CERTIFIED REGISTERED NURSE ANESTHETIST SECOND VICTIM PEER SUPPORT PROGRAM KNOWLEDGE AND PREFERENCES

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Table of Contents

Abstract

Background: The term "second-victim" refers to the negative mental and physical effects that healthcare professionals experience after an adverse or traumatic event. This second victim phenomenon has negative ramifications on those involved, including Certified Registered Nurse Anesthetists (CRNAs). When a second victim event occurs, CRNAs should be aware of support options to avoid unwanted consequences. Increasing CRNA's knowledge towards established facility support programs could increase use of support program options. **Purpose:** The purpose of this quality improvement project was to evaluate CRNAs knowledge about second victim occurrence and assess program support preferences with the second victim experience support tool (SVEST). Recommendations for the addition of a peer support component were made to the current employee assistance program (EAP). **Methods:** An education session about the second victim phenomenon, effects, and support options to inpatient and outpatient CRNAs at a level one medical center was provided. The SVEST survey assessed second victim knowledge, perception, and current and desired peer support for CRNAs. **Results:** Twenty-six respondents completed the survey which comprised of 27% outpatient and 73% inpatient CRNAs. CRNAs desired peer support more than EAP support options for the second victim phenomenon. No differences were found between inpatient and outpatient departments on support type desired. **Conclusion:** Second victim program recommendations were made to the EAP to add a peer support component to current support options.

Key Words: Second victim, peer support, critical incident, adverse events, employee assistance program

Background and Significance

Certified Registered Nurse Anesthetists (CRNAs), provide over 49 million anesthetics to patients in the United States every year and anesthesia has become 50 times safer in the last 30 years than ever before (American Association of Nurse Anesthetists, 2020). While anesthesia safety has improved, oversights and unforeseen events can occur for the CRNA in any situation (AANA, 2020). Unfortunately, approximately 4,000 surgical errors occur each year in the United States; these errors can cause "second victim" feelings for those involved, including CRNAs (Rodziewicz et al., 2020).

The term second victim describes the emotional and psychological impact experienced by a healthcare worker after an adverse, unexpected event, or "critical incident" (Wu, 2000). Critical incidents are any adverse or unexpected events that cause reactions such as unwanted psychological and physical reactions (Burlison et al., 2017). Critical incidents and adverse events are interchangeable throughout the literature to describe an unexpected adverse event that occurs to anyone in healthcare and potentially leads to unwanted or unintended harm (Burlison et al. 2017). Therefore, the CRNA can find themselves in a situation that they either could not control or did not anticipate leading to a negative patient outcome after an adverse event. The negative experience or adverse event could lead to feelings of shame, guilt, insecurity, and judgement associated with the second victim phenomenon (Ullström et al., 2014). Such feelings could lead to employee resignations due to ineffective coping skills by those affected if second victim support is not provided (Ullström et al., 2014).

Nurse anesthetists with less than 10 years of experience are eight times more likely to experience anxiety after a critical incident, four times more likely to relive that incident, and have the lowest scores for effective coping mechanisms (Pelt et al., 2019). These ineffective

coping mechanisms could lead to reduced work performance, burnout, sleep issues, problems concentrating, drug and alcohol misuse, and thoughts of leaving their careers (Maria et al., 2019; Stone et al., 2017). Further, maladaptive stress management strategies by the second victim can have long term negative effects causing quality care issues for patients, organizations, and the individual (Stone et al., 2017). Consequently, about 70% of healthcare providers report experiencing a crisis in their careers and almost 60% of those desired to receive peer support (Edrees, et al., 2016).

Like other healthcare providers, CRNAs support protocols for healthcare institution based second victim support programs, but can be unaware of existing peer support programs, especially those that focus on the second victim phenomenon (Stone et al., 2016). This lack of awareness towards existing support programs and barriers such as lack of support program awareness, fear of judgement, and program effectiveness can create issues for CRNAs accessing established second victim peer support programs (Stone et al., 2017). Several second victim programs have shown great success in meeting the needs of the second victim (Burlison et al., 2017; Edrees et al., 2021). Most programs are designed in a three tier system with options to get peer-to-peer support, departmental support, or counseling support (Trent et al., 2016). Healthcare personnel including CRNAs report a preference toward peer-to-peer support when faced with a critical incident instead of a chaplin, counselor, or family member (Hoffman, 2017; Edrees et al., 2017).

Even though many established programs address the second victim phenomenon, CRNAs report that their organizations have gaps in their support program options and need an EAP that focuses on the second victim (Van Pelt et al., 2019). Many organizations reported that they could improve on their existing EAP in relation to supporting the second victim (Hoffman, S. 2017).

Edrees et al., 2021 found that 97.7% of providers are willing to use second victim peer-to-peer support programs, but many feel a barrier to EAP due to program funding, stigmas, lack of interest, and lack of time. Furthermore, studies found that implementation of peer support programs improved quality of care, patient safety, and emotional states, and expedited return to work (Scott, 2017).

Underutilization of peer support programs can lead to issues for CRNAs and organizations despite research supporting the programs' usefulness and benefits to employees. The AANA supports and has identified a need for CRNAs to have access to and knowledge of critical incident stress debriefings (AANA, 2019). However, Stone et al., (2017), found CRNAs lack second victim knowledge and have a need for improved awareness of peer assistance programs after adverse events, potentially increasing their utilization. Education, training, and identification of barriers may improve CRNAs' awareness of peer support programs (Stone, 2017).

Purpose

The purpose of this quality improvement (QI) project was to evaluate CRNAs' knowledge about second victim occurrence and assess program support preferences with the second victim experience support tool (SVEST). This project also explored current EAP resources for CRNAs and identified preferences for support. The project included making recommendations to the EAP administrator about second victim program additions.

Review of Current Evidence

A synthesis of the literature was performed to evaluate and assess current information and evidence-based research on CRNA's knowledge and perceptions of peer support programs, critical incidents, second victim knowledge, and support programs for those who experience

adverse events. An initial query of database searches was performed in PubMed, CINAHL, Ovid, and Google Scholar with various combinations of key phrases including “second victim,” “peer support programs,” “medical errors,” “clinician well-being,” “critical incident stress management,” “anesthesia providers,” “nurse anesthetists,” and “healthcare providers,” including only publications within the last 5 years. Recommendations from the AANA regarding peer support programs was also reviewed. Inclusion criteria included all healthcare personnel since there was limited information on nurse anesthetists alone. Of the 99 articles found, 20 met the criteria for review involving thirteen quantitative, four qualitative, and three mixed designs. Five themes arose when examining the literature, these were second victim phenomenon, support program preferences, willingness, perception and preferences for support programs, barriers to accessing peer support, and availability of second victim peer support programs

Themes

Second victim phenomenon

A major theme found in second victim related literature was the healthcare provider’s experience with the second victim phenomenon. Three articles surveyed their participants and all found a similar range of 70%-79% of the participants reported being involved in a critical incident or adverse event (Edrees et al., 2017; Hu et al., 2012; van Pelt et al., 2019). However, Merandi et al. (2017), found 10-40% of healthcare workers based on a specialty identified as a second victim after what could be considered a critical incident. Of the articles that related to anesthesia providers, Hu et al., (2012) found that only 50% were willing to seek help after that event and Burlison et al. (2017) reported a similar finding of 50% of all healthcare workers identified as a second victim. Interestingly, Stone et al. (2017) found that 25% of the CRNAs who had experienced an adverse event had issues that could affect their practice abilities. Of

note, CRNAs specifically with greater than 10 years of experience coped better when faced with an adverse incident (van Pelt, et al. 2019).

There is an array of symptoms reported with the second victim experience all of which could affect practice abilities, work-life balance, and the emotional and mental wellbeing of healthcare professionals. Common second victim symptoms reported were physical issues, psychological issues, anxiety, inability to perform job functions, guilt, shame, embarrassment, and fear of litigation involvement (Burlison et al., 2017; Edrees et al., 2017; Han et al., 2016; Lane et al., 2018; Rodriquez et al., 2018; van Pelt., 2017; Vanhaecht et al.2019; Zhang et al., 2019). Most articles addressed only feelings towards critical event incidences, however one article addressed that these feelings lasted for at least 6 months after the event and could be longer depending on the severity of the incident (Vanhaecht et al., 2019). Three articles reported that these second victim feelings then lead to employment loss and missed workdays (Burlison et al., 2017; Trent et al., 2016; Zang et al., 2019). Burlison et al. 2017, Trent et al., 2016, and Scott, 2019 even identified that poor coping after an event could lead to substance abuse, total career change, and even suicide. Most of the articles focused on the healthcare professional's direct involvement in the critical incident and their thoughts and needs toward peer-support programs, however Edrees et al. (2016), stated that leaders who debriefed staff also needed second victim support and desired such.

Support program preference

Preferences for support programs was identified in the literature such as location of second victim support and by whom support was given. Most employees desired a peaceful and quiet place to recover outside of their area of work immediately after the incident (Burlison et al., 2017; Stone et al., 2017; Trent et al. 2016; Zhang et al., 2019). Employees also believed after a

critical incident prompt debriefing with staff and support personnel was needed as well as immediate relief to recompose and access support (Stone et al. 2017; Trent et al., 2016; van Pelt et al., 2019). Specifically, Vanhaecht et al. (2019) found that if a critical incident occurred, screening away from the work area should take place immediately.

Many articles not only discussed where support was offered, but also with whom. One article by Burlison et al., (2017) found that employees desired a peer to be available at all times if needed. However, not all employees wish to talk to a peer or supervisor that they work with and prefer a peer that is from another department, a counselor, or group support (Stone et al., 2017). Three studies addressed that employees desired peer support from a trusted colleague if sought, rather than from a chaplain, counselor, or someone from an established EAP program (Burlison et al., 2017; Edrees et al., 2017; Hu et al., 2012). Employees who favored peer-to-peer support ranged from 75.7% to 88% (Baas et al., 2018; Burlison et al.,2017; Hu et al., 2012; Zhang et al., 2019; van Pelt et al., 2019) In four articles EAP only versus peer to peer support availability was the least desired among the staff surveyed (Burlison et al. 2017; Edrees et al. 2017; Stone et al., 2017, van Pelt et al. 2019).

Willingness and perceptions for second victim support programs

The third theme that arose in the literature was the willingness, perception, and preferences toward the use of peer support programs or hospital based EAP programs for critical incident events. Eight articles addressed the need for peer-support programs, in which the majority of study participants reported such programs would be beneficial and even some reported a significant need (Burlison, et al., 2012; Dukhanin et al., 2018; Edrees et al., 2016; Lane et al., 2018; Hu et al., 2012; Trent et al., 2016.; van Pelt et al., 2019; Vanhaecht et al., 2019). Two articles addressed that anesthesia providers desired this type of program and found

anesthesia most likely to seek support out of the other specialty areas (van Pelt et al., 2019; Hu et al., 2012. Hu et al., 2012). Van Pelt et al. (2019) found 70.9% to 80.4% of CRNAs felt a support program would be beneficial and were willing to use the program if it existed.

Willingness of staff to use EAP or peer support programs in facilities that already had these were also reported throughout the literature. In two studies, the respondents reported that they would use peer-support and EAPs if they were available (Merandi et al., 2017; Zhang et al., 2019). In Rodriquez et al. (2018), clinicians reported a need for guidance from the organization on how to access and process information after a critical incident. In two articles, lack of management and colleague support for established programs resulted in increased employee absences, turnover rates, and effected quality of care (Merandi et al., 2017; Zhang et al., 2019). In one article by Edrees et al. (2017), safety representatives found that the peer assistance program could use refinement and programs were not used by employees as intended due to issues such as program knowledge and availability. Interestingly, increased knowledge of established peer-support programs led to increased use among CRNAs and equate to support of the protocols established for critical stress incidents (Stone et al., 2017).

Barriers to accessing for peer support

Barriers were identified as lack of availability of established peer support programs and opportunities to seek assistance (Dukhanin et al., 2018; Hue et al., 2012). Other barriers were based on perceptions or feelings toward seeking support assistance (Edrees et al., 2016; Merandi et al., 2017). Many studies expressed that healthcare professionals, whether there was an established program or not, had many barriers to accessing a support program for critical incidents or believing that an established program would be beneficial and worth the effort to make time to seek help (Dukhanin et al., 2018; Hue et al., 2012Edrees et al., 2016; Merandi et al.

2017). If an established program was thought to have some benefit then another issue was lack of time to go to a program (Dukhanin et al., 2018; Hu et al., 2012; Vanhaechet et al., 2019). Lack of time also contributed to delays in seeking help (Edrees et al., 2016; Merandi et al., 2017).

Another recurring barrier was lack of adequate knowledge or inaccurate information about EAPs or their peer-to-peer support resources (Stone et al., 2019; Edrees et al., 2017; Van Pelt et al., 2019; Vanhaechet et al., 2019; Zhang et al., 2019). One study by Han et al., (2016) found no clear definition of what an adverse event incident was and when it should be reported. Therefore, facilities who have established EAP and peer-support programs must ensure that their employees know about the program, how to access it, and clarify meaning and use for the program (Burlison et al., 2017; Dukhanin et al., 2018; Stone, 2017).

The barriers to seeking help moved from lack of time, knowledge, and availability to fear of repercussions for using established programs. Three articles addressed healthcare workers fear of punitive repercussions for reporting the need for emotional or psychological assistance (Edrees et al., 2016; Hu et al., 2012; Trent et al., 2016.; Vanhaechet et al., 2019). These punitive repercussions ranged from most to least common in occurrence starting with fear of litigation, lack of confidentiality or exposure, and facility disciplinary concerns (Edrees et al., 2016; Lane et al., 2018, Rodriquez et al., 2018, Trent et al., 2016; Hu et al., 2012; Vanhaechet et al., 2019). Two studies found that healthcare providers were not using a support program due to the perception that the program lacked quality, hours available, training, and the large-scale system seemed overwhelming (Edrees et al., 2017; Merandi et al., 2017). Two studies by Lane et al., (2018) and Dukhanin et al. (2018) found healthcare members did not want to access their facilities support programs due to these being used for things like substance abuse, addiction, performance, and having a stigma associated with them. Both studies reported that providers did

not want others to think that they could be obtaining services for something else other than second victim support (Lane et al., 2018; Dukhanin et al., 2018). In one study by Rodriquez et al. (2018), 37.7% of respondents were told to "keep quiet" after an event due to how they could be perceived and possible legal reasons by their manager or colleague. According to Zhang et al. (2019), only 1.1%-5.2% of the employees used the EAP program that was available with the greatest barrier to use being lack of support from colleagues and supervisors.

Availability of second victim peer support programs

Relating to the barriers theme found, was the lack of availability for facility led second victim support programs. Some established peer support programs had limited resources or their programs needed to be refined to offer support specifically to those identifying as second victims. In the facilities that had second victim programs there were varied reports of program effectiveness (Edrees et al., 2016).

Therefore, a notable challenge that healthcare personnel face in accessing peer-support was that facilities did not provide any program or set protocols. Many addressed the need and desire for any program ranging from establishing an EAP or the most preferred being a peer-support program (Baas et al., 2018; Burlison et al., 2017; Lane et al., 2018; Han et al., 2016; Hu et al., 2012; Rodriquez et al., 2018; Stone et al., 2017; Trent et al., 2016; van Pelt et al., 2019). Specifically, Stone et al. (2017), found that overall CRNAs desired at least some type of healthcare institution led second victim support program regardless of type. In Edrees et al. (2016) only 6 of 38 hospitals EAP programs were found to be effective and needed a second victim support component as a part of their established EAP program. Similarly, Zhang et al. (2019) discussed the need for improved organizational support of the EAP through extension of a second victim support program.

Edrees et al. (2016) and Merandi et al. (2017), found that programs with three-tier systems for peer support programs were well received. Edrees et al. (2016) specifically addressed how to improve the use of a program through education instead of attempting to improve perceptions of a program alone. Edrees et al. (2017) also found that through education and refinement, program access increased over 4 years from 1 call per month to around 4 calls per month. In contrast, Dukhanin et al. (2018), found only a minimal increase in use over 4 years after adding a peer-to-peer tier to their facility's support program.

Two hospital systems created programs designed specifically for the second victim phenomenon and provided support to those identified as a second victim. The programs forYou by Missouri University Health Care and the RISE by John Hopkins University, were created to support all program type preferences in a three tier system comprised of direct colleague support, trained peer-to-peer support, and advanced support such as the EAP (Scott, 2016; Edrees et al., 2017; Merandi et al., 2017: Manifuso, 2022). The peer to peer support in these programs emulate CRNA desired preferences for support and should be considered in EAP resources.

Summary

Overall, CRNAs like all healthcare professionals are at risk for developing the second victim phenomenon after experiencing a critical incident. Associated symptoms are significant and should prompt healthcare facilities to develop a supportive program that meets the needs of all employees to maintain patient safety, employee satisfaction, and retention. Programs must be well defined and education about them should be distributed to all staff to ensure knowledge of, usage, and clarify any misconceptions that could arise. Predominantly, employees desire peer support programs in their place of employment (Burlison et al., 2017; Edrees et al., 2017; Hu et al., 2012). The literature supports programs that have several components like EAP availability,

group, and peer-to-peer support like those from John Hopkins Hospital and Missouri Health Care System (Edrees et al., 2017; Merandi et al., 2017; Scott, 2019). Even after implementation of peer support programs, re-education and continued education sessions are needed for new staff and to remind current staff of program availability (Edrees et al., 2017; Stone, 2017). In Dukhanin et al. (2018), even though 94% of the staff believed in a benefit of a second victim support program, only 66% knew there was an existing second victim support program at their facility and only 65% were aware of the term second victim.

It is important that facilities make their employees aware of programs that are available for those who experience the second victim phenomena after an adverse event and explore staff program preferences to ensure adequate support is being given. In the CRNA population, these services could lead to decreased callouts, missed workdays, and better performance (Edrees, 2017; Stone 2019). Therefore, CRNA education and assessment of second victim support preferences is paramount.

Theoretical Model

The Health Promotion Model (HPM), developed by Dr. Nola Pender in 1982 with multiple revisions and updates since 2011 guided this project (Pender, 2011). This model was chosen because it describes health promotion as a dynamic multidimensional state in which a person's well-being is increased through changes in how they interact with their environment and not just an absence of disease, but through interactions with their environment (Pender, 2011). Nurse anesthetists experience events that lead to the second victim phenomenon with adverse psychological and physical symptoms affecting their overall wellbeing. When appropriate measures are taken, through education and desired support, they can overcome second victim related issues (Edrees, 2017).

The HPM further integrates two theories: the expectancy value and cognitive theories (Pender, 2011). The expectancy value theory describes how people perform actions to achieve goals and outcomes. When facilities and management support second victim education opportunities, CRNA wellbeing can be met through the second portion of Pender's theory: the social cognitive theory. The social cognitive theory states that people's thoughts are affected by their interactions with their environments, and for people to change behavior they have to change the way they think (Pender, 2011). Guiding concepts were considered such as personal influences, interpersonal influences, social support, role models, situational influences, and a commitment to a plan of action by the CRNA to access resources as a second victim. When CRNAs interact with their environments and have an unexpected outcome, they can access resources such as support programs and well-being can be restored. Therefore, CRNA's who have received education on the second victim phenomenon and support options available to them through EAPs, can have favorable healthy outcomes if utilized.

Methods

Design

This descriptive quantitative project assessed knowledge and perceptions of the second victim experience for CRNAs through an education session and validated SVEST survey. The education session occurred during a regularly scheduled conference meeting at a level one medical center to inpatient and outpatient CRNAs. After the education session was conducted, the PowerPoint slide presentation was sent out to CRNAs who attended the conference. Following the education session, inpatient and outpatient CRNAs received the SVEST survey to assess second victim experience and support option preferences. Student registered nurse anesthetists (SRNAs) attended the conference but were not included for the SVEST survey.

Translational Framework

The Plan Do Study Act (PDSA) model was used to evaluate CRNAs knowledge, perceptions and resources available for the second victim phenomenon. The PDSA was chosen due to applicability and usefulness in assisting with education improvement projects in a way that could lead to health improvement. The PDSA model flows in a clockwise circular algorithm and each portion of the process relates to the one before so that along the way every part is dependent on the previous step (Christoff, 2018; Deming, 2021).

For the "plan", a thorough literature review was completed about the second victim phenomenon, symptoms, program options, and current support available. The second step in the model of "do" included the education session and administration of the SVEST survey to determine if support program preferences were met and if changes were needed for the current EAP program. Next the third step of "study", was evaluation of the results of the survey to determine support preferences. Finally, the fourth step of "act "comprised of dissemination of CRNA second victim support preferences identified in this project to the EAP administrator.

Setting

The project was conducted at an 885-bed level one trauma medical and academic hospital located in an urban area in North Carolina. The medical center consists of five community hospitals, over 350 medical offices, a major teaching hospital and a children's hospital. This project included the main level one academic teaching center inpatient and outpatient surgical departments.

Sample

A convenience sample of 150 CRNAs employed in the inpatient and outpatient departments was obtained via the research department Redcaps survey tool. The CRNAs

employed at the organization as either full-time, part-time, or per-diem in the inpatient and outpatient departments were included. All inpatient and outpatient CRNAs regardless of age, sex assigned at birth, or experience were included. All other anesthesia providers were excluded from the survey.

Project Implementation

The 40-minute education session was conducted during a scheduled Wednesday inpatient and outpatient CRNA conference. The slide presentation included information regarding second victim occurrence, evidence-based programs that support the second victim, and current available EAP second victim support. The SVEST survey was administered immediately following the education session that assessed CRNA preferences for second victim support. Recommendations of CRNA preferences of desired evidence-based support for the second victim occurrence was disseminated to the EAP department along with second victim support program options supported in the literature. Lastly, the slide presentation from the education session was emailed to the inpatient and outpatient CRNA departments for future reference.

Data Collection

The SVEST survey was sent out immediately following the education session through REDCaps to inpatient and outpatient CRNAs. Two reminder emails to complete the SVEST survey were sent at one and two weeks after the session. Along with the SVEST survey, demographic questions included sex assigned at birth, department employed, and years of experience. The body of the email had a description about the survey, purpose, and informed consent describing that no risks, benefits, or payments were provided for completing this voluntary survey. Consent was voluntarily expressed when the CRNAs clicked on the survey.

Privacy was maintained by using the REDcaps system, the survey was sent anonymously, and did not include any identifying information. Responses remained anonymous and participation was completely voluntary. All data collected was kept on the secure UNCG Box data storage system in Excel format for data analysis.

Instruments. The second victim experience and support tool (SVEST) was used to measure CRNAs knowledge of the second victim, perceptions of support, and perceptions towards the established employee assistant program (EAP). The tool contains 29 questions relating to the second victim experience, symptoms associated, and perceptions toward facility support resources (Burlison et al., 2017). The SVEST tool has been used in several studies to assess healthcare worker's perceptions toward the second victim experience, desired support, and support received (Burlison et al., 2017; Edrees et al., 2016; Zhang et al., 2019).

The tool has been assessed for content validity, internal consistency, and construct validity with a confirmatory factor analysis in a previous research design validating the tool (Burlison et al., 2017). The population used in the article validating the SVEST tool included 303 healthcare participants with a Cronbach α reliability scores ranging from 0.61 to 0.89 for the survey questions (Burlison et al., 2017). The SVEST survey is attached (see Appendix A).

Data analysis

Statistical analysis was performed using Microsoft Excel version 15.23 software. The data was summarized using descriptive and inferential statistics. Inferential statistics were used to determine if any similarities in peer support and EAP support preferences between the inpatient and outpatient CRNA departments existed. Descriptive statistics of mean and standard deviation from four SVEST survey questions were analyzed for colleague support and EAP support preferences and were combined for both inpatient and outpatient CRNA department results. Four

questions from the SVEST survey were reviewed to highlight the second victim experience description.

Results

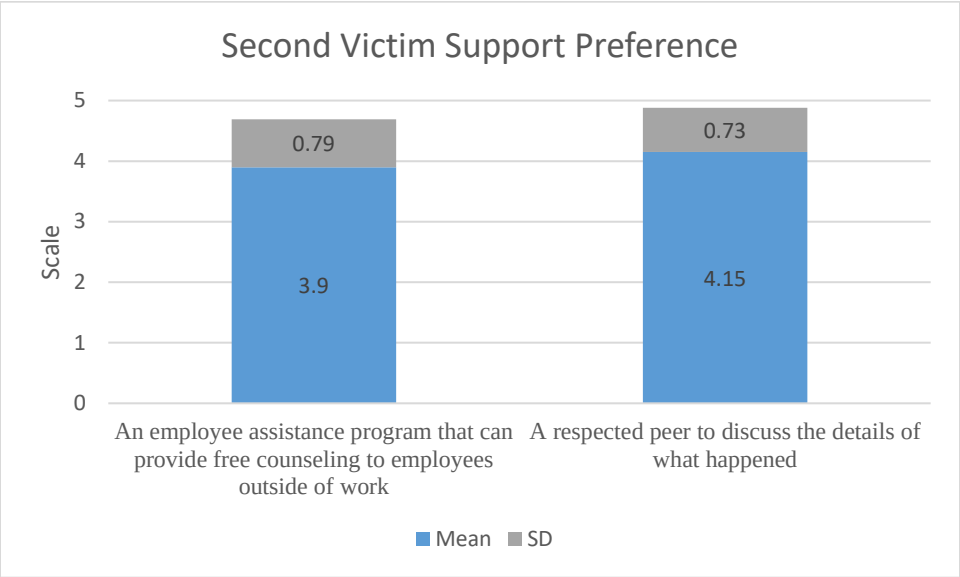
Of the 193 CRNAs invited to participate, 26 completed the SVEST survey. The CRNAs who completed the SVEST survey were outpatient CRNAs: 27% (n=7) and inpatient CRNAs: 73% (n=19). Information gathered on years of practice showed 46.2% (n=12) had less than 5 years, 19.2% (n=5) had 6-10 years, and 34.6% (n=9) had greater than 10 years of experience. There were 30.8% (n=8) male and 69.2% (n=18) female respondents represented.

Two SVEST questions were selected to determine if there were differences between inpatient and outpatient department support program type preferred: EAP or peer support (see Table 1). For the EAP support desirability, a two sample f-test, showed a p-value of 0.19 between in-patient and outpatient departments, therefore an additional t-test: two-sample assuming equal variances was used with a p-value of 0.43. Therefore, no difference can be established between inpatient and outpatient departments for EAP support preferences. For peer support desirability a two sample f-test, showed a p-value of 0.03 between inpatient and outpatient departments, therefore a t-test: two-sample assuming unequal variances was needed and provided a p-value of 0.95. Therefore, no difference can be established between inpatient and outpatient departments for peer support preferences. Figure 1 represents the data collected with both CRNA departments combined for these support preferences. Figure 1 shows that both EAP and peer support are highly desired by both departments.

Table 1 and Table 2 represent mean scores for EAP and peer support desirability combining both inpatient and outpatient departments on a 5-point Likert scale with 1 being the least desirable and 5 being the most-desirable. Since there were no determined variances noted in

support preferences between inpatient and outpatient departments, both mean scores were combined in Table 1 and Table 2. Table 1 represents data collected regarding preference for peer support since it was reported most desirable. Table 2 represents data collected regarding EAP and organizational support. Table 3 represents questions regarding second victim identifiers.

Figure 1



Note. Data represents both inpatient and outpatient CRNA departments. Inference made on SVEST (Second Victim Experience and Symptoms Tool). SD=standard deviation. Scale based on Likert scale of 1 (very undesirable) to 5 (very desirable)

Table 1

Colleague Support Preferences

SVEST Question	M	SD
I appreciate my coworkers' attempts to console me, but their efforts can come at the wrong time	2.88	0.9
Discussing what happened with my colleagues provides me with a sense of relief	4.15	0.88
My colleagues can be indifferent to the impact these situations have had on me	3	0.87
My colleagues help me feel that I am still a good healthcare provider despite any mistakes I have made	3.77	1.03

Note. M=mean. SD=standard deviation. Results based on 5-point Linkert scale with 1 (strongly disagree) to 5 (strongly agree).

Table 2

EAP Organization Support Preferences

SVEST Question	M	SD
My organization understands that those involved may need help to process and resolve any effects they may have on care providers	2.58	0.23
My organization offers a variety of resources to help me get over the effects of involvement in these instances	2.69	0.23
The concept of concern for the well-being of those involved in these situations is not strong at my organization	3.5	0.19

Note. M=mean.SD=standard deviation. Results based on 5-point Linkert scale with 1 (strongly disagree) to 5 (strongly agree).

Table 3

Second Victim Experience

SVEST Question	Mean	SD
I have experienced embarrassment from these instances	3.85	0.19
My involvement in these types of instances has made me fearful of future occurrences	3.65	0.2
My experiences have made me feel miserable	3.31	0.22
I feel deep remorse for my past involvement in these types of events	3.42	0.2

Note: SD=standard deviation. Results based on 5-point Linkert scale with 1 (strongly disagree) to 5 (strongly agree).

Discussion

It is important that all CRNAs feel supported when adverse events occur, especially those reporting physical and psychological symptoms from those events. Second victim education for CRNAs aligned with the HPM and promoted wellness through knowledge and resources that are evidence based. Current literature supports the education of CRNAs in terms of critical incidents, second victim occurrences, coping mechanisms, and support options with emphasis on peer support education and availability (Stone et al., 2017; Daniels et al., 2016). Such then, it is appropriate that the first step in helping CRNAs, who experience an adverse event, is to provide education in the definition of the second victim phenomenon and desired resources so that they can cope effectively.

According to the data collected, CRNAs reported feelings of embarrassment and fearful that an event may happen again. The literature supported that 70-79% of second victims experienced feelings of embarrassment and fearfulness (Edrees et al., 2017; Hu et al., 2012, van Pelt et al., 2019). Therefore, it can be deduced that these percentages represent admission of being involved in an adverse event. Many participants aligned with identifying as a second victim with feelings of misery and deep remorse which matches the term second victim in the literature and thus should be able to identify themselves as second victims and seek the desired support available to them.

It is important that CRNAs have their preferred desired support for second victimization. As shown in this project, most CRNA's desired peer and EAP support, with only slight preference to peer-support. The results are consistent with similar studies supporting desirability and preference toward peer-to-peer program support options at similar large hospital networks (Burlison et al., 2017; Edrees et al., 2017; and Hu et al., 2012). This project also suggests that after a critical incident, colleagues may or may not seem indifferent. When colleagues do offer to be supportive, results show that it is given at the wrong time. A part of peer-to-peer support training focuses on timing and active listening to avoid seeming indifferent and then addressing other's needs in a timely manner. Therefore, peer training should be offered to peer resource volunteers as a part of the peer-to-peer addition to the current EAP department (Scott et al., 2016).

The results of this project also demonstrated that CRNAs perceived lack of support for second victim experiences and limited support options available from the EAP department. According to the literature, a variety of support options, especially the three-tiered options, is important for second victim support effectiveness, allowing the healthcare member to cope in a

healthy way (Merandi et al., 2017; Edrees et al., 2017). Therefore, continued support and education about what the EAP department offers as well as the addition of a peer-support component to the EAP department should occur.

Limitations

This project had a few limitations which could create bias within the survey results. Since a convenience sample of CRNAs who are currently employed in the inpatient and outpatient departments at a large teaching facility was used, a selection bias was created and it would be inaccurate to say that the data represented all CRNAs or anesthesia providers as a whole. However, limiting various departments and clinical sites met the specific departmental education need and left room for peer support program initiation on a small scale so that challenges could be addressed and then expansion could later occur. There was also a low number of respondents 7.6% (n=27) which could have been related to a high employee turnover rate in the outpatient CRNA department, CRNAs being out on either paid or unpaid leave, and some employee turnover within the inpatient CRNA department. Other limitations were not adding specific questions asking if CRNAs identified as a second victim instead of surveying for second victim reactions and support preferences alone per the original SVEST survey. The addition of direct questioning would have provided the opportunity to see if after the education session CRNAs identified as a second victim instead of creating assumptions from the first four questions in the SVEST survey on second victim responses.

Recommendations for the Future

Future project's addressing CRNAs preferences and knowledge toward the "second victim" phenomenon and support preferences should consider system-wide preferences to obtain more survey responses so that better inferences can be made. The SVEST survey could be used

to further evaluate existing EAP program participation. Also, based on desirability, there should be a deployment of a peer support program and subsequently, the SVEST survey can be given to ascertain effectiveness after deployment.

Recommendations for Clinical Practice

Recommendations for clinical practice include ongoing yearly education for CRNAs regarding peer-to-peer support options in EAPs. Throughout the United States, there is a lack of the peer support component for second victim support in many hospital systems (Baas et al., 2018; Burlison et al., 2017; Lane et al., 2018; Han et al., 2016; Hu et al., 2012; Rodriquez et al., 2018; Stone et al., 2017, Trent et al., 2016; van Pelt et al., 2019). Therefore, since peer support options are most desired, the addition of a peer support component to this project site is recommended. Following implementation of a peer support program, the SVEST assessment tool should be used to further evaluate program implementation effectiveness.

Conclusion

Certified Registered Nurse Anesthetists are at risk for developing the second victim phenomenon after a critical incident which can have negative effects for organizations, patients, and themselves. Continuing education programs for CRNAs related to the second victim phenomenon are lacking despite support from the literature. These education programs should be mandatory so that CRNAs perceptions and knowledge about the second victim can be established with positive outcomes. Tools such as the SVEST survey can be used to reassess these education programs and their effectiveness. Desired support options including EAP and peer-to-peer support should be made available in all institutions as supported by this project and the literature.

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Appendix A

Second Victim Experience and Support Survey

Participant ID	_____
What is your gender?	◯ Male ◯ Female
How long have you worked as a healthcare provider?	◯ Less than 1 year ◯ 1-5 years ◯ 6-10 years ◯ Greater than 10 years
What is your current primary role?	◯ Attending Physician ◯ Certified Registered Nurse Anesthetist ◯ Manager/Leader ◯ Pharmacist ◯ Registered Nurse ◯ Resident/Fellow ◯ Student ◯ Technician (surgical, anesthesia, other) ◯ Other

This survey will evaluate your experiences with adverse patient safety events. These incidents may or may not have been due to error. They also may or may not include circumstances that resulted in patient harm or even reached the patient (i.e., near-miss patient safety events).
Please indicate how much you agree with the following statements as they pertain to yourself

	Strongly disagree	Disagree	Neither agree or disagree	Agree	Strongly agree
I have experienced embarrassment from these instances	◯	◯	◯	◯	◯
My involvement in these types of instances has made me fearful of future occurrences	◯	◯	◯	◯	◯
My experiences have made me feel miserable	◯	◯	◯	◯	◯
I feel deep remorse for my past involvements in these types of events	◯	◯	◯	◯	◯

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Participant ID	_____
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I have experienced embarrassment from these instances	◯	◯	◯	◯	◯
My involvement in these types of instances has made me fearful of future occurrences	◯	◯	◯	◯	◯
My experiences have made me feel miserable	◯	◯	◯	◯	◯
I feel deep remorse for my past involvements in these types of events	◯	◯	◯	◯	◯

Colleague Support	Strongly disagree	Disagree	Neither agree or disagree	Agree	Strongly agree
I appreciate my coworkers' attempts to console me, but their efforts can come at the wrong time	○	○	○	○	○
Discussing what happened with my colleagues provides me with a sense of relief	○	○	○	○	○
My colleagues can be indifferent to the impact these situations have had on me	○	○	○	○	○
My colleagues help me feel that I am still a good healthcare provider despite any mistakes I have made	○	○	○	○	○

Supervisor Support	Strongly disagree	Disagree	Neither agree or disagree	Agree	Strongly agree
I feel that my supervisor treats me appropriately after these occasions	○	○	○	○	○
My supervisor's responses are fair	○	○	○	○	○
My supervisor blames individuals	○	○	○	○	○
I feel that my supervisor evaluates these situations in a manner that considers the complexity of patient care practices	○	○	○	○	○

Institutional Support & Non-Work-Related Support	Strongly disagree	Disagree	Neither agree or disagree	Agree	Strongly agree
My organization understands that those involved may need help to process and resolve any effects they may have on care providers	○	○	○	○	○
My organization offers a variety of resources to help me get over the effects of involvement with these instances	○	○	○	○	○

The concept of concern for the well-being of those involved in these situations is not strong at my organization	○	○	○	○	○

	Strongly disagree	Disagree	Neither agree or disagree	Agree	Strongly agree
I look to close friends and family for emotional support after one of these situations happens	○	○	○	○	○
The love from my closest friends and family helps me get over these occurrences	○	○	○	○	○

Professional Self-efficacy

	Strongly disagree	Disagree	Neither agree or disagree	Agree	Strongly agree
Following my involvement I experienced feelings of inadequacy regarding my patient care abilities	○	○	○	○	○
My experience makes me wonder if I am not really a good healthcare provider	○	○	○	○	○
After my experience, I became afraid to attempt difficult or high-risk procedures	○	○	○	○	○
These situations do not make me question my professional abilities	○	○	○	○	○

Turnover Intentions & Absenteeism

	Strongly disagree	Disagree	Neither agree or disagree	Agree	Strongly agree
My experience with these events has led to a desire to take a position outside of patient care	○	○	○	○	○
Sometimes the stress from being involved with these situations makes me want to quit my job	○	○	○	○	○

	Strongly disagree	Disagree	Neither agree or disagree	Agree	Strongly agree
My experience with an adverse patient event or medical error has resulted in me taking a mental health day	○	○	○	○	○

I have taken time off after one of these instances occurs	○	○	○	○	○

Desired Forms of Support. Please indicate your level of desirability for the following types of support that could be offered by your organization for those who have been negatively affected by their involvement with an adverse patient safety event. These incidents may or may not have been due to error. They also may or may not include circumstances that resulted in patient harm or even reached the patient (i.e., near-miss patient safety events).

	Very undesirable	Undesirable	Neutral	Desirable	Very desirable
The ability to immediately take time away from my unit for a little while	○	○	○	○	○
A specified peaceful location that is available to recover and recompose after one of these types of events	○	○	○	○	○
A respected peer to discuss the details of what happened	○	○	○	○	○
An employee assistance program that can provide free counseling to employees outside of work	○	○	○	○	○
A discussion with my manager or supervisor about the incident	○	○	○	○	○
The opportunity to schedule a time with a counselor at my hospital to discuss the event	○	○	○	○	○
A confidential way to get in touch with someone 24 hours a day to discuss how my experience may be affecting me	○	○	○	○	○