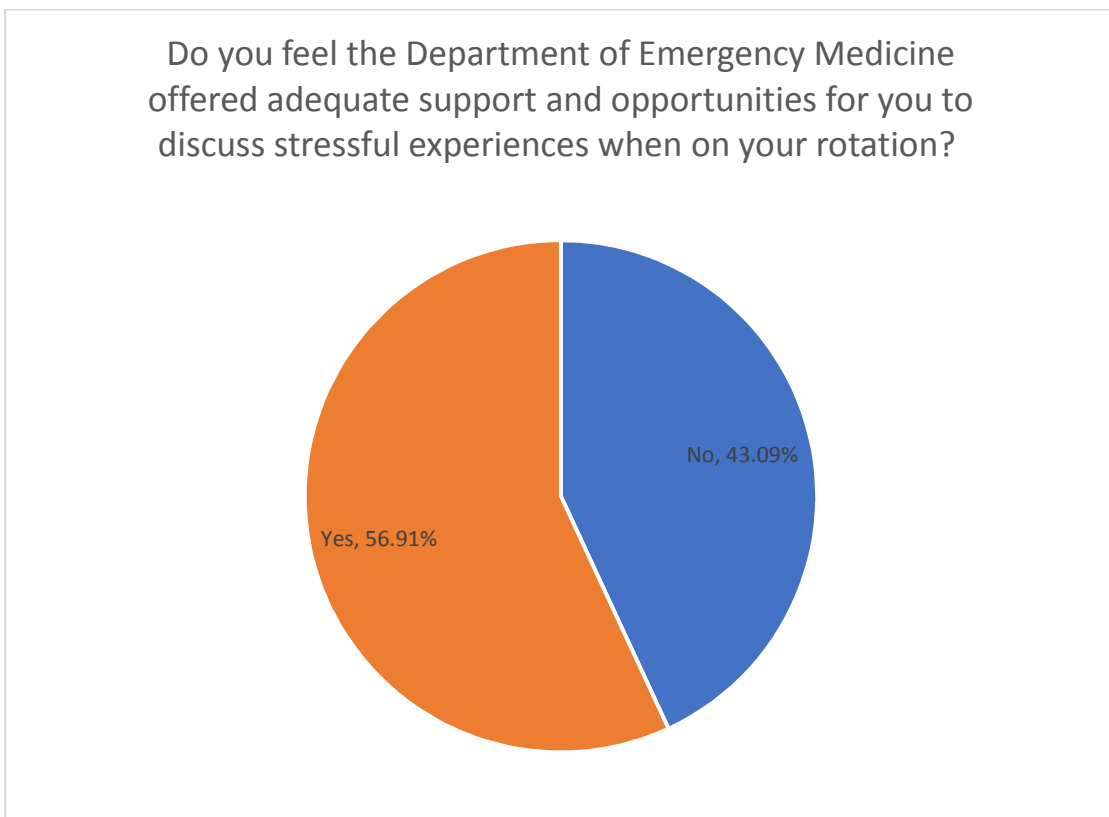
No, 43.09%

Yes, 56.91%

Figure 14 demonstrates if students believe the department of emergency medicine is providing adequate support services when on a rotation. A majority of students believed that sufficient services were being offered.

Table 15: Student Perspectives on the Necessity of Additional Services

Should the Department of Emergency Medicine offer a support measure for students exposed to emergency resuscitations that is not currently implemented/accessible?	Number of Students	Percent
No	57	43.18%
Yes	75	56.82%

Figure 15: Student Perspectives on the Necessity of Additional Services

Should the Department of Emergency Medicine offer a support measure for students exposed to emergency resuscitations that is not currently implemented/accessible?
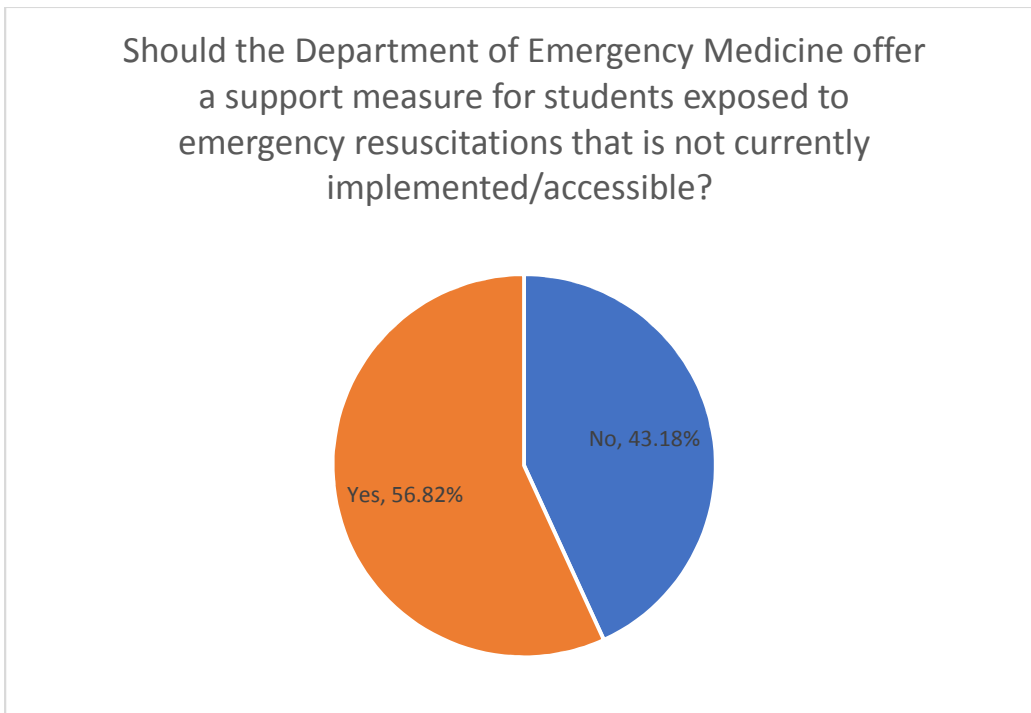
No, 43.18%

Yes, 56.82%

Figure 15 summarizes student perspectives as to whether they believe additional services are needed, or need to be made more available by the department of emergency medicine for students on their clinical rotations. A majority of students support the implementation of a new service/resource that is not currently offered.

Table 16: Student Perspectives on What Services Should Be Offered Post-Resuscitation

What interventions/supportive measures do you think should be offered by or made more accessible to assist students with processing emotions after a code?	Number of Students	Percent
Immediate debrief	12	21.05%
Clerkship wide optional debrief	1	1.75%
Debrief with clinical individuals (residents, attendings, nurses) at some convenient point	26	45.61%
Debriefing with specifically trained individuals for debriefing	6	10.53%
Debrief with clinical individual not grading student	1	1.75%
Protected reflecting time	1	1.75%
Med student only debrief	2	3.51%
Reminders about services during rotations	1	1.75%
Unsure	4	7.02%
None	3	5.26%

Figure 16: Student Perspective on What Services Should Be Offered Post-Resuscitation

What interventions/supportive measures do you think should be offered by or made more accessible to assist students with processing emotions after a code?

- Reminders about services during rotaitons, 1.75%
- Med student only debrief, 3.51%
- Protected reflecting time, 1.75%
- Debrief with clinical indivudal not grading student, 1.75%
- Debriefing with speicifically trained individuals for debriefing, 10.53%
- None, 5.26%
- Unsure, 7.02%
- Immediate debrief, 21.05%
- Clerkship wide optional debrief, 1.75%
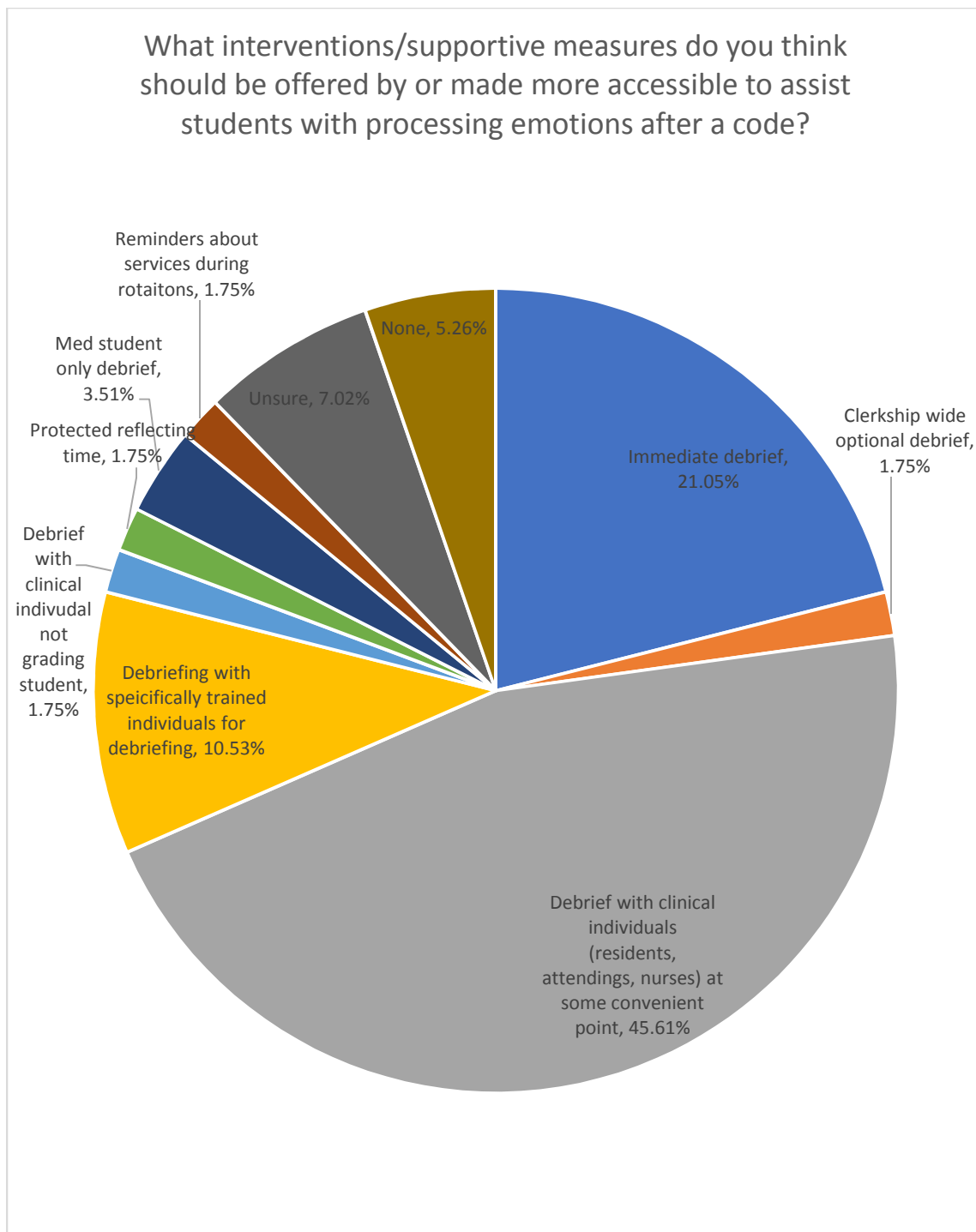- Debrief with clinical individuals (residents, attendings, nurses) at some convenient point, 45.61%

Figure 16 demonstrates the interventions that students believe would be the most helpful after being exposed to an emergency resuscitation with most students favoring a debrief with clinical individuals at a convenient point for the team.

Table 17: Time Frame Students Believe Will Be Helpful for Post-Resuscitation Intervention

If a supportive measure/intervention were to take place, within what time frame do you think it would be the most helpful?	Number of Students	Percent
Immediately after the event	43	29.25%
At the end of the clerkship	5	3.40%
Within 1 day of the event	45	30.61%
Within 1 week of the event	43	29.25%
Within 1 month of the event	2	1.36%
Within 1 year of the event	1	0.68%
I do not think a support measure is necessary	4	2.72%
Immediately after the event and again in the future	2	1.36%
Seek help on your own with resources available	1	0.68%
Student dependent - they pick the time frame that works for them	1	0.68%

Figure 17: Time Frame Students Believe Will Be Helpful for Post-Resuscitation Intervention
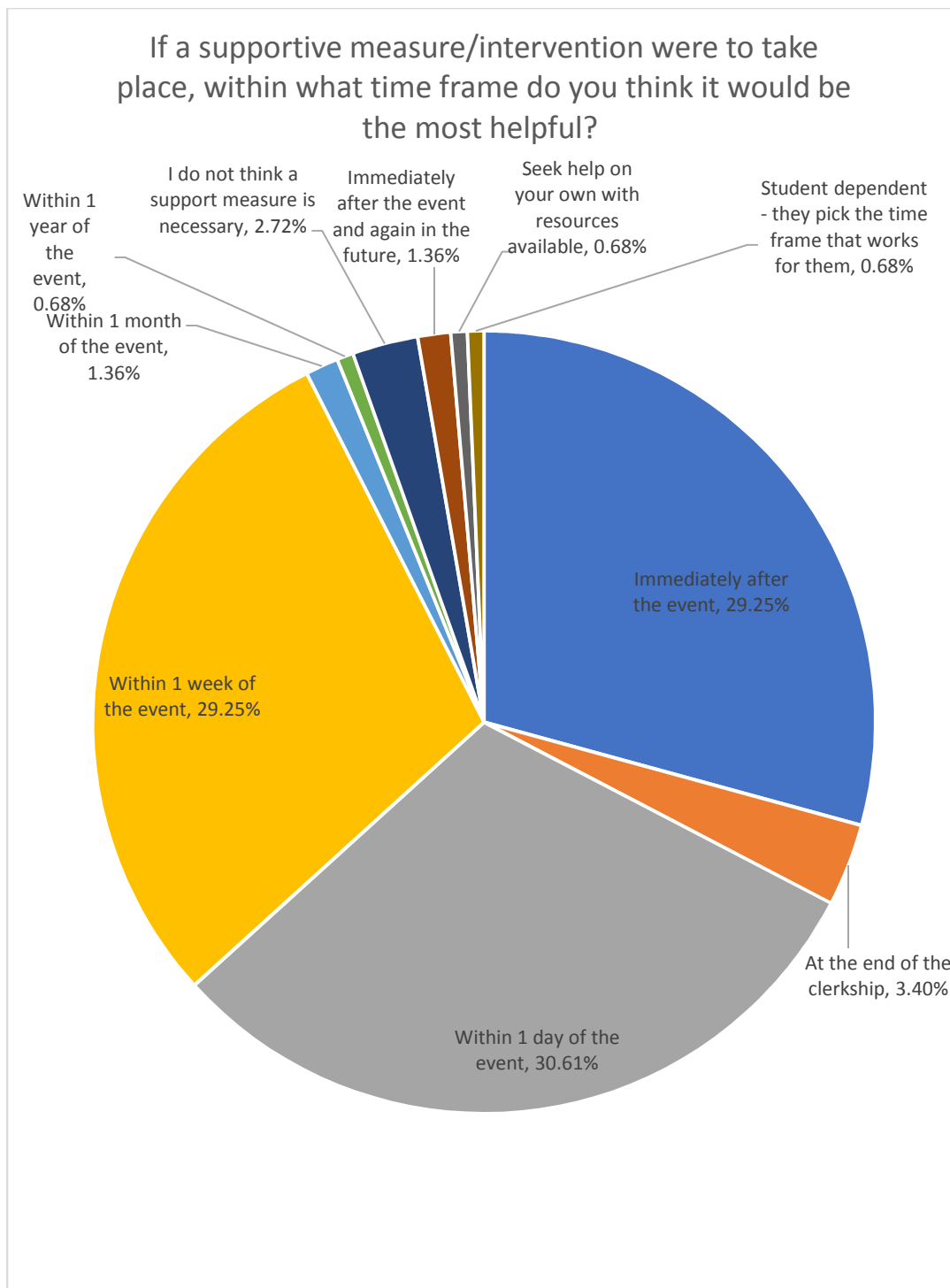
Figure 17 demonstrates the timeframe that students believe an intervention should be implemented/would be the most helpful with a preference for proximate interventions (immediately, within day, and within 1 week).

Table 18: Chief Complaint of Patient Being Resuscitated

Chief complaint of patient being resuscitated	Number of Students	Percent
Cardiac	73	42.44%
Neurologic	26	15.12%
Trauma	63	36.63%
Psychiatric	10	5.81%

Figure 18: Chief Complaint of Patient Being Resuscitated

Chief Complaint of Patient Being Resuscitated

Psychiatric, 5.81%
Cardiac, 42.44%
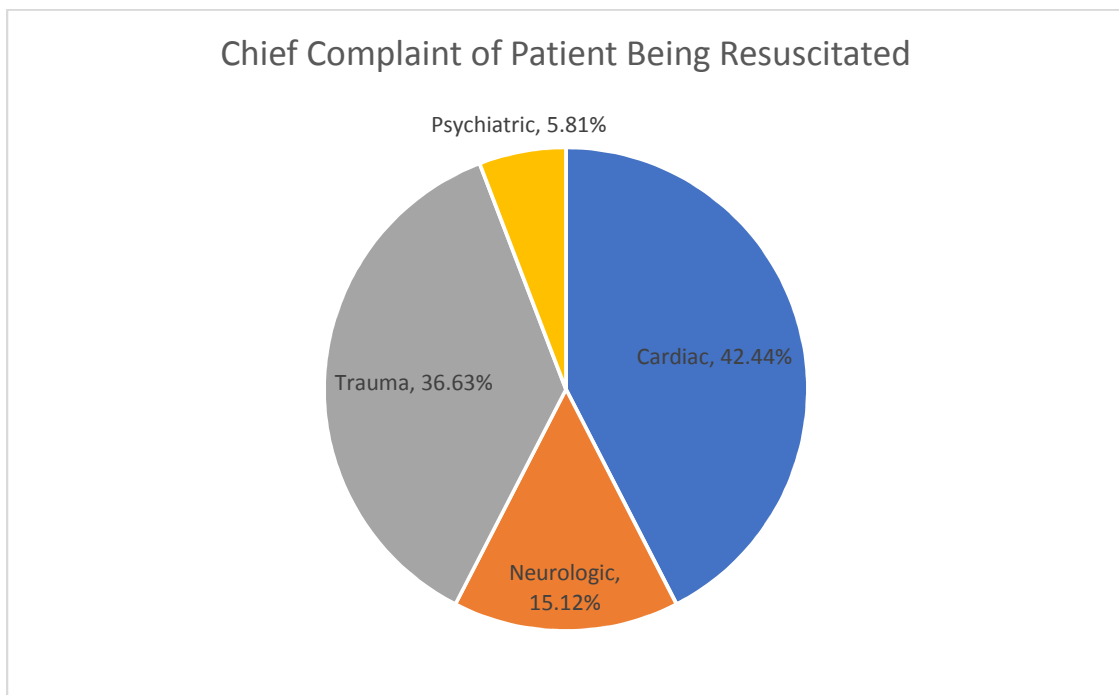Trauma, 36.63%
Neurologic, 15.12%

Figure 18 demonstrates the chief complaint of the patient being resuscitated with cardiac and trauma chief complaints predominating.

Table 19: Interventions Performed During the Resuscitation

Intervention	Number of Students	Percent
Chest compressions	93	35.09%
Intubation	77	29.06%
Cardioversion or defibrillation	67	25.28%
Transfusion	28	10.57%

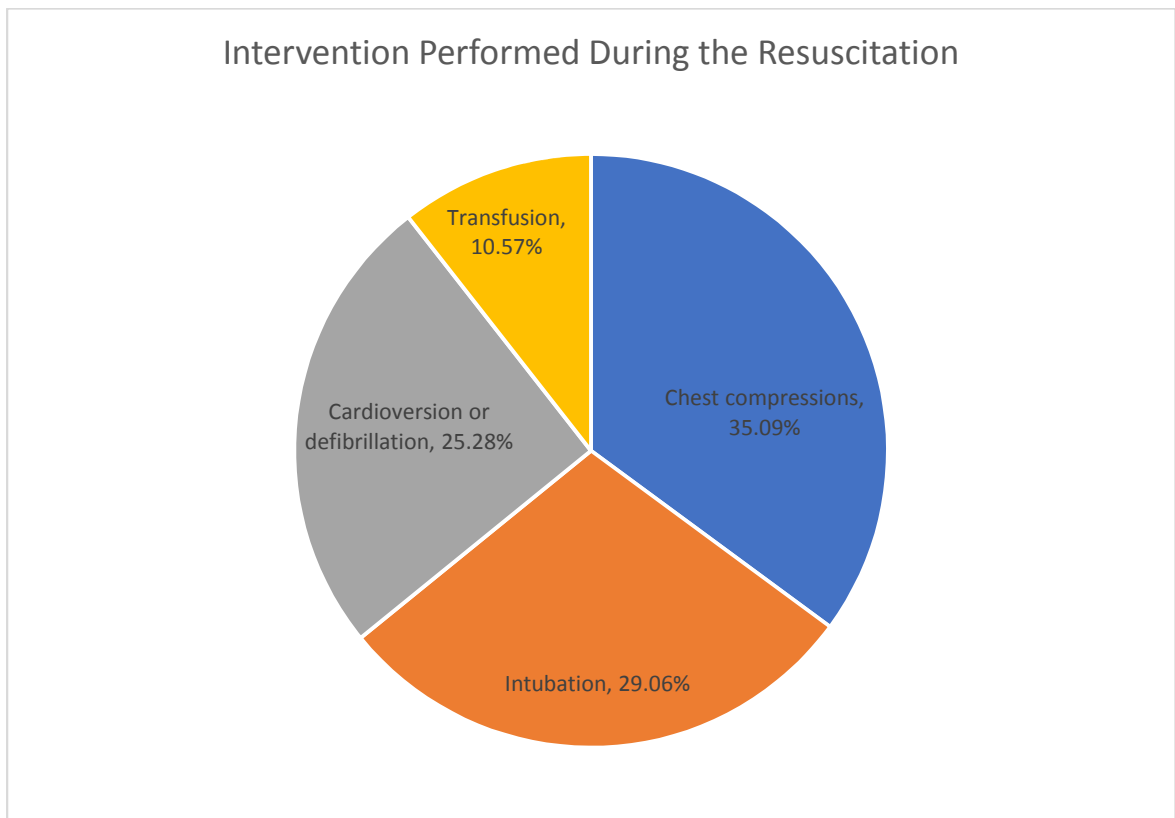**Figure 19: Interventions Performed During the Resuscitation**

Figure 19 demonstrates the interventions that students observed as being performed when they were exposed to an emergency resuscitation.

Discussion

Medical student exposure to emergency resuscitations

Our study revealed that a majority of medical students are exposed to emergency resuscitations (54.76%) or will be exposed to resuscitations at some point in their training demonstrating the vast exposure that occurs that seems to be a key experience that all medical students encounter at some point in their training. Given that a fairly large number of medical students have been exposed to an emergency resuscitation (43.43% of those exposed have been exposed to 5 or more emergency resuscitations) it is important to consider how students respond to these emergency resuscitations and when they are exposed. Similarly, if graduating students are never exposed to an emergency resuscitation it also reveals that either simulations or additional clinical experiences/rotations may be necessary so that they can have this critical experience.

A majority of students are exposed to emergency resuscitations in the emergency department with 46.99% seeing resuscitations on their emergency medicine clerkship, 3.61% on their emergency medicine sub-internship, 1.81% on emergency medicine ultrasound, and 4.22% when shadowing in the emergency department. Given the vast exposure to resuscitations when on an emergency medicine rotation, and the role students play in a resuscitation (with 57.55% being directly involved in the resuscitation), the department of emergency medicine offers the richest opportunity to play the primary role in debriefing and ensuring adequate support for students exposed to resuscitations. Such support services could be extended to the other students exposed to resuscitations on other services as it would be less practical for these clerkships to implement standardized interventions if very few students are encountering them when on these services.

Depersonalization of patients during emergency resuscitations

Depersonalization would not be problematic if students could perhaps understand the context of a resuscitation and the many constraints that may make its occurrence more frequent during a resuscitation; however, 74.00% of students believed depersonalization occurred during the resuscitation with 34.69% seeing this as problematic and 4.08% seeing it as against the patient's wishes (per DNR status). This far exceeds our threshold of clinical significance of 10% and supports the notion that depersonalization is occurring and is stressful for students and that an intervention could be warranted. This population who sees depersonalization as problematic is vulnerable to negative outcomes like distress and burnout as depersonalization has been shown to be associated with burnout [17].

It is important to note that most students (59.18%) perhaps have a more mature perspective on resuscitations and acknowledge that though depersonalization occurs, it is a necessary evil when treating a patient in an acute setting and that communication may be compromised or constrained either based on time or severity of the presentation. This population may benefit less from a standardized intervention and could potentially allocate their time to other endeavors such as studying, preparing for rotations, or rest. However, those who find it problematic may find themselves struggling to complete their emergency medicine rotation or may be more prone to burnout on these rotations given the disconnect they are feeling with their patients in such a high stress situation [2, 4, 8, 14-20, 34]. This is consistent with the initial end of clerkship surveys and student mistreatment reports that prompted this project and suggested student distress in response

to these codes. Regardless of the reasoning as to why depersonalization is occurring, it is still relevant to potentially intervene and protect this population for optimal patient care and medical student experience as it is already well-known that burnout is problematic to the field of emergency medicine [2, 15-19].

Other observations and deviations from ideal care during resuscitations

A small portion of students (4.08%) found that the emergency resuscitations deviated from ideal care due to poor communication and understanding of patient wishes. In the narrative portion, a common theme was that students noted an invasive resuscitation process that was then terminated after considerable time due to the late realization that the patient was DNR status. Understandably, sometimes it may be difficult to manage determining a patient's wishes while providing optimal care which is highly time sensitive; however, these experiences demonstrate how discussion can either improve the resuscitation process (by understanding patient's wishes sooner and improving the process) or serve as a teaching opportunity/debriefing opportunity with medical students as this may be the natural flow of patient care in the emergency department and discussing this could be therapeutic for students and improve their well-being and education. This observation also brings to light an opportunity to intervene potentially with improved EMS-hospital communication or improvements in technology where the physician is automatically alerted as to a DNR status whenever a patient presents who requires resuscitation.

Student awareness of support services at Yale

Student awareness of support services contradicted our initial expectation that students would be very aware of the resources available to them. This initial expectation

was made based on the many e-mails and meetings students have during their clinical years which outline the resources they can use. Students typically received contact about these services prior to a new clerkship block, after a clerkship block, and sporadically throughout the year via in person interaction and e-mails. However, the category with the greatest awareness was a meeting with the Dean of Student Affairs which was only 20.18% of students followed by Yale Mental Health at 19.88%. However, it was also acknowledged in the narrative portion that some students felt many of these resources were not accessible whether it was due to long wait times at Yale Health, or a lack of rapport with the individuals who would meet with students. We suspect rapport with the individuals who would converse/debrief with the students to be a major barrier as students would be less likely to discuss a traumatic experience with an individual they do not know well. In addition, we also suspect that time constraints and the demanding nature of medical school may be the greatest barrier to seeking support services.

A small portion of students (.29%) were not aware of any resources that they could utilize to help them cope with emergency resuscitations which is quite concerning as these individuals have no potential outlet to discuss their experiences. These students are perhaps the most vulnerable to depersonalization, burnout, and a loss of empathy given their lack of awareness with regards to support services.

The low awareness of resources available demonstrates that the current efforts to educate students about resources is not enough, or is not connecting with students in a meaningful way such that they have internalized the availability of these resources in case they need them. This indicates that relying on students to budget their time and follow through with these resources is not enough, and process improvement is needed in

the form of protected time and structured debriefing settings. If resources could be implemented in an efficient manner that does not burden the student (in particular in terms of time, given the vast requirements of clerkships) it is likely that utilization will drastically increase and could potentially help many students.

Student use of support services

Only 7.61% of students utilized a support service with the only services utilized being Yale Mental Health (50.00%), Mental health outside of Yale (16.67%), and a peer advocate (33.33%). All the students who utilized services found them to be helpful and would recommend them; however, the very small number of students who did utilize said services in conjunction with many of the respondents (including ones who do not utilize support services) believing a support service should be implemented may suggest that students who value services are not seeking them out, or believe there are too many barriers to access said services (as was mentioned in the narrative portion of the survey).

A challenging aspect of rotations is the time-consuming nature which may also contribute to low utilization and create a need for protected time. Several students suggested that protected time could be a helpful aspect in the narrative portion of the survey. It is important to consider that protected time should not merely be an added obligation but rather should replace a portion of the students required tasks for the clerkship for their well-being and continued academic success. In addition, there is a sampling bias in terms of these respondents as those students who seek out resources may inherently value them more thus using this small samples' perspective may represent a skewed preference for resources where 100.00% of them stated the resource was valuable.

Combatting burnout and developing coping skills is an important aspect of becoming a physician, thus having a place in the curriculum teaching these skills seems to be a natural alteration that should occur on the emergency medicine clerkship – a specialty which arguably experiences the most burnout [15-17]. By allocating specific time to acquiring these skills the student is not over-burdened and can still manage their time optimally for other endeavors (service preparation, the USMLE, personal time, family, etc.).

Student opinions on what they think would be helpful in terms of support services

Only 0.25% of respondents thought that an intervention for medical students when exposed to resuscitations would not be necessary. The remaining 99.75% all believed that some sort of intervention would be useful without any 1 category/type of intervention receiving a majority of support (see Table 13: Interventions Students Believe Would Be Helpful Post-Resuscitation) far exceeding our clinical threshold of 10%. The greatest amount of support was for debriefing with residents (16.21%), attendings (15.46%), and fellow medical students (15.34%). Yale Mental Health (12.22%) was also mentioned, but again, this resource brings up the concept of accessibility and the time it takes to get to Yale Health on a busy schedule.

Interestingly, meeting with the attending you worked with on service (10.72%) received less interest than meeting with other attendings (15.46%). This is likely attributable to the desire for anonymity and resources/individuals who are not involved with the student's grade. Similarly, students seemed to favor debriefing with individuals with whom they work with clinically with a desire to debrief with individuals closer to their own level of training (such as residents and medical students). Common themes in

the narrative response was that a trained debriefer, in particular, a resident or clinical individual not grading the student could be very useful. This further reifies that an individual not involved with the student's grade is preferable and that proximity in training/experience of the debriefer could be preferable and may be better able to empathize with the students.

The reason for these preferences is likely connected to empathy, fear of retribution, and efficacy. In terms of empathy, this centers on students preferring individuals who can understand their situation. Individuals who are clinically relevant (physicians, nurses), and the students age/level in training (fellow medical students and residents) likely will be better suited to understand and connect with the students. Similarly, students seemed to favor individuals who are not grading them which is quite understandable given that students may fear expressing weakness or a need for help if they feel it will make them seem less competent clinically and reflect on their grade and the feedback written in their standardized letter for residency.

Finally, a unique theme in the narrative portion was to interact with individuals specifically trained to debrief/intervene thus demonstrating that perhaps medical students are not necessarily valuing the current interventions (such as the end of clerkship discussion that occurs with 4th year medical students and residents, or debriefing during simulations) and prefer someone who can specifically deal with debriefing with a structured and effective format. This desire for efficacy supports the idea that individuals should be trained if they are to be a valuable tool for medical students.

The timeframes that said support services should be implemented

There was a general understanding that immediate debriefing may be challenge in

the emergency department as revealed in the narrative portion of the survey. In

conjunction with this idea, 45.61% of respondents felt that the most optimal time to

debrief would be with clinical individuals (residents, attendings, and nurses) at a point

that was convenient for the team (such as when less patients needed to be seen, or at the

end of a shift if necessary). The current role of debriefing in the emergency department

seems to be centered around extremely stressful events (events that would be stressful to

trained and regularly exposed attendings) and quality improvement (related to when care

went wrong and how to improve it) vs. a general practice of debriefing after codes or at

some regular time point which would be more useful to medical students and new

residents. Overall, students seemed to prefer proximity to the event for debriefing such

as immediately (29.25%), within 1 day (30.61%), and within 1 week (29.25%) of the

resuscitation. These results are consistent with our initial hypothesis (and exceed our

threshold of 10%) that students would prefer an intervention more proximate to their

exposure but understand that immediate debriefing may not always be plausible. It is

natural that individuals would feel that the time they would need said interventions would

be as close to the event as possible as it would be more relevant and would alleviate any

potential suffering/distress that may occur in the timeframe in which the student is

waiting to discuss the event with someone.

Medical Student Narrative Responses

The narrative response in the survey demonstrated common themes that were

broken down into 3 subcategories. We analyzed the text responses by identifying

common themes based on key terminology and the interpreted sentiment in these

responses; however, a standardized qualitative analysis was not implemented. The common categories were as follows:

1. Depersonalization is necessary/natural in a resuscitation and to be expected

2. Depersonalization occurred and was troubling to the student

3. Resuscitation was disrespectful to the patient and/or did not follow their wishes

Of the respondents to the narrative portion of the survey, 59.18% felt that depersonalization is necessary/appropriate in a resuscitation and to be expected, 34.69% felt that depersonalization occurred and found this troubling, and 4.08% thought the resuscitation was disrespectful to the patient and/or did not follow the patient's wishes.

This split between seeing depersonalization as necessary/natural and seeing it as problematic demonstrates a divide in the class and could also reveal that a standardized intervention after emergency resuscitations may not be warranted uniformly, but actually, may be more useful on a case by case basis (it could even depend on the individual's level of training).

Different framing of depersonalization could reflect training level and clinical maturity. For example, an individual who sees it as necessary/natural may understand that a patient's human traits and personal story must be abandoned or at least not prioritized in an emergency resuscitation to attempt to save their life. They may see it as natural, and accordingly, simply a part of a resuscitation. They may also implement depersonalization as a protective mechanism in order to avoid emotional pain and suffering associated with losing patients and witnessing death which would likely make their career difficult and likely increase their symptoms of burnout. On the other hand, a more novice physician (such as a medical student or a new resident) may see

depersonalization as defying the biopsychosocial model of medicine and thus

dehumanizing and inappropriate - perhaps interpreting depersonalization as callousness

and a lack of care rather than a facet of care in an emergency resuscitation.

Even for students who view the depersonalization that occurs as necessary or

natural and life-saving during a resuscitation, discussing how they felt after the

resuscitation may still be critical. Debriefings may be very useful even to the group that

finds resuscitations depersonalizing but necessary; however, if a standard post-

resuscitation intervention is not implemented, they may be self-conscious to pursue

debriefing of some sort on their own. Overall, a primary finding is that Yale medical

students are split when it comes to seeing depersonalization in emergency resuscitations

as problematic vs. necessary; however, a significant amount (> 10%) agree that an

intervention of some sort should be implemented. How to access those students who

actually need this intervention (including those who may be embarrassed/ashamed to ask

for help) vs. those who are truly fine with the event and coping well may be complicated

as we would not want to implement a mandatory intervention where only a certain subset

of students find it useful.

Limitations

Limitations of this study include that this survey was completed only at Yale School

of Medicine. The response rate for this survey was rather high with 215 of 400 medical

students responding for a response rate of 53.75%; however, many students did not reply

and thus their perspective could not be incorporated. It is possible that there is a selection

bias with students who opt into participating also embodying traits/qualities that would be

more prone to desiring debriefing and a post-resuscitation intervention, as involved

students who are interested in improving the clerkship by participating in this project may also desire more participation/involvement in other aspects of their training.

Future studies could offer participation in a survey perhaps at the end of clerkship meeting when all students are gathered, and protected time could be offered during this time so that even those students who may be less inclined to respond would be able to, thus offering a more diverse and complete perspective.

To protect student anonymity, the student's year in medical school was not collected as a piece of information, so it is possible that some of the students were pre-clinical when responding, or their experience with resuscitations was secondary to shadowing or the ultrasound pilot that takes place at the medical school. Regardless, their input was still utilized in terms of what they think would be useful in terms of an intervention as one of the aims of this study was student perception of support services. However, dividing students into clinical and pre-clinical could better characterize emergency resuscitation exposure at the medical school, and could also suggest the different requirements of these different groups of students without compromising student anonymity. For example, it may be more necessary to have post-resuscitation interventions to pre-clinical students or students who have just begun their clinical training than to 4th year students who are on their sub-internships and perhaps better at understanding the clinical context and coping with stress. Similarly, stratifying students based on intended specialty could also be useful where emergency medicine bound students may find resuscitations energizing and challenging vs. perhaps a pediatrics bound student who finds them dehumanizing and depersonalizing.

Future studies could identify the student's year in training, intended specialty, and

the previous rotations they had experienced in order to better assess their level of experience with regards to resuscitations. If a majority of respondents were pre-clinical students, it is possible that the demand for post-resuscitation interventions could be over-emphasized thus altering our results.

Another limitation of this study was the interpretation of the narrative/free text portions of the survey. No formal qualitative analysis was utilized though the comments were carefully reviewed and common themes were noted. Future studies could be improved by collecting a higher quality of data via instruments such as a focus group, and this data could be subjected to a more formal thematic abstraction.

It is possible that the external validity of this study may be limited due to the unique nature of Yale and the Yale system (no grades in preclinical years, emphasis on camaraderie, high emphasis on the biopsychosocial model of medicine, etc.). For this reason, this student population may be more inclined to desire interventions vs. other medical schools. Future studies could survey students at multiple different medical schools in different geographical regions in order to better characterize student perspectives across the country.

Summary & Recommendations

Given that 43.09% of medical students feel the department of emergency medicine is not offering enough support services, and 56.82% believe that another intervention/measure is needed in some way for student resuscitation exposure, our data far exceeds our clinical threshold of 10% (of students encountering depersonalization, finding it stressful, or desiring further support services) and supports re-evaluation of an

intervention on the part of the emergency medicine clerkship leadership to potentially implement a standardized support service.

The exact time frame for when the intervention would be optimal is unclear; however, student preference is for immediately after the event (21.05%), within 1 day of the event (30.61%), or within 1 week of the event (29.25%). In the setting of a preference for peers, an individual clinically involved, and someone who does not grade the student, a trained senior resident (PGY-3 or 4) liaison thus seems like a very viable and cost-effective way to support students who have been exposed to resuscitations and could benefit from debriefing. This aligns with student requests in the narrative portion of the survey. Interventions that are mandated with trained personnel could be costly; however, residents make optimal debriefers for the following reasons:

1. Proximity of age and training to medical students (seeing them as peers)

2. Ability to have residents not involved in grading be the debriefers (eliminates fears of discussion with the clerkship director).

3. Allows for flexible time frames with on shift coverage and debriefing after the shift with residents.

4. Finite pool of 30 PGY-3 and 4 residents to train in critical incident debriefing

Residents could be trained in debriefing and given certificates for completion that they could put on their curriculum vitae, and compensated slightly more to fill this role. In addition, residents provided this valuable skill set, under a "train the trainer" model, could bring this to other institutions after leaving Yale. In this way, value is created for both the residents and the medical students creating an optimal and sustainable intervention.

It is also paramount given medical student responsibilities and the time-demanding nature of many services that this time be protected and built into the rotation rather than an optional external service that students could seek out on their own time. By streamlining the process and minimizing student burden it is expected that utilization of said services will drastically go up. Yale medical students highly prioritize grades and USMLE scores, thus their external obligations and necessary study time may be higher than other medical schools. For this reason, protected time becomes an even higher priority in this population and reducing other requirements may be necessary for effective implementation of said intervention.

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Appendices

Appendix 1: Medical Student Survey

This survey should take < 5 minutes to complete.

This survey will assess your experience surrounding emergency resuscitations or, "codes." The information gathered will be used to improve medical education at Yale. All Yale medical students who have completed an Emergency Medicine/Trauma rotation are eligible.

Your responses are 100% anonymous and will not affect your relationship with Yale School of Medicine or your grade on the rotation.

The deadline for responding to this survey is January 1, 2018.

Thank you so much for your time!

1. Have you been exposed to an emergency resuscitation while in medical school?

    a. Yes

    b. No

2. How many times have you been exposed to an emergency resuscitation?

    a. 1

    b. 2

    c. 3

    d. 4

    e. 5+

3. Under which circumstance were you exposed to an emergency resuscitation (check all that apply):

a. Emergency medicine clerkship

b. Emergency medicine sub internship

c. Trauma surgery

d. Other (please describe):

4. In what year were you exposed to an emergency resuscitation on your rotations at

   Yale – check all that apply

   a. 2010

   b. 2011

   c. 2012

   d. 2013

   e. 2014

   f. 2015

   g. 2016

   h. 2017

   i. Other (please specify):

5. What was the patients' presenting complaint(s)? (please describe briefly e.g.

   "gunshot wound." For all patients.):

   a. Cardiac

   b. Neurologic

   c. Trauma

   d. Other/not-specified: free text

6. What types of interventions were performed (to the best of your recollection)?

   Please check all that apply:

a. Chest compressions

b. Cardioversion or defibrillation

c. Intubation

d. Massive transfusion process

e. Other (please describe):

7. How were you involved in the emergency resuscitation (please describe briefly,

e.g. "observed," or, "got equipment for resident," etc.

a. Observed

b. Performed chest compressions

c. Got equipment

d. Assisted with procedures

e. Other (please describe)

8. Did you feel that the patient was depersonalized during the code?

Depersonalization is defined as a loss of the patient's individual traits that makes

them a unique person (for example seeing the patient as an object to be

resuscitated versus as a parent/family member or peer).

a. Yes

b. No

9. Please describe how you feel the patient was depersonalized – you may discuss

this as briefly or as in depth as you would like:

a. Answer: free text

10. Have you ever used a support service at Yale and discussed your experience with

regards to an emergency resuscitation?

a. Yes

b. No

11. If so, which one have you used:

    a. Free text answer

12. Did you find it helpful?

    a. Yes

    b. No

13. Would you recommend it to other students?

    a. Yes

    b. No

14. What most accurately describes when you used this support service?

    a. Immediately after the event

    b. At the end of the clerkship

    c. Within 1 day of the event

    d. Within 1 week of the event

    e. Within 1 month of the event

    f. Within 1 year of the event

    g. Some other timeframe (please describe):

15. What supportive interventions are you aware of that exist for medical students who are exposed to stressful situations?

    a. Meeting with the Dean of Student Affairs (Dean Angoff)

    b. Meeting with the clerkship director

    c. Meeting with your attending

    d.   Meeting with your academic adviser

    e.   Yale Mental Health

    f.   Meeting with a chaplain

    g.   Other (please describe):

16. What supportive interventions do you think would be helpful for medical students?

    a.   Meeting with the Dean of Student Affairs (Dean Angoff)

    b.   Meeting with the clerkship director

    c.   Meeting with your attending

    d.   Meeting with your academic adviser

    e.   Yale Mental Health

    f.   Meeting with a chaplain

    g.   Debriefing session with attendings

    h.   Debriefing session with residents

    i.   Debriefing session with fellow medical students

    j.   Other (please describe):

17. Do you feel the Department of Emergency Medicine offered adequate support and opportunities for you to discuss stressful experiences when on your rotation?

    a.   Yes

    b.   No

18. Should the Department of Emergency Medicine offer a support measure for students exposed to emergency resuscitations that is not currently implemented/accessible?

a. Yes

b. No

19. What interventions/supportive measures do you think should be offered by or made more accessible by Yale School of Medicine or the Department of Emergency Medicine to assist students with processing emotions after a code?

a. Answer: free text

20. If a supportive measure/intervention were to take place, within what timeframe do you think it would be the most helpful?

a. Immediately after the event

b. At the end of the clerkship

c. Within 1 day of the event

d. Within 1 week of the event

e. Within 1 month of the event

f. Within 1 year of the event

g. Some other timeframe (please describe):

Appendix 2: Student Outreach Email

Hello Classmates,

I am conducting my thesis on emergency resuscitations and patient depersonalization. I am looking at how students feel with regards to codes (emergency resuscitations), and how they feel with regards to patient depersonalization, and if they think there are any changes or interventions that could be helpful. All medical students are eligible (even if you haven't seen a code) and if you are interested, it should take 5 minutes or less. This survey is completely anonymous and completing it would be immensely helpful to me!
Link to the survey:

https://yalesurvey.qualtrics.com/jfe/form/SV_4Od9iQrJjT8u0vz

Thanks!

Damian Apollo

If you have any questions, please contact me at damian.apollo@yale.edu.

Adult Consent/Adolescent Assent for Participation in a Research Project

200 FR 2 (2014-2)

<u>*Study Title:*</u> Depersonalization in the Emergency Department

<u>*Investigator: Damian Apollo*</u>

Funding Source: Yale Student Research Fellowship

HSC #:

Purpose:

You are invited to participate in a research study designed to examine exposure to

emergency resuscitations on the Emergency Medicine Clerkship/Sub-Internship and your

experiences and opinions surrounding patient depersonalization and support

services. Depersonalization is defined as a loss of the patient's individual traits that

makes them a unique person (for example seeing the patient as an object to be

resuscitated versus as a parent/family member or peer). You have been asked to take part

because you are a Yale medical student who has valuable insights that can be used to

better understand student's needs and improve the Emergency Medicine rotations at

Yale.

Procedures:

If you agree to take part, your participation in this study will

involve completing a completely anonymous survey that inquires about your exposure to

emergency resuscitations, and your opinions regarding patient depersonalization and

support services. We anticipate that your involvement will require less than 5

minutes. You will not be compensated for your participation, but your participation will

be used to improve the Emergency Medicine rotations at Yale.

Risks and Benefits:

You may experience psychological distress when recalling emergency resuscitations when

participating in this study. This risk is anticipated to be minimal.

Although this study will not benefit you personally, we hope that our results will add to

the knowledge about Emergency Medicine education at Yale, and the information can be

incorporated to improve the Emergency Medicine rotation at Yale.

Confidentiality:

All of your responses will be anonymous. Only the researchers involved in this study and

those responsible for research oversight will have access to any information that could

identify you/that you provide. Data will be collected anonymously and stored via the

Yale Qualtrics Survey.

Voluntary Participation:

Your participation in this study is voluntary. You are free to decline to participate, to

end your participation at any time for any reason, or to refuse to answer any individual

question without penalty. Your decision whether to participate or not will not affect your

relationship with Yale School of Medicine or the Emergency Medicine rotation.

Questions:

If you have any questions about this study, you may contact

the principal investigator, Damian Apollo phone number: 520-404-1009

or email: damian.apollo@yale.edu.

If you would like to talk with someone other than the researchers to discuss problems or

concerns, to discuss situations in the event that a member of the research team is not

available, or to discuss your rights as a research participant, you may contact the Yale

University Human Subjects Committee, 203-785-4688 human.subjects@yale.edu.

Additional information is available at http://your.yale.edu/research-support/human-

research/research-participants

Agreement to Participate:

I have read the above information, have had the opportunity to have any questions about

this study answered and agree to participate in this study.