Effectiveness of Emergency Department Staff Coping Post Implementation of a Debriefing Educational Session

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Abstract

Emergency Department (ED) staff members encounter many traumatic events (cardiac arrests, trauma, child abuse, sexual abuse, violence, etc.) throughout their careers. These traumatic events can be emotionally and physically challenging on staff members. Not all EDs have a formal debriefing program in place to assist staff members to cope with difficult situations that they may experience. How susceptible are ED staff members to adopt or develop negative coping mechanisms post traumatic event without a debriefing program? A survey was distributed to all 60 ED staff members (comprised of MD, PA, CRNP, RN, ED tech, and secretary) at a Satellite ED in Southern New Jersey to evaluate the current effectiveness of coping. An educational session on coping mechanisms was presented to staff members, with a post-survey to follow the educational session to evaluate learning and effectiveness of new methods of coping.

Introduction

Emergency Department staff members encounter many traumatic events (cardiac arrests, trauma, child abuse, sexual abuse, violence, etc.) throughout their careers. These traumatic events can be emotionally and physically challenging on staff members. Not all EDs have a formal debriefing program in place to assist staff members to cope with difficult situations that they may experience. These debriefing programs allow for the staff members to effectively discuss the traumatic event and their emotions. They give staff members an outlet to assist each other cope with those emotions. The model used for this QI study was a structured scripting model that was tailored to the ED based off of participants responses on a survey. Healy and Tyrrell's (2013) study found that the majority of their participants ranked debriefing after a stressful event in EDs as 'important' or 'very important'. Healy and Tyrrell (2013) also found that

more than half of the participants noted that they had never been offered debriefing or provided with the opportunity to participate in debriefing; some even noted they did not know if there was the option to have a debriefing.

Debriefing is an organized group discussion aimed at improving patient care, processes and teamwork (Kessler et al., 2015). Debriefing is most effective when completed in a group session (Mitchell, 2008). Mitchell's (2008) Critical Incident Stress Debriefing (CISD) model is one of the most well-known models of debriefing. There are eight steps to Mitchell's CISD model: Introduction, Facts, Thoughts, Reactions, Symptoms, Teaching, Re-entry, and Follow up. In the Introduction phase, participants are introduced to the process and the event in question. The Fact stage discusses only the facts of the event. The Thoughts phase is where discussion occurs regarding the thought process of the event. The participant's reactions to the event are discussed next. The Symptom phase discusses how the thoughts and the reactions take their toll on the participant. Teaching participants how to react appropriately to these thoughts, reactions and symptoms is the next stage, followed by Re-entry: returning to discussion about the initial event and allowing questions. Finally, is Follow-up, where snacks are provided so the group can decompress and socialize in a form not related to the event (Mitchell, 2008). Another suggested model that was found to work well by Berg et al. (2014) was using a structured scripting model that is designed and tailored to the specific unit based off unit needs for debriefing.

Negative outcomes may result if ED staff members are not provided supportive resources when it comes to coping with the proceedings of the traumatic event (Healy and Tyrrell, 2013). Problems such as alcoholism, burn out, post-traumatic stress disorder (PTSD), drug abuse, lack of empathy, difficulty sleeping and eating, and loss of staff members due to resignation can occur (Lavoie, Talbot, & Mathieu, 2011). Defective coping mechanisms can affect anyone at

any time and can contribute to poor patient care and impact on patient safety (Zavotsky and Chan, 2016). An effective and standardized method for debriefing needs to be available for ED staff members. With an appropriate program in place, staff morale and retention, and performance related to patient care outcomes may be improved. Staff members may have an appropriate outlet for their feelings and emotions; staff retention could be increased, and staff attitudes towards their jobs may improve. Healy and Tyrrell (2013) found that patient safety and patient care may be positively affected when staff attitudes are improved.

Background and Significance

When patients seek treatment in the ED for a medical emergency, the expectation is that the staff members will work together effectively as a team to provide the best care for the patient. When staff members work together effectively, patient care is improved. Berg et al. (2014) state that debriefings "provide team members the opportunity to immediately reflect on performance, identify errors, and discuss areas for improvement thereby improving interdisciplinary education and teamwork" (p. 201). When used as an effective coping method, debriefings assist ED staff members to work together more efficiently as a team after experiencing stressful/traumatic events. Lavoie et al. (2011) found that staff being supported socially and having the ability to freely discuss events with their peers is significant. A study by Kessler, Cheng, and Mullan (2015) found that it is essential for proper management of emergency medicine to communicate effectively after critical events in order to improve the care of future patients, especially when performed in a group setting.

In the Institute of Medicine (IOM) report To Err is Human: Building a Safer Health System (2000), one of the recommendations was to 'Create Safety Systems in Health Care Organizations.' Five guiding principles we offered to create this safety system: "(1) providing

leadership; (2) respect for human limits in the design process; (3) promoting effective team functioning; (4) anticipating the unexpected; and (5) creating a learning environment" (p. 166). An efficient and well-rounded debriefing program addresses all five of these principles, and the implementation of this type of program may improve the ED staff members' functionality and improve patient safety (Healy and Tyrrell, 2013). In a study by Allen et al., (2013) it was found that when emotional distress of ED staff members was not addressed, there was a negative effect on healthcare staff members' physical, emotional, and behavioral health as well as a negative impact on delivery of care.

Implementation of a debriefing type program is not universal. Nadir et al., (2017) conducted a study on debriefing in the ED and found that "with respect to whether respondents had been formally trained in any debriefing technique, only 14% reported affirmatively… there was significant interest in formal debriefing training in the group surveyed" (p. 148). Kessler et al.'s, (2015) study also supported this and found that most of the health care staff members involved in the study demonstrated the importance of debriefing and wished to have a debriefing program that was structured; but they also noted that lack of time, not having trained facilitators, or a proper debriefing setting were some barriers that prevented debriefing.

Negative coping mechanisms have been studied in ED staff members, and there is a noticeable difference between the ED and other departments. "PTSD indicators have been recognized in nurses: Up to 33% of ED nurses screen positive or meet indicators for symptoms of PTSD, compared to 14% in the general nursing population" (Schwab, Napolitano, Chevalier, & Pettorini-D'Amic, 2016, p. 250). Not only is PTSD addressed, but burnout and stress effects staff members as well. A study by Canadas-De la Fuente et al., (2015) extreme amounts of stress

can lead to burnout in nurses and that the nurses who do experience burnout, express that burnout in the form of emotions, attitude, behavior and psychosomatic.

Not only can debriefing programs help staff members cope appropriately and in a positive way, but they can improve clinical practice. "After clinical cardiopulmonary resuscitation events, debriefing programs have demonstrated improved rate of return of spontaneous circulation, neurologic outcomes, hands-off compression times, and time delay to first compression." (Kessler et al., 2015, p. 690). Healy and Tyrrell's (2013) study found that the participants described their perceived purpose of debriefing as "97 (94 per cent) participants said it can provide staff with emotional or psychological support, 44 (43 per cent) said it can help staff improve or review clinical practice, and 18 (17 per cent) said it can foster team spirit" (p. 35).

When staff members are mentally in the right state of mind and are satisfied with their job, not only is patient safety and patient care improved, but healthcare costs are decreased (Van Osch, Scarborough, Crowe, Wolff, and Reimer-Kirkham, 2018). When staff members burn out from PTSD, their longevity on the unit is greatly decreased and staff turnover is higher, which is a great cost to a unit (Van Osch et al., 2018). Zavotsky and Chan (2016) found in their study that when exposed to high levels of stress and emotional conflict, a negative work environment forms, job dissatisfaction occurs, as well as early resignation from positions. Van Osch et al., (2018) stated that "turnover is a multi-factorial process that involves nursing leadership, nurses' work relationships with others, unit characteristics and perceptions of the practice environment as well as issues related to burnout and job stress" (p. 1210). Van Osch et al., (2018) also found that to replace just one nurse can cost approximately $40,000.

It is necessary to determine and implement a debriefing program for ED staff members that is suited to address their emotional needs and patient satisfaction and safety. This may reduce staff member burnout and negative coping mechanisms. In turn, this may increase patient satisfaction, safe patient care and decrease costs and burden on the healthcare system. Berg et al., (2014) noted that after an implementation of a debriefing program "improvements were observed in unit teamwork (17%), workload (10%), and hours (10%) related to patient safety. In the post-surveys, respondents were more agreeable in patient safety improvements (9% improvement) and the evaluation of their effectiveness (18% improvement)" (p. 203).

Needs Assessment

There is a deficiency of literature on what the best format for a debriefing program should be, and what the staff members feel is most effective to be addressed during the debriefing period. Paterson, Whittle and Kemp's (2014) study considers Critical Incident Stress Debriefing (CISD). Paterson et al., (2014) note that CISD was initially designed to help prevent PTSD and identify individuals at risk. The process follows an outline of looking back at the event in question cognitively, then facing the emotional aspect, and finishing the session by returning to the cognitive aspect. Education is also incorporated into the process. "Ultimately, the process is an opportunity for the group to discuss their thoughts and emotions relating to the trauma in a controlled, rational manner" (Paterson et al., 2014, p. 27). Paterson et al. (2014) discuss how this method of debriefing is not the best method to address the PTSD aspect in ED staff when not performed in a group setting. Specifically, Paterson et al. (2014) state "research has revealed that the CISD model, as currently used in the emergency services, provides little to no benefit for psychological health… no apparent difference in PTSD symptom change between control participants and participants who had been debriefed after trauma" (p. 28).

If staff members are unable to mentally decompress, and they hold on to their negative coping mechanisms, then more staff members may develop symptoms of PTSD. The importance of determining and implementing the most effective version of a debriefing program is to allow the staff members to benefit from the experience and learn how to decompress in a positive way (Zavotsky and Chan, 2016). In doing so, patient safety and staff effectiveness may be improved. In a study by Wolf et al., (2016) the researchers state that the current research shows a direct correlation between moral distress and symptoms of burnout, retention of nurses, and job satisfaction, with an emphasis on more research into these topics to determine how this effects care of ED patients and the nursing staff.

Problem Statement

The implementation of debriefing programs is not consistent in EDs, which leaves staff members vulnerable to negative coping mechanisms. When staff members develop negative coping mechanisms, not only is patient care and safety affected, but also negative effects on the staff members themselves and the healthcare system occur. These findings are noted in the study by Schooley et al. (2016), where the results showed that all ED staff members that were involved in the study experienced burnout in the range of moderate to high levels.

Clinical Question

How susceptible are ED staff members to adopt or develop negative coping mechanisms post traumatic event without a debriefing program?

Aims and Objectives

At the end of the implementation of the debriefing educational session, ED staff members were able to: recognize PTSD/negative coping signs and symptoms, verbalize and understand strategies of debriefing to avoid negative coping, understand how negative coping can negatively

affect the work environment and patient care, understand the importance of debriefing post traumatic events, and commit to creating a healthier and safer work environment. Healy and Tyrrell (2013) noted that ED staff members are people who need to take care of their emotional and physical well-being in addition to taking care of their patients' well-being. In order for ED staff members to do that, they need to first acknowledge their own needs and have the opportunity to address them and be supported in the process.

Review of Literature

The basis for the current Quality Improvement (QI) project is described well by Schooley, Hikmet, Tarcan, and Yorgancioglu (2016):

> Provider burnout has been associated with the need to make critical decisions without complete information, repeated exposure to life threatening and other traumatic events, high complexity of disease combined with the need for rapid decision making, concerns over litigation risk, provider–patient as well as provider–provider dissonance, and mounting pressure regarding work quality, patient safety, and performance (p. 1).

Schooley et al. (2016) also note that their results found that all ED staff members experience burnout, even if at different levels.

Burnout of ED staff members can lead to symptoms of PTSD. Schwab et al., (2016) found that ED nurses responded to having PTSD indicators in their study at a higher rate than other nurses involved. Lavoie et al., (2011) also noted these findings, and suggested the implementation of strategies to recognize PTSD symptoms and develop support programs for staff members to help with positive methods of coping.

Wolf et al., (2016) found that participants in their study did resort to alcohol, food, or medication as a negative coping mechanism. It was also found by Wolf et al. (2016) that staff

members used exercise, psychological counseling, staff debriefings, and stress management as a positive method of coping.

Trust and respect for self and co-workers is essential in order to understand one another and support each other. Van Osch et al. (2018) found that trust and teamwork were integral in their study on ED nurses and job satisfaction. Allen et al., (2013) found the need for further exploration on trust, respect and teamwork due to the high cost of ED staff turnover without those factors.

Debriefings are implemented to improve patient care, and improve participants' methods of coping and understanding. Mullan, Wuestner, Kerr, Christopher, and Patel (2013) studied debriefings and noted a positive impact on patient care. When discussing debriefing, Mitchell (2008), developed a debriefing model called CISD and states "the best effects of a CISD, which are enhanced group cohesion and unit performance, are always achieved when the CISD is part of a broader crisis support system" (p. 2). Tuckey and Scott (2014) studied CISD and verified that the model worked most effectively when performed as a group. Berg et al. (2014) found positive debriefing results when a self-made structured debriefing template was used that fit their unit.

Berg et al. (2014) note that after their study all participants that were involved in the survey reported positive feedback in relation to the debriefing program as well as with their methods of coping, teamwork function, and job satisfaction. The importance of debriefings is recognized by healthcare providers according to Kessler et al., (2015), however there are also barriers to implementation: time, misunderstanding, lack of available system, and lack of education on the process. Healy and Tyrrell (2013) also studied the barriers to implementation of a debriefing program. Nadir et al., (2017) studied debriefings with ED staff members and

noted the importance of debriefing in a group format. Eppich et al., (2016) discuss when a debriefing should occur, and not limiting debriefings to just one specific event, that debriefings can be beneficial in many events.

Paterson et al., (2014) recommends the development of a debriefing program that not only addresses the symptoms of PTSD, but include how to cope in a positive way and how to work together as a team. Zavotsky and Chan (2016) determined that "curriculums such as AACN's (2008) "The 4 A's to Rise Above Moral Distress" have been demonstrated to be helpful and can be useful to most specialties, not just critical care nurses. The 4 A's is a framework to help address moral distress and make changes and consist of the following: ask, affirm, assess, and act" (p. 144). McCue (2010) discusses the four steps to the AACB framework. The first step, ask, is promoting awareness of the event in question. Affirm is the second step, where recognition of one's moral distress and the professional responsibility to acknowledge the moral distress is emphasized. The Assess stage is where the risks and benefits of doing what is right are weighed. The Act stage is the action step, the follow through in response to the event (McCue, 2010).

The above review fully contributed to the design and implementation of the current project, and helped to guide the development of the educational session for the best possible outcome for both staff members and patients. Refer to Appendix A for graphics.

Theoretical Framework

Jean Watson's Theory of Human Caring was used due to the values and concepts that Jean Watson found to be important to provide care to all patients. The core concepts are: (a) a relational caring for self and others; (b) transpersonal caring relationship; (c) caring occasion/caring moment; (d) multiple ways of knowing; (e) reflective/meditative approach; (f)

caring is inclusive, circular and expansive; and (g) caring changes self, others, and the culture of groups/environments (Watson Caring Science Institute, 2010). To appropriately meet these core concepts when caring for patients, these concepts first need to be used by staff members for caring for self.

Each of Jean Watson's core concepts can be related back to the caregiver and caring for one's self first. Once a healing, helping and trusting environment is set up for staff members, which is the aim of the project, then, and only then according to Jean Watson, can the staff members move forward to provide a caring and healing environment for the patient and their family.

Key points from each of the concepts of Jean Watson's theory were used in design of the survey and the intervention/educational session.

The theoretical framework used to guide the project was the IOWA Revised model. This framework was recently updated to accommodate the recent changes in health care in regards to EBP implementation. The updated model starts with identification of the issue or problem, states the question, asks if the topic is a priority, if yes, then moves on to formulating a team. Assembling and appraising the evidence is the next step. If there is sufficient evidence, a design and pilot are created. If change is appropriate for implementation in practice, then implementation and plans for sustainment are put into place. Lastly is dissemination of the findings. (Iowa Model Collaborative, 2017). In relation to this QI project, the identified problem is lack of a debriefing program, the question is: How susceptible are ED staff members to adopt or develop negative coping mechanisms post traumatic event without a debriefing program? Based off a preliminary literature review, the debriefing in the ED was found to be a priority. The team was formed including the PI, the Chair and the Team Member. Assembling and

appraising the evidence was completed during the complete literature review, which provided enough evidence for the design and implementation of the project. The results showed that there were changes in ED staff members' perception of debriefing and positive vs coping mechanisms. There is a need for further QI work with a longer implementation period for sustainment of the findings to change the work environment. Dissemination is to present the findings to the nursing research council and hospital management at the project site.

The application to the current project is attached as Appendix B.

Methodology

The project utilized a quasi-experimental study approach with a survey distributed to the participants before and after the implementation of an educational session on debriefing and coping techniques.

The setting for this project was the Satellite Emergency Department (ED) of a suburban hospital in Southern New Jersey. This is an Emergency Department that serves the local community and surrounding areas. The average census of this ED is approximately 60 patients per day with a wide range of acuity. This site did not have a debriefing program.

There are a total of 60 ED staff members at this site that are comprised of MD, PA, CRNP, RN, ED tech, and secretary. The study population includes physicians, nurse practitioners, physician assistants, registered nurses, nurse techs, and secretaries that work in the satellite ED. This sample population was chosen because all the caregivers in the ED are exposed to traumatic events and may develop negative coping mechanisms. All the above staff members were invited to participate in the study. Using Raosoft, Inc. (2004) to calculate a priori power analysis for sample size with a 5% margin of error and a 95% confidence level, the required sample size was 53 participants.

Determining and implementing an effective debriefing program was accomplished by creating a survey that was distributed to the ED staff members (MD, CRNP, PA, RN, ED Tech, and ED secretaries) that assessed their coping mechanisms, how well they feel they cope, as well as address their feelings and behaviors related to codes and debriefings. After data from the survey was obtained, reviewed, and analyzed, an educational debriefing session was developed that addressed the main areas of concern that were found to be at high risk on the survey. This educational session was made available for all ED staff members to attend and an evaluation was given that assessed their comprehension of the material.

Delivery of information for subject recruitment was through email and in-person discussion. In person discussion took place on the unit and emails were sent to all staff members' company emails by the principle investigator (PI). An initial email was sent out followed by 3 reminder emails. Total time frame for recruitment was 2 weeks. Participants were provided with contact information (email and phone) of the PI if they had any questions or concerns. Participants were notified that participation was voluntary and would not affect patient care or their daily responsibilities. Copies of survey can be found in Appendix C and recruitment materials can be found in Appendix D. Consent materials can be found in Appendix E.

The possible risks or harms that could have come from the project were that there is a negative psychological effect from speaking about and/or answering questions related to PTSD, coping mechanisms, family/work life and how to adjust current practices. This could have elicited troubled feelings or experiences that could have made participants sad or upset. If needed, participants were instructed to reach out to [redacted] or

[redacted] This is a program sponsored by the implementation site that offers counselling and emotional therapists to staff members. This study posed minimal risk.

There was not a financial impact on the participant, there was no cost associated with participating, and there was no compensation for participation. There was, however, light refreshments provided at the education session.

The study interventions were as follows. The initial email was sent out to all ED staff members (MD, PA, NP, RN, ED tech, secretary) introducing the project and requesting their participation. Once participation was agreed upon, the consent was distributed to all participants. Participants were informed that participation was anonymous and that they had the ability to retract their participation at any time. After participants had been consented, the anonymous pre-survey was distributed to all participants. After two weeks, the pre-survey results were tabulated to determine staff member's knowledge of debriefing, knowledge of coping strategies, current strategies of coping and if they had negative or positive coping mechanisms. The focus of the current study was to move away from negative coping behaviors and develop positive behaviors, along with instilling a baseline knowledge of debriefing and techniques.

An education session about debriefing strategies; positive and negative coping mechanisms and how this affects ED staff members' work/life balance; and how participants could help each other was developed and presented to the staff members. This educational session was offered at four different dates and times in order to accommodate the different shifts and staff schedules. This schedule allowed everyone who participated to have an opportunity to attend. A debriefing template was provided to participants during the educational session along with instructions on its use. Participants were asked to utilize and adjust the template for a time

frame of six weeks. At the end of the six week time period, the same survey that was presented to ED staff members initially was presented again for staff to complete.

Outcomes were measured using SPSS statistical analysis software. The surveys were a Likert scale ranging from 1 to 5. The survey was adapted based off the surveys used by Berg et al. (2014) (researcher-developed tool), Zavotsky and Chan (2016) (Moral Distress Scale-Revised), and Wolf et al. (2016) (open ended interview questions). The surveys were anonymous, the only data that was asked of the participants was their provider status and years of ED experience. Survey can be found in Appendix C.

The timeline for the project can be found in Appendix F.

The estimated costs of the project were of the Principal Investigator's time. Educational power points were presented electronically with hard copies left on the unit for future reference. The surveys were printed by the Principal Investigator (PI). The PI was responsible for the cost of printing the paper copies and supplies. The PI was also responsible for the SPSS software. There was not any compensation given to the participants. A light refreshment was served during the educational session, which was provided by the PI. The budget can be found in Appendix G.

Data Maintenance/Security

Participants were not required to disclose any identifying data, and there was not a need for the surveys to be identified in any way. Data from the surveys was be stored on the PI's personal computer which is password locked, and the PI only has access to the computer. Upon completion of the project, closure of the IRB, and final writing of the manuscript, all data will be destroyed in accordance with Rutgers University guidelines.

Results

Descriptive statistics were used to describe the staff members who participated in the project. Non-parametric statistics (paired-samples t-test and Cronbach's alpha) were used to determine the differences between the pre-survey and post-survey data based off provider position held and years of experience. The statistical software program SPSS was used for completing the data analysis.

A total of 46 employees participated in the study who completed both pre and post surveys consisting of six physicians, five PA/APRN's, twenty-four nurses, eight techs, and three secretaries. The years of experience ranged from less than one year to 43 years.

Results of the paired-samples t-test were mixed. Statistical significance ($p < 0.05$) was found for the questions of: Effectiveness of current debriefing process pre vs. post intervention, 95% CI [0.21458, 0.74194] $p = .001$; Effective education post critical event pre vs post intervention, 95% CI [0.23600, 0.89443] $p = .001$; and Sufficient resources at work for support pre vs post intervention, 95% CI [0.03933, 0.43893] $p = .02$. These three questions that did score statistically significant are three questions that pertain to debriefing strategies and their effectiveness. The remainder of the questions which were related to the categories of emotional support, positive and negative coping and staff burnout did not score statistically significant. See Appendix K for table graphic.

The Cronbach's alpha test was used to determine the reliability of the survey that was created and used. The first set consisted of four questions that related to debriefing strategies and effectiveness. These questions had a high level of internal consistency as found by a Cronbach's alpha of 0.897 (Appendix L). The next set consisted of ten questions that related to emotional support. These questions had a high level of internal consistency as found by a

Cronbach's alpha of 0.886 (Appendix M). The next six questions were related to coping, and were found by a Cronbach's alpha to have a high level of internal consistency of 0.752 (Appendix N). The final seven questions were related to burnout, and were found by a Cronbach's alpha to have a high level of internal consistency of 0.728 (Appendix O).

There was an opportunity for participants to comment on their own personal coping mechanisms both pre and post educational session. The responses that were provided did show a shift from negative coping techniques to more positive techniques. These responses can be found in the table in Appendix P.

There were some limitations noted in the study. The required number of participants needed of 53 was not met, there were only 46 participants that completed both pre and post surveys. This may have been due to the resignation of some staff members during the study period. The initial proposed time frame had to be shortened due to unforeseen circumstances that the unit was facing and could not support the project any longer. This did not allow for the participants to have as much time implementing the materials provided in the educational session.

Discussion

The implications for clinical practice based off of the results of the study show that the debriefing educational session was effective in terms of providing a structured debriefing and improving coping mechanisms; implementation of a debriefing program should be considered. However more work is needed to determine if a longer study time frame would lead to improvements in emotional support and staff burnout.

There is not enough statistically significant data, however, the study was evaluated based off of a change in thinking and behavior of the ED staff members towards debriefing and

positive coping mechanisms, which the change in responses was positive overall. Staff recognition of burnout was higher post intervention, which leads to improvement of staff recognizing burnout post educational session. These changes can lead to implications for healthcare policy at this time. With future work on improving debriefing in the ED, policies specific for an ED debriefing process could be implemented. Potential implications of decreased cost to the hospital system due to more satisfied staff, leading to less turnover, improved patient care, safety and satisfaction could be achieved with improvement of the work environment for ED staff members. The results do have a positive implication for education of the ED staff members on debriefing importance and techniques, coping mechanisms, and creating a supportive environment for each other.

Plans for Future Scholarship

The plan for future scholarship is to present the project and the findings to the nursing research council and to hospital management at the project site. Even though not all categories of the project were found to be statistically significant, the debriefing outcomes were and implementation of a debriefing program should be considered. More time should be dedicated to determine the effectiveness on coping and improving the ED work environment.

Conclusion

The goal of the project, and how the project was evaluated is: (a) that staff members have an increased knowledge of debriefing strategies and their importance; (b) staff members can recognize the difference between positive and negative coping; (c) staff members are able to recognize how negative coping can carry over into both home and work life; (d) and staff members understand the importance of and know ways to help create a healing environment for each other before they can care for their patients.

This was determined by a positive change/ statistical significance in the responses related to debriefing strategies and their importance (Appendix K). The project in terms of: staff members understanding the importance and knowing how to create a healing environment for each other at work and home was not found to be effective.

Evaluation of recognizing the difference between positive and negative coping mechanisms and recognizing how negative coping carries over into home life was found to be effective based off of the free text responses provided on the survey.

A positive change in responses was used as the evaluation factor because the purpose of the project was a change in thinking and behavior of the participants. A direct response from the participants, stating that they did adopt the change, and that the change was effective, was the best way to measure while keeping the information anonymous.

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Appendix A

EBP Question: How susceptible are ED staff members to negative coping mechanisms post code without a debriefing program?

Date: 2/16/2019

Article #	Author & Date	Evidence Type	Sample, Sample Size & Setting	Study findings that help answer the EBP question	Limitations	Evidence Level & Quality
1	Walter J Eppich, Paul C Mullan, Marisa Brett-Fleegler, Adam Cheng 2016	Literature Review	N/A	The authors discussed the importance of debriefing, and not just implementing after critical events, but also to incorporate it throughout practice on a regular basis. This makes staff more comfortable with the process. It was also mentioned that research has shown that peer led debriefings may allow staff to be more open with each other and discuss more.	Non-research study	V A
2	David O. Kessler, Adam Cheng, Paul C. Mullan 2015	Clinical Practice Guideline	N/A	This is a review of literature that developed guidelines and recommendations for implementation of a debriefing program in emergency departments. The many elements and requirements of debriefing are discussed, with physicians providing their personal experience of what works, what doesn't work, and what needs to be implemented.	Non-research study	IV, A

3	Nadir, Nur-Ain, Bentley, Suzanne, Papanagnou, Dimitrios, Bajaj, Komal, Rinnert, Stephan, Sinert, Richard	Systematic review	4 large, high volume, academic EM residency programs in New York City Convenience sample of 300 physicians	Emergency physicians in the study reported that in the large teaching hospitals, debriefings are completed, however they are not consistent and there was no training provided on these debriefings. It was also found that further research is needed on what is the best debriefing system to use.	Self reporting bias, limited response rate, not generalizable	III, A
4	Paul C Mullan, Elizabeth Wuestner, Tarra D. Kerr, Daniel P. Christopher, Binita Patel	Quality Improvement	N/A	Barriers to why debriefings are not carried out Noted that there are no qualitative debriefing tolls for the ED at time of publishing The DISCERN debriefing model was implemented and discussed Emotional aspect and team work are not addressed on the DISCERN form and found that those topics need to be worked into a program.	Non-research	V, A
5	Gina M. Berg, Ashley M. Hervey, Angela Basham-Saif, Deanna Parsons, David L. Acuna, Diana Lippoldt	Quasi Experimental	1 Trauma ER, 58 ER staff members	Post implementation of a debriefing program, surveys showed that team work and respect was improved, personal recognition of their psycological well being was improved, patient safety was improved due to improvement in team work and staff was more agreeable to patient safety improvement strategies.	Limited by 3 month duration and small sample size	II, A

				Communication was improved, and the staff outlook and perception of debriefings was improved and staff found debriefings to be beneficial.		
6	Guillermo A. Can˜adas-De la Fuente, Cristina Vargas, Concepcio´n San Luis, Inmaculada Garcı´a, Gustavo R. Can˜adas, Emilia I. De la Fuente	Quasi Experimental	19 general hospitals, 18 general healthcare centers, 676 nursing professionals	Results showed a high prevalence of burn out syndrome among nurses Emotional exhaustion was related to personality Further studies can be done to show progression on burnout over time	Unable to determine causal relations due to design, non randomized sample, questionable generalizability	II, A
7	Ste´phan Lavoie, Lise R. Talbot & Luc Mathieu	Quasi Experimental	2 ER's, 12 nurses	PTSD symptoms were reported in three categories: exposure as a witness, eposure as a victim, and contextual exposure PTSD symtoms were seen in different stages: immediate to delayed Experienced nurses reported less PTSD than new nurses Intervention was based upon what was gained in the survey of the staff members The study does not diagnose staff with PTSD, it shows correlation of high stress levels that can lead to PTSD	Recall bias, desire to please bias	II, A

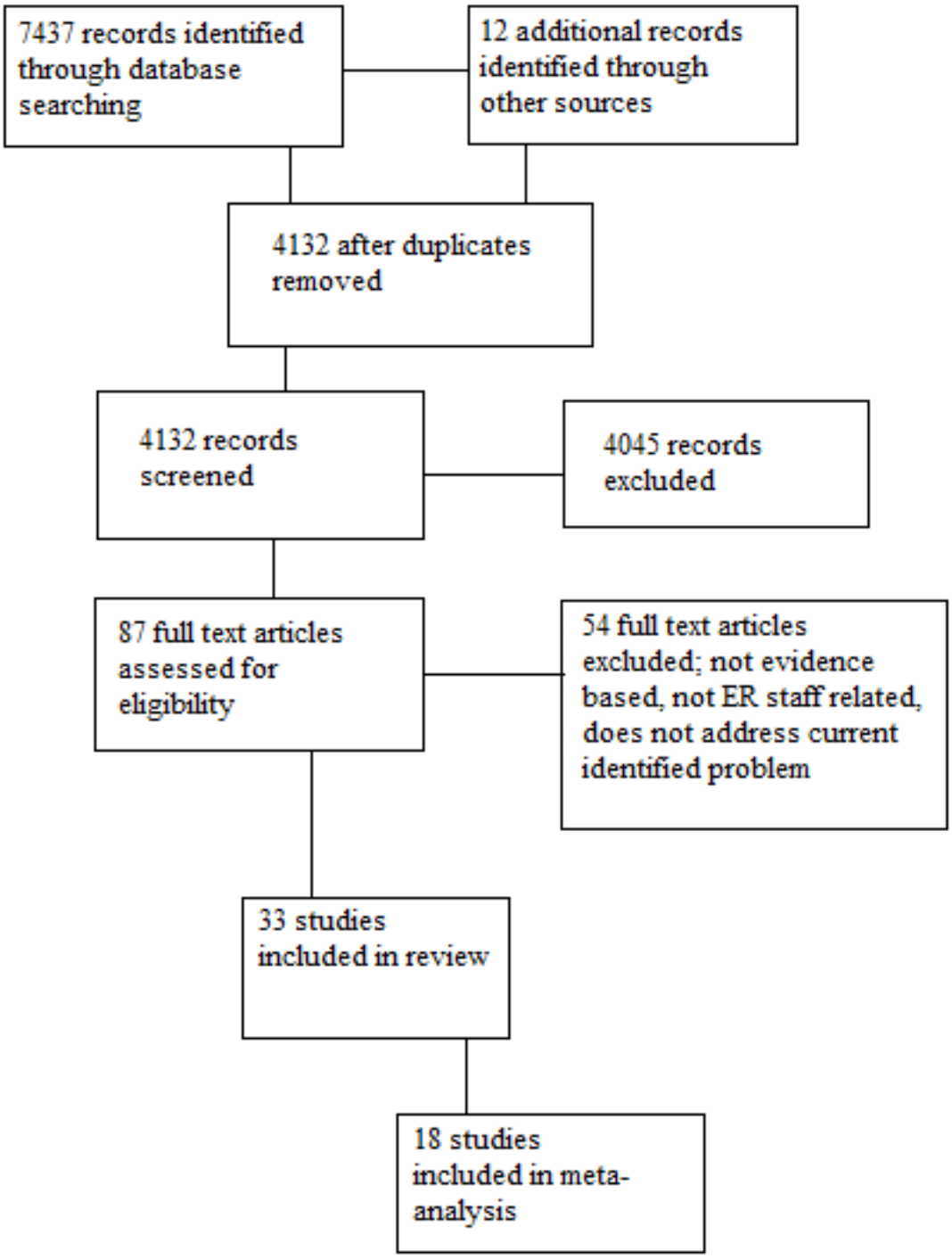
8	Darcie Schwab, Nancy Napolitano, Kelly Chevalier, Susan Pettorini-D'Amico	Literature Review	N/A	The wounded healer theory is used to help address PTSD symptoms in ED staff, this also addresses how management should understand and support the staff Both formal and informal groups were found to be beneficial to staff	N/A	V, A
9	Mitchell, J. T.	Expert Opinion	N/A	The Critical Incident Stress Debriefing model is discussed with it's relevance to emergency services and its application steps.	N/A	V, A
10	Sonya Healy, Mark Tyrrell	Quasi-Experimental	Three ED's, 103 doctors and nurses	Staff noted that they determined debriefings to be important, however, the facilitation of debriefings was not there. Lack of knowledge of guidelines, and lack of guidelines in general Younger nurses were found to have increased levels of stress and poor coping mechanisms Reasons for nurse turnover and leaving the profession were discussed.	Not a longitudinal study	II, A
11	Helen M. Paterson, Keenan Whittle, Richard I. Kemp	RCT	Single university, 74 first year students	Some phases of CISD were found in this study to have negative psychological effects on the participants, however, they also note that these negative effects were only measured 5 minutes after the intervention took place, and that	Caution on generalizability, only investigated two stages of CISD	I, A

				more research needs to be done on long term effects. It was found that just focusing on the facts and not including the emotional aspect of the event, led to more negative thoughts post debriefing. This study also listed limitations of only studying two stages of the seved CISD stages and that they caution the generalizability of these results.		
12	Rose Allen, Tanya Judkins-Cohn, Raul deVelasco, Edwina Forges, Rosemary Lee, Laurel Clark, Maggie Procunier	Quasi Experimental	7 hospital healthcare system, 323 healthcare professionals	Moral distress in healthcare workers is not addressed as often as it should be Nurses responses, physician responses and tech responses	Not generalizable, only reflected views of those that answered survey, variation in sample sizes	II, A
13	Mary Van Osch, Kathy Scarborough, Sarah Crowe C, Angela C. Wolff, Sheryl Reimer-Kirkham	Quasi Experimental	1 hospital, 13 ER and CC nurses	The turnover cost of specialty nurses can cost minimum of $40,000 The reasons why nurses stay in their posititons is studied and the 4 main themes were: Leadership that is involved, accessible and communicates clearly. Interprofessional relationships where the physician/APN and the nurse are on a first name basis with each other and have mutual professional respect.	Small sample size	II, B

				Practice environment- mentorship and teamwork. Personal lifestyle/job fit: having an out of work positive relationship with co-workers and maintaining work/life balance.		
14	Kathleen Evanovich Zavotsky, Garrett K. Chan	Quasi Experimental	ENA members, 198 nurses	Coping strategies were discussed, the COPE scale was used Moral distress scale revised was used Moral distress is present in all ED nurses studied in different forms of presentation Generalized results to all ED nurses The four A's method was used to address moral distress	Internet study design, specific demographics not addressed, region of US not addressed	II, A
15	Lisa A. Wolf, Cydne Perhats, Altair M. Delao, Michael D. Moon, Paul R. Clark, Kathleen E. Zavotsky	Quasi Experimental	ENA conference, 17 nurses	Correlation of moral distress and burnout is discussed Nurses report that they feel underappreciated, over worked, that there is a lack of concern for quality and safety, lack of concern from management and over emphasis on metrics.	Exploratory study, limited findings due to self report, biased to higher education levels, small sample size	II, A
16	Benjamin Schooley, Neset Hikmet, Menderes Tarcan, and Gamze Yorgancioglu	Quasi Experimental	2 hospitals, 250 ED physicians, nurses and techs	Emotional exhaustion score, Depersonalization score, and Personal accomplishment score are the three main factors of burnout. These scores were all positive in the respondent’s surveys.	Not generalizable, self reported and subjective	II, A

				Physicians, nurses and techs all experience the three main factors of burnout, just in different ways		
17	Michelle R. Tuckey and Jill E. Scott	RCT	67 volunteer fire fighters	results found that one-month post-intervention CISD was associated with moderately lower levels of alcohol consumption and moderately higher self-rated quality of life, taking into account pre-intervention scores on these outcomes. group CISD was not associated with harmful psychological health or well-being outcomes improvements in quality of life were found post intervention	This was the first study on group CISD, unable to minimize group differences, relied on self report data	I, A
18	IOM	Clinical Practice Guidelines	N/A	Clinical practice guidelines developed to improve patient safety in the health care system	N/A	IV, A

Date	Database	Search Terms	Notes/Comments
1/27/2019	MEDLINE (EBSCOhost)	emergency AND debriefing	Limit to linked full text 15 potential articles found
1/27/2019	MEDLINE (EBSCOhost)	Emergency AND PTSD	Limit to linked full text 14 possible articles
1/28/2019	PubMed	Emergency AND debriefing	Limit to linked full text 7 potential articles found
1/28/2019	CINAHL	Emergency AND moral distress	Limit to linked full text 6 potential articles found
1/28/2019	MEDLINE (EBSCOhost)	Emergency AND stress management	Limit to linked full text 14 potential articles found
1/28/2019	MEDLINE (EBSCOhost)	Moral distress AND nursing	Refined to emergency nursing 16 potential articles found
1/29/2019	CINAHL	Emergency nursing AND burnout	Limit to linked full text 8 potential articles found
1/30/2019	MEDLINE (EBSCOhost)	Moral distress scale AND nursing	Limit to linked full text 3 potential articles found
2/14/2019	PubMed	Emergency department AND debriefing	Limit to linked full text 4 potential articles found


7437 records identified through database searching
12 additional records identified through other sources
4132 after duplicates removed
4132 records screened
4045 records excluded
87 full text articles assessed for eligibility
54 full text articles excluded; not evidence based, not ER staff related, does not address current identified problem
33 studies included in review
18 studies included in meta-analysis

Appendix B

Identify triggering Issues / Opportunities

-Staff burnout/lack of effective coping

-Currently unit based initiative, hoping for adoption system wide

-Data shows ED staff lack effective coping and resources

-The IOM report urges the creation of a safer health system, and this starts with staff safety, health and teamwork

-The conceptual framework to be used is Jean Watson's Wounded Healer/Caring Model

PICO question

- How susceptible are ED staff members to negative coping mechanisms post code without a debriefing program?

Priority?

-Yes, this is a priority for the health and safety of ED staff

Form a team

-The team consists of Claire Giordano, Dr. Cara Padovano and Dr. Mary Kamienski

Assemble, appraise and synthesize evidence

-Systematic search completed, see table of evidence in Appendix A

Sufficient evidence?

-The research found shows that there is sufficient evidence for this problem

Design and pilot practice change

-Engage/encourage all ED staff members to participate

-Site approval from [redacted] acquired, pending [redacted] IRB approval and [redacted] IRB approval

-Resources needed from site are staff members and a room to hold educational session

-Constraints would be staff willingness to participate

-Staff informed consent to be developed and distributed

-Pre-survey on how they feel about debriefings, their own coping strategies, are their strategies effective, what is effective to them and a screening for ineffective coping to be distributed to staff members

-Collect, synthesize, and report data from pre-surveys

-Jean Watson's Theory of Human Caring will be used as the conceptual framework (See Appendix B)

Is change appropriate for adoption into practice?

-Goal is yes!

Integrate and sustain the practice change

-Engage all staff members to participate in an in-service/educational session on debriefing and effective vs non-effective coping mechanisms and their effects

-Redistribute the same survey

Disseminate results

-Was there a change in behavior, coping and thought process

-Submit results to [redacted] research council/management for implementation campus wide

Appendix C

You are being asked to take part in research being conducted by Claire Giordano who is a Rutgers graduate student in the Dept. of DNP, FNP-ER program. The purpose of this study is that ED staff will be able to: recognize PTSD/negative coping signs and symptoms, verbalize and understand strategies of debriefing to avoid negative coping, understand how negative coping can negatively affect the work environment and patient care, understand the importance of debriefing post codes, and commit to creating a healthier and safer work environment. The following survey is going to address these topics. The responses are anonymous and will not be seen by anyone other than Claire Giordano.

Please place a number of your choosing in the upper right hand corner of the survey. Please keep this number to yourself and remember this number for the post survey and place that same number in the upper right hand corner of that survey. This way, the individual results may be compared without disclosing identity of the participant.

Please answer the following open ended questions:

What do you feel is a critical event that should have a debriefing?_____
_____
_____
_____

What are your current coping mechanisms (if any)? _____
_____
_____
_____

Please circle- Are you: MD CRNP PA RN ED Tech Secretary

How many years of experience do you have? _____

Please rate the following questions on a 1 to 5 Likert scale with 1 being 'strongly disagree' and 5 being 'strongly agree'

	1	2	3	4	5
1. I feel supported post code/critical event					
2. Issues that arise during critical event are addressed in a timely manner					
3. The current debriefing process is effective					
4. There is effective education post critical event					
5. I am comfortable making suggestions post event					

6. My thoughts/suggestions/feedback is addressed post critical event					
7. It is easy for me to jump back into work post critical event					
8. I enjoy my job post critical event					
9. I feel that I cope well with my feelings					
10. I feel that there is room for improvement in my coping skills					
11. I have lost interest in my job					
12. I have lost interest in my home life/ things that I enjoy doing because of my job					
13. I think about changing jobs often					
14. I will have more than 1 drink a day (female) or more than 2 drinks a day (male) because of my job					
15. My alcohol consumption has increased while employed					
16. My stress levels at work are high daily					
17. My stress levels at home are high because I think about work					
18. I feel very supported at work re: emotional					
19. I feel very supported at work re: daily duties					
20. I feel like I can turn to any co-worker for support without feeling shame					
21. I feel shameful if I ask for emotional support from a co-worker					
22. There are sufficient resources for me at work if I need any type of support					
23. I feel I can voice my concerns to my co-workers without being penalized					
24. I feel burnt out					
25. I feel my co-workers are burnt out					
26. I feel I am adequately equipped/prepared to assist my co-workers if they ask for help					

Appendix D

EMAIL:

You are being asked to take part in research being conducted by Claire Giordano who is a Rutgers graduate student in the Dept. of DNP, FNP-ER program. The purpose of this study is that ED staff will be able to: recognize PTSD/negative coping signs and symptoms, verbalize and understand strategies of debriefing to avoid negative coping, understand how negative coping can negatively affect the work environment and patient care, understand the importance of debriefing post codes, and commit to creating a healthier and safer work environment for each other.

This project will consist of a brief survey, an educational session that will be focused on: debriefing programs, what negative coping mechanisms are and how they affect our lives. Then proper coping mechanisms will be discussed and how they can be incorporated into every life. Then a post survey to evaluate the effectiveness of the in-service.

The survey will take about 5-10 minutes to complete it. We anticipate 53 subjects will take part in the study. Both surveys will be anonymous, and no identifying information will be collected. Your participation will be greatly appreciated in helping me complete this project!

Appendix E

RUTGERS
School of Nursing

CONSENT TO TAKE PART IN A RESEARCH STUDY

TITLE OF STUDY: Effectiveness of Emergency Department Staff Coping Post Implementation of a Debriefing Educational Session

Principal Investigator: Claire Giordano, RN, BSN, CEN

This consent form is part of an informed consent process for a research study and it will provide information that will help you decide whether you want to take part in this study. It is your choice to take part or not. After all of your questions have been answered and you wish to take part in the research study, you will be asked to sign this consent form. You will be given a copy of the signed form to keep. Your alternative to taking part in the research is not to take part in it.

Who is conducting this research study and what is it about?
You are being asked to take part in research being conducted by Claire Giordano who is a Rutgers graduate student in the Dept. of DNP, FNP-ER program. The purpose of this study is that ED staff will be able to: recognize PTSD/negative coping signs and symptoms, verbalize and understand strategies of debriefing to avoid negative coping, understand how negative coping can negatively affect the work environment and patient care, understand the importance of debriefing post codes, and commit to creating a healthier and safer work environment.

What will I be asked to do if I take part?
The survey will take about 5-10 minutes to complete it. We anticipate 53 subjects will take part in the study. Attendance at the educational program, and completion of the post survey.

What are the risks and/or discomforts I might experience if I take part in the study?
The risks and/or discomforts of taking part in this research would be exposure to sensitive questions, psychological stress from the questions and in-service program. If needed, participants may reach out to [redacted]. Breach of confidentiality is a risk of harm but a data security plan is in place to minimize such a risk. Also, some questions may make you feel uncomfortable. If that happens, you can skip those questions or withdraw from the study altogether. If you decide to quit at any time before you have finished the survey, your answers will NOT be recorded.

Are there any benefits to me if I choose to take part in this study?

There no direct benefits to you for taking part in this research. You will be contributing to knowledge about ED staff current coping mechanisms and how we can improve coping mechanisms for ED staff, and the resources that can be put into place for each other.

Will I be paid to take part in this study?
You will not be paid to take part in this study.

How will information about me be kept private or confidential?
All efforts will be made to keep your responses confidential, but total confidentiality cannot be guaranteed.

- We will not collect any information that can identify you or other subjects. Completed forms will be stored in a locked cabinet controlled by the investigator. Responses may be converted to digital format and stored on a password-protected computer that can only be accessed by the study team. Paper copies will then be destroyed. There is no plan to delete the responses. We plan to study the data for some time.
- No information that can identify you will appear in any professional presentation or publication.

What will happen to information I provide in the research after the study is over?

- The information collected about you for this research will not be used by or distributed to investigators for other research.

What will happen if I do not want to take part or decide later not to stay in the study?
Your participation is voluntary. If you choose to take part now, you may change your mind and withdraw later. You may leave without turning in a completed form or by turning in a blank or incomplete form. However, once you turn in the form, you can no longer withdraw your responses as we will not know which ones are yours.

Who can I call if I have questions?
If you have questions about taking part in this study, you can contact the Principal Investigator: Claire Giordano, DNP-FNP-ER Program, [redacted]. You can also contact my faculty advisor Dr Cara Padovano, [redacted]
If you have questions about your rights as a research subject, you can call the IRB Director at: *Newark HealthSci (973)-972-3608* or the Rutgers Human Subjects Protection Program at (973) 972-1149.

Please keep this consent form if you would like a copy of it for your files.

By beginning this research, you acknowledge that you have read the information and agree to take part in the research, with the knowledge that you are free to withdraw your participation without penalty.

AGREEMENT TO PARTICIPATE

1. Subject consent:

I have read this entire consent form, or it has been read to me, and I believe that I understand what has been discussed. All of my questions about this form and this study have been answered. I agree to take part in this study.

Subject Name (printed):_____

Subject Signature:_____ Date:_____

2. Signature of Investigator/Individual Obtaining Consent:

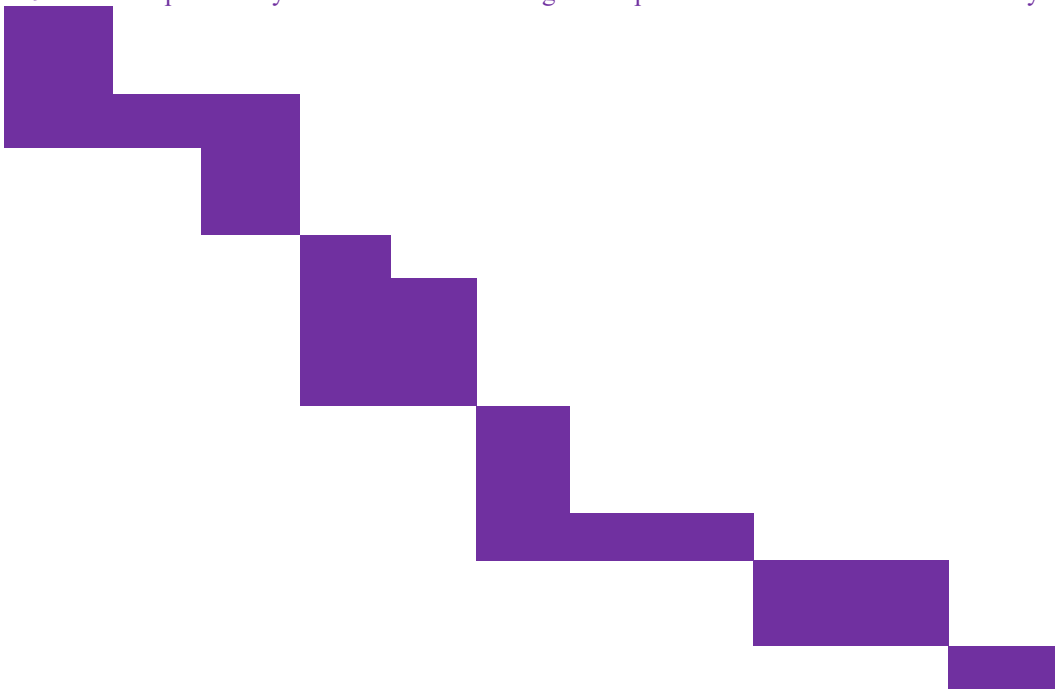
To the best of my ability, I have explained and discussed all the important details about the study including all of the information contained in this consent form.

Investigator/Person Obtaining Consent (printed):_____

Appendix F

Project Timeline

Activity	Plan Start	Plan Duration
Presentation of proposal to team	19-Mar	1
IRB submission	19-Mar	3
Participant Recruitment	19-May	1
Pre Data Collection	19-Jun	1
Project Implementation (education)	19-Jun	2
Post Data Collection	19-Aug	1
Data Analysis	19-Aug	1
Evaluation/Writing	19-Aug	3
Presentation of Final Project	19-Nov	2
Graduation	20-May	1



Appendix G

Total Budget

Total

$93.40

Item	Cost
Surveys printed (x120 @ .07$ each)	$8.40
Hard Copy Power point (x5 @ 5$ each)	$25.00
Light refreshments (x3 @ $20)	$60.00
SPSS software (previously obtained by PI)	$0.00

Appendix I

[redacted]

[redacted]

Date: *2/12/2019*

Re: Letter of Cooperation For [redacted]

Dear Claire Giordano,

This letter confirms that that I, as an authorized representative of [redacted] allow Claire Giordano access to conduct study related activities at the listed site(s), as discussed with Claire Giordano and briefly outlined below, and which may commence when Claire Giordano provides evidence of IRB approval for the proposed project.

- **Research Site(s)**: [redacted]
- **Study Purpose:** *The purpose of this study is to determine the effectiveness of ED staff coping post code, and if coping improves after a debriefing program has been implemented.*
- **Study Activities:** *Activities will include distribution of a pre-survey to staff members, an educational in-service, and a post-survey. Survey will be anonymous.*
- **Subject Enrollment:** *Subject criteria: ED staff members that participate in codes.*
- **Site(s) Support**: *Support from site would include allowing staff to complete the surveys and provide a space for the educational in-service and allow staff to participate in the in-service.*
- **Data Management:** *All data that will be collected will be from an anonymous survey, I will be the only one tabulating the data. Data will be kept on password locked device.*
- **Other:** *Not Applicable.*
- **Anticipated End Date:** *Anticipated end date: January 2020.*

We understand that this site's participation will only take place during the study's active IRB approval period. All study related activities must cease if IRB approval expires or is suspended. I understand that any activities involving Personal Private Information or Protected Health Information may require compliance with HIPAA Laws and Rutgers Policy.

Our organization agrees to the terms and conditions stated above. If we have any concerns related to this project, we will contact Claire Giordano. For concerns regarding IRB policy or human subject welfare, we may also contact the Rutgers IRB (see orra.rutgers.edu/hspp).

[redacted]

Appendix J

Structured Debriefing Script Template

Timing
Start time:
Stop time:

Leader
Name:
Position:

Intro
My name is _____, and I will be conducting the structured debriefing for the event of_____ .

Confidential Issues
If there are any issues that you don't feel comfortable discussing in this setting, anonymous input can be submitted to: Risk Management or HR

Overall
What things went well?
Did we have the complete team present?

Prehospital
Were there EMS related issues?

Resuscitation
Were there problems with: establishing the airway, obtaining vital signs, inserting IV?

If non-resuscitation event (ex: violence)
What led to the event
What could have been done to prevent event
How was event handled
Could anything have been done differently
Any staff injuries

Diagnostics
Were there problems obtaining appropriate images, obtaining lab results?

Treatment
Were there problems obtaining medications or blood products?

Definitive care
Were there problems getting the patient to definitive care? (Transfer, Cath lab, etc)

Communication
- Were there communication problems?

Environment
- Were there equipment issues?
- Were all the appropriate supplies available?

Patient Safety
- Were there any issues that jeopardized patient safety?

Teamwork
- How well did the team work together?
- Suggestions for improvement?

Improvement
- What could be improved in the process?

Ethics
- Were there any issues related to ethics?

Patient support
- Was the family (or patient support system) appropriately communicated with?

Learning
- Was this a new or uncomfortable experience for anyone?
- Are there processes that need clarification?
- Are there any questions regarding decision-making or treatment?

Report
- What should be elevated to management?

Open discussion
- Thoughts, feelings, etc

Appendix K

Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference Lower	Upper			
Pair 1	Supported post event with intervention - Supported post event	.15217	.81561	.12025	-.09003	.39438	1.265	45	.212
Pair 2	Issues post intervention - Issues addressed in timely manner	.28261	.98122	.14467	-.00878	.57400	1.953	45	.057
Pair 3	Current process effective post intervention - Current debriefing process effective	.47826	.88792	.13092	.21458	.74194	3.653	45	.001
Pair 4	Post intervention - Effective education post event	.56522	1.10860	.16345	.23600	.89443	3.458	45	.001

Pair 5	Post intervention - Comfortable making suggestions post event	.19565	.83319	.12285	-.05177	.44308	1.593	45	.118
Pair 6	Post intervention - Suggestions/feedback is addressed post event	.17391	.76896	.11338	-.05444	.40227	1.534	45	.132
Pair 7	Post intervention - Easy to get back to work post event	-.08696	.62632	.09235	-.27295	.09904	-.942	45	.351
Pair 8	Post intervention - Enjoy job post event	.02174	.64941	.09575	-.17111	.21459	.227	45	.821
Pair 9	Post intervention - Feel cope well with feelings	-.02174	.74503	.10985	-.24299	.19951	-.198	45	.844
Pair 10	Post intervention - Is room for improvement in coping skills	-.04348	.89335	.13172	-.30877	.22181	-.330	45	.743
Pair 11	Post intervention - I have lost interest in job	-.04348	.81531	.12021	-.28560	.19864	-.362	45	.719

Pair 12	Post intervention - Lost interest in home life	.02174	.85607	.12622	-.23248	.27596	.172	45	.864
Pair 13	Post intervention - Think about changing jobs often	-.08696	.81175	.11969	-.32802	.15410	-.727	45	.471
Pair 14	Post intervention - More than 1 drink/day female or 2 drink/day male	.06522	.85381	.12589	-.18833	.31877	.518	45	.607
Pair 15	Post intervention - Alcohol consumption increased	-.08696	.81175	.11969	-.32802	.15410	-.727	45	.471
Pair 16	Post intervention - Stress levels high at work	-.08696	.72499	.10689	-.30225	.12834	-.813	45	.420
Pair 17	Post intervention - Stress levels high at home	-.02174	.95427	.14070	-.30512	.26164	-.155	45	.878
Pair 18	Post intervention - Feel supported at work emotionally	.10870	.60473	.08916	-.07089	.28828	1.219	45	.229

Pair 19	Post intervention - Feel supported at work daily duties	.15217	.78789	.11617	-.08180	.38615	1.310	45	.197
Pair 20	Post intervention - Can turn to any co-worker for support without shame	.19565	.71863	.10596	-.01775	.40906	1.847	45	.071
Pair 21	Post intervention - Feel shameful if ask for emotional support from co-worker	.04348	1.03186	.15214	-.26295	.34990	.286	45	.776
Pair 22	Post intervention - Sufficient resources at work	.23913	.67280	.09920	.03933	.43893	2.411	45	.020
Pair 23	Post intervention - Feel can voice concerns to co-workers without being penalized	-.08696	.72499	.10689	-.30225	.12834	-.813	45	.420
Pair 24	Post intervention - Feel burnt out	.08696	.81175	.11969	-.15410	.32802	.727	45	.471
Pair 25	Post intervention - Feel coworkers are burnt out	.02174	.68278	.10067	-.18102	.22450	.216	45	.830

Pair 26	Post intervention - Adequately prepared to assist coworkers if ask for help	.06522	1.08325	.15972	-.25647	.38690	.408	45	.685

Appendix L

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.897	.897	8

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
Issues addressed in timely manner	21.5870	35.892	.561	.443	.895
Issues post intervention	21.3043	36.839	.568	.558	.894
Current debriefing process effective	22.1957	31.672	.820	.774	.870
Current process effective post intervention	21.7174	32.207	.716	.819	.881
Effective education post event	22.1087	32.766	.705	.684	.882
Post intervention	21.5435	31.943	.746	.790	.878
Sufficient resources at work	21.7826	36.307	.617	.705	.890
Post intervention	21.5435	34.254	.722	.728	.881

Appendix M

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.886	.896	20

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
Supported post event	65.2391	111.564	.683	.785	.875
Supported post event with intervention	65.0870	109.503	.739	.811	.873
Comfortable making suggestions post event	65.0000	113.111	.518	.865	.881
Post intervention	64.8043	116.428	.428	.863	.883
Suggestions/feedback is addressed post event	65.3696	112.727	.667	.834	.876
Post intervention	65.1957	110.605	.726	.747	.874
Easy to get back to work post event	64.8696	119.183	.394	.710	.884
Post intervention	64.9565	117.731	.467	.783	.882
Feel supported at work emotionally	65.4130	109.848	.719	.885	.874
Post intervention	65.3043	109.816	.747	.892	.873
Feel supported at work daily duties	65.2391	112.497	.671	.866	.876
Post intervention	65.0870	115.637	.605	.720	.879
Can turn to any co-worker for support without shame	64.9348	113.040	.561	.824	.879
Post intervention	64.7391	112.286	.659	.817	.876
Feel shameful if ask for emotional support from co-worker	66.3478	130.543	-.189	.672	.905
Post intervention	66.3043	128.616	-.118	.657	.904
Feel can voice concerns to co-workers without being penalized	64.6522	112.232	.653	.799	.876
Post intervention	64.7391	110.686	.742	.827	.874

Adequately prepared to assist coworkers if ask for help	64.7609	117.786	.445	.643	.883
Post intervention	64.6957	119.105	.307	.586	.887

Appendix N

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.752	.716	12

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
Feel cope well with feelings	28.8696	48.738	-.398	.588	.809
Post intervention	28.8913	48.232	-.387	.634	.802
Is room for improvement in coping skills	28.7174	39.496	.295	.693	.745
Post intervention	28.7609	39.119	.350	.594	.739
More than 1 drink/day female or 2 drink/day male	30.9783	37.088	.478	.742	.724
Post intervention	30.9130	36.526	.548	.746	.716
Alcohol consumption increased	30.7826	34.129	.621	.746	.702
Post intervention	30.8696	33.760	.661	.792	.697
Stress levels high at work	29.5435	35.854	.560	.712	.713
Post intervention	29.6304	34.505	.643	.731	.701
Stress levels high at home	30.4783	35.322	.563	.591	.712
Post intervention	30.5000	34.744	.629	.670	.703

Appendix O

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.728	.680	14

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
Easy to get back to work post event	33.1522	44.799	-.102	.693	.752
Post intervention	33.2391	46.364	-.239	.695	.764
Enjoy job post event	33.3043	46.483	-.238	.722	.768
Post intervention	33.2826	45.896	-.198	.706	.761
I have lost interest in job	34.9130	37.814	.466	.680	.699
Post intervention	34.9565	37.909	.460	.702	.700
Lost interest in home life	35.1522	38.043	.439	.624	.702
Post intervention	35.1304	37.716	.519	.659	.695
Think about changing jobs often	34.7391	38.553	.390	.637	.708
Post intervention	34.8261	36.502	.567	.696	.687
Feel burnt out	34.3043	32.394	.698	.836	.659
Post intervention	34.2174	32.529	.692	.813	.661
Feel coworkers are burnt out	33.9130	36.170	.512	.879	.691
Post intervention	33.8913	35.432	.593	.889	.681

Appendix P

Free text responses

Pre	Post
Hiking, Running	Hiking, Running, Discussion with peers
Talking	Talking
Music, sports	Music, sports
Informal discussion	Taking a break to decompress
Discuss amongst each other	Discuss amongst each other and Don't dwell
Smoking, drinking alcohol	Talking to each other, smoking
Discuss with staff and co-workers	Discuss with each other, individual if needed
Talking with co-workers, family, exercise	Talking with co-workers, exercise
Smoking	Running, sleeping
Discussing event	Talking with co-workers
Going to the gym, glass of wine, talking about it	Family, gym, dog
Talking with peers	Talking with co-workers
Exercising and talking	Exercising and talking
Drinking, talking to husband, bath, eating	Talking to husband, bath
Talking to my mom, stress eating	Talking with therapist, talking with colleagues
Sleeping	Discussing what happened with those involved
Discussing what happened with other staff members, distraction	Discussing with peers
Working out, talking with other co-workers that experienced the same event	Exercise, sleep, talking to other co-workers
Playing guitar or piano, painting or engaging in other hobbies	Deep breathing, music and art
Family, friends, calming activities, talking, venting	Family, friends, calming activities, talking with other co-workers, venting
No coping mechanisms	Talk to friends, family
Learning about the situation	Differentiating home life and the work place, talking to friends or co-workers, taking breaks to recoup