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The second victim experience and support tool (SVEST): Validation of an organizational resource for assessing second victim effects and the quality of support resources

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Abstract

Objectives—Medical errors and unanticipated negative patient outcomes can damage the well-being of healthcare providers. These affected individuals, referred to as “second victims,” can experience various psychological and physical symptoms. Support resources provided by healthcare organizations to prevent and reduce second victim–related harm are often inadequate. In this study, we present the development and psychometric evaluation of the Second Victim Experience and Support Tool (SVEST), a survey instrument that can assist healthcare organizations to implement and track the performance of second victim support resources.

Methods—The SVEST (29 items representing 7 dimensions and 2 outcome variables) was completed by 303 healthcare providers involved in direct patient care. The survey collected responses on second victim–related psychological and physical symptoms and the quality of support resources. Desirability of possible support resources was also measured. The SVEST was assessed for content validity, internal consistency, and construct validity with confirmatory factor analysis (CFA).

Results—CFA results suggested good model fit for the survey. Cronbach's alpha reliability scores for the survey dimensions ranged from 0.61 to 0.89. The most desired second victim support option was “A respected peer to discuss the details of what happened.”

Conclusions—The SVEST can be used by healthcare organizations to evaluate second victim experiences of their staff as well as the quality of existing support resources. It can also provide healthcare organization leaders with information on second victim–related support resources most

preferred by their staff. The SVEST can be administered before and after implementing new second victim resources to measure perceptions of effectiveness.

Introduction

Witnessing patient harm is a difficult, yet expected, experience for healthcare providers. However, the shock from unanticipated patient harm or medical error involvement, especially errors that result in patient injury, can be particularly damaging to one's well-being. Most studies on unanticipated or preventable patient harm cite the need for additional support services for those affected by the symptoms associated with medical error involvement.¹⁻¹⁴ In 2000, Wu introduced the term "second victim" to describe these individuals (with patients being the first victims).¹⁵ Since then, others have adopted this term and much research has been published on this topic.^{2,16-19} The second victim phenomenon can be intense and multilayered, and can include emotional trauma such as guilt, perceptions of professional incompetence, and self-doubt as well as physical symptoms such as fatigue, insomnia, and nausea.^{1-3,10,11,15-18,20,21} Such symptoms not only affect the emotional and psychological state of healthcare providers but also cause fear and uncertainty regarding their professional abilities.^{1,3,8,10,16,18}

Perhaps the first well-known publication detailing a second victim's experience is a 1984 report describing a physician's first-person account of a medical error that resulted in significant and long-lasting psychological damage.⁵ In the article, the author expressed concern about the punitive culture of the medical field in which the acknowledgment of mistakes is taboo. He identified a need for change within the medical profession that would create a safety net for the needs of healthcare professionals involved in medical errors. Other anecdotal articles have highlighted the second victim phenomenon and initiated a call to action from the medical community.^{1,6,10,16,22} Several studies have emphasized the inadequacy of the institution in providing interventions and support mechanisms to aid healthcare workers after an adverse safety event or medical error.^{1,3-5,8,10,12,16,21-25} In other studies, healthcare personnel reported a desire for, yet a lack of, peer or supervisor support to overcome their second victim-related trauma.^{2,3,12,16,18,26}

There is a pressing need for healthcare organizations to invest in support resources and programs in order to reduce or prevent the consequences of second victim experiences.¹⁸ Because the implementation and maintenance of supportive interventions for second victims are time consuming and costly, it is important that they are developed keeping in mind the unique needs of the organization and its culture. Effectively measuring outcomes related to second victim experiences and the quality of organizational support resources can identify areas for opportunity and growth. Research has identified the symptoms of a second victim experience and the forms of support these individuals desire.^{9,16,17,19,26-28} This has been achieved through qualitative techniques such as semistructured interviews^{28,29} and group discussions³⁰, as well as quantitatively through questionnaires.^{10,11,18,31,32} However, there are currently no validated survey tools to evaluate second victim experiences and the adequacy of support resources. Thus, the purpose of this study was to develop and validate the Second Victim Experience and Support Tool (SVEST), a survey instrument that can assist healthcare organizations in implementing and tracking the performance of support

resources for second victims. This study is the first to report the results of a survey that has been validated through assessments of content validity, construct validity, and internal consistency.

Methods

Setting, Procedure, and Participants

This study was conducted in 2013 at a specialized pediatric hospital treating children with catastrophic illnesses. The study was reviewed and approved by the hospital's institutional review board. The sampling strategy was to administer the survey to all healthcare providers involved in direct patient care, from all work shifts, with the intent of including all members of the healthcare team who could be potential second victims.¹⁸ Based on this criterion, 983 staff members including, but not limited to, nurses, physicians, pharmacists, and medical technicians were invited to participate in the survey. Participants were invited to complete the questionnaire through email and other internal communications. To encourage participation, invitations to participate were authored and delivered by senior hospital leaders as well as supervisors of the targeted participants. Consent to participate was obtained electronically, and participants were informed that their responses would be kept confidential and anonymous. An online version of the SVEST was created with the items randomized for each participant to prevent ordering effect biases. (See Appendix for participant instructions, scoring instructions, and the full version of the survey.) The developed questionnaire was administered along with the Agency for Healthcare Research and Quality (AHRQ) Hospital Survey on Patient Safety Culture (HSPSC), as the HSPSC is regularly administered at the study hospital.³³ The HSPSC is a widely used measure of patient safety culture, and the most recent summary of benchmark data maintained by the AHRQ cites responses from more than 1100 US hospitals.³⁴ The survey concluded with a debriefing page, which detailed the purpose of the current research and also contained a list of currently available second victim support resources at the study hospital.

Questionnaire development

The study used Hinkin's guide for developing questionnaires³⁵, which is well cited and recognized as a cornerstone piece in survey design. For this study, the first 4 steps of Hinkin's 6-step process were used: 1) item generation, 2) questionnaire development, 3) initial item reduction, and 4) confirmatory factor analysis (CFA). Steps 5 and 6 of assessing convergent and discriminant validity and then attempting replication were not included in this study.

Defining the second victim experience

After Wu coined the term "second victim," subsequent studies provided detailed descriptions of the second victim experience. Wu emphasized that cases in which systematic errors lead to patient harm can also be damaging to physicians, causing them to experience negative emotional and physical responses.¹⁵ Others added to the description of the second victim experience, citing the agonizing feelings of making a serious mistake, the fear of being exposed, and the uncertainty of what to do.³⁶ Denham expanded the list of possible

second victims beyond physicians to include other members of the healthcare team, such as nurses and pharmacists.²

Most research on second victims has focused on the deleterious effects of medical error involvement on caregivers.¹⁻¹⁴ However, second victim responses and experiences are not restricted to medical errors, and they are now applied more broadly to include any unanticipated adverse patient event within the context of the clinical setting.¹⁷ Moreover, second victim responses are not limited to incidents that result in patient harm. One study reported that approximately one third of participants who had been involved in only “near-miss” adverse events had various second victim symptoms such as insomnia, anxiety about future errors, and decreased job satisfaction.¹⁰

Although second victims have been well characterized for several years, a formal definition was given in 2009 by Scott et al.:

A second victim is a health care provider involved in an unanticipated adverse patient event, medical error and/or a patient-related injury who become victimized in the sense that the provider is traumatized by the event. Frequently, second victims feel personally responsible for the unexpected patient outcomes and feel as though they have failed their patients, second-guessing their clinical skills and knowledge base.¹⁸

In this definition, the term “health care provider” broadens the scope of potential second victims to include anyone who provides direct patient services. The definition by Scott et al. was used for our study.

Dimension and item generation

The development of the survey dimensions was based on a thorough search of the literature where relevant constructs relevant to the second victim experience were identified. MEDLINE, Google Scholar, and PsychINFO were searched with combinations of terms relevant to the second victim phenomenon (e.g., *medical errors, mistakes, second victim, adverse patient events, patient safety, healthcare provider, well-being*). The study authors (one of whom has extensively published on the subject and is the director of a second victim program at a large healthcare institution) had meetings to review survey content, with numerous iterations designed and revised survey dimensions established. The final list was agreed upon unanimously by the authorship group and included 7 dimensions to measure second victim responses and support characteristics and 2 additional work-related outcomes frequently cited in the second victim literature. Measuring these outcomes specific to second victim experiences is important as they have been linked to organizational costs.^{37,38} The 7 dimensions were *psychological distress, physical distress, colleague support, supervisor support, institutional support, non-work-related support, and professional self-efficacy*. The 2 outcome variables were *turnover intentions* and *absenteeism*. Items were written to reflect first-person perceptions of each dimension, and responses were measured on 5-point Likert scales, with anchors ranging from 1 (“strongly disagree”) to 5 (“strongly agree”).

Additional items measuring the preference of second victim support resources were also created. Collecting opinions from staff regarding the most preferred forms of support can

provide organization-specific direction for adding resources for second victims. Seven support options were included in our instrument (e.g., “A respected peer to discuss the details of what happened”), and desirability of support options was measured by items anchored on a 5-point Likert scale ranging from 1 (“strongly do not desire”) to 5 (“strongly desire”).

Assessing content validity

Although statistical tests such as CFA are effective for assessing a survey's construct validity, structured assessments of content validity are also essential. After the initial survey items were written, 9 individuals (3 nurses, 3 physicians, and 3 pharmacists) not part of the research team were recruited to participate in a content validity assessment exercise that has been previously published.³⁹ Each participant was provided a randomized list of the items and dimensions and was instructed to match the items to the dimension he/she felt had the greatest perceived “fit.” Participants also provided feedback on the overall readability of the items. Agreement indices were then calculated based on the percentage of respondents who correctly classified each item with the construct it was designed to measure. Items with an inter-rater agreement of less than 70% were assessed to be removed, assigned to a different construct, or revised to better represent the original construct. Three items fell below the minimum criteria. The first item (“I have experienced embarrassment from these instances”) was reassigned from *professional self-efficacy* to *psychological distress*. The second item (“My involvement with an adverse event or medical error has contributed to thoughts about changing my care specialty”) regarding *turnover intentions* had 66% agreement and was removed, as it was determined that *turnover intention* could be adequately measured by its remaining items. The third item below the 70% inter-rater agreement remained as originally written. The item, “My experience with these occurrences can make it hard to sleep regularly,” was attributed to either *physical distress* or *psychological distress*, which is expected given the potential effect of psychosomatic responses.^{19,40,41} Overall, there was 78% inter-rater agreement among participants in the content validity assessment exercise.

Through this review, 30 items remained to reflect the 7 dimensions and 2 outcome variables associated with a second victim experience and levels of desired support. (See Appendix that contains the full version of the final survey with instructions for participants and scoring.) Examples of items in the 7 dimensions were “I feel deep remorse for my past involvements in these type of events” (*psychological distress*), “Thinking about these situations can make it difficult to have an appetite” (*physical distress*), “Discussing what happened with my colleagues provides me with a sense of relief” (*colleague support*), “I feel that my supervisor evaluates these situations in a manner that considers the complexity of patient care practices” (*supervisor support*), “My organization understands that those involved may need help to process and resolve any effects they may have on care providers” (*institutional support*), “The love from my closest friends and family helps me get over these occurrences” (*non-work-related support*), and “Following my involvement I experienced feelings of inadequacy regarding my patient care abilities” (*professional self-efficacy*). Examples of items in outcome variables were “My experience with these events has led to a desire to take a position outside of patient care” (*turnover intentions*) and “My experience with an adverse patient event or medical error has resulted in me taking a mental health day” (*absenteeism*).

The factorial structure of the survey was assessed by CFA, using AMOS version 4.0. Fit indices used to evaluate model fit were chi-square, comparative fit index (CFI), and root mean square error of approximation (RMSEA). CFI and RMSEA have been commonly used to report CFA results and are considered superior to other fit metrics (e.g., goodness of fit index) because of their insensitivity to sample sizes.⁴²

Results

Demographics and missing data

Of the 983 healthcare providers who were invited to participate, 305 (31%) responded to the survey. Data were missing in 2.1% of total responses, which is below the cited 5% missing data convention.^{43,44} Surveys in which 3 or more responses were missing were excluded from the final analysis sample, yielding a final sample of 281 (Table 1). Table 2 provides sample tenure by hospital, work unit, and specialty. The remaining missing values were replaced using multiple imputation. This is a well-established technique used to replace missing data that generates values that closely reflect the nature of the sample's responses.⁴⁵⁻⁴⁷

Confirmatory factor analysis

CFA analysis indicated a reasonable fit of the original model ($\chi^2 = 662.79$, $df = 278$, $p < 0.01$, CFI = 0.890, RMSEA = 0.070), but the results were slightly lower than the traditional conventions for CFI (CFI > 0.90).⁴⁸ To improve the model fit, Cronbach's alpha reliability statistics were reviewed. Item 3 from *non-work-related support* ("I look to close friends and family for emotional support after one of these situations happens") negatively affected the Cronbach's alpha reliability score of this dimension. Removing this item improved the overall fit of the model ($\chi^2 = 566.06$, $df = 254$, $p < 0.01$, CFI = 0.910, RMSEA = 0.066) and the reliability of the *non-work-related support* dimension. Therefore, the final survey had 25 items measuring the 7 dimensions and 2 items for each outcome variable (*turnover intentions* and *absenteeism*). Table 3 lists the loadings for the 25 items in the final 7-factor model, each item being above the convention loading level of 0.40 in order to justifiably align it with a construct.⁴⁹

Descriptive statistics and reliability results

Consistent with the instructions to score the survey responses (see Appendix) according to which the percentage of respondents who agreed (i.e., selected *agree* or *strongly agree*) with items is calculated, Table 4 lists the respondent agreement percentages, means, standard deviations, and internal consistency estimates for each dimension and outcome variable. For the survey dimensions, the percentage of agreement ranged from 1.0% for *colleague support* (i.e., the percentage of respondents who felt colleague support for second victim-related experiences was poor) to 10.3% for *physical distress* (i.e., the percentage of respondents who experienced physical distress from a second victim-related experiences). The percentage of respondents who experienced second victim-related turnover intentions was 9.6% and second victim-related absenteeism was 7.1%. Cronbach's alpha scores for the measures ranged from 0.61 (*coworker support*) to 0.87 (*supervisor support*). Scores on all survey dimensions and outcome variables were greater than 0.70, with the exception of

colleague support and *organizational support*. As it was likely that certain items from these dimensions were responsible for the low scores, items were systematically dropped and reliability was reassessed. However, this technique did not improve the Cronbach's alpha scores for these dimensions and they were retained as originally written.

Support options

Consistent with the scoring instructions provided in the appendix, Table 5 lists the desirability, means, and standard deviations of the 7 support options. Of the 7 support options in the questionnaire, “A respected peer to discuss the details of what happened” was rated the most desired (80.5% desired, 4% not desired, mean = 4.06, SD = 0.91) and “The opportunity to schedule a time with a counselor at my hospital to discuss the event” was rated as the least desired (48% desired, 20.7% not desired, mean = 3.33, SD = 1.10) form of support. However, the means for all support options were above the neutral, “neither agree nor disagree”, rating of 3 (Table 5).

Discussion

Although the second victim phenomenon is relatively recent in healthcare literature, the theoretical concept of resilience is well established in developmental and clinical psychology.^{50,51} At the individual level, resilience is one's capacity to cope with stress and stressors within his or her environment and the ability to interact in a manner to promote personal well-being.⁵² Attainment of effective coping skills as a powerful “survival” method is a defining characteristic of a resilient individual.^{53,54} Supportive interventions for second victims serve as protective factors that can enhance coping skills and optimize the recovery of clinicians suffering the impact of an unanticipated clinical event.⁵¹

Many second victims express feelings of failing the patient and doubts over their chosen career path.^{55,56} Healthcare professionals who are second victims have left their chosen profession, and sadly some have turned to suicide to end their suffering.⁵⁷ It is estimated that almost half of the healthcare providers have had a second victim experience during their professional careers, making it essential for healthcare institutions to provide structured support mechanisms to mitigate suffering and promote optimal healing for second victims.⁵⁸ This study provides organizational leaders with an instrument that can direct and complement efforts to reduce and prevent the negative consequences of second victim related responses. The SVEST may also be used in research contexts as a comparative tool across organizations, so that inter-organizational second victim related characteristics can be reviewed in a generalizable format.

Accurate assessment of the depth and breadth of opportunities for improvement is a fundamental component in the cycle of organizational learning. For example, our data suggest that roughly 30 (10.3%) respondents experienced physical distress and 22 (7.4%) experienced psychological distress from a second victim experience. These findings have implications for patient safety, as the effects of a second victim experience place the healthcare provider at risk for committing medical errors. This risk is present both shortly after the eliciting incident and in the longer term because it can reduce the healthcare provider's confidence to engage in risky procedures.^{10,17} Taking this into consideration,

SVEST results can motivate hospital leaders to create additional programs to address second victim–related harm. Furthermore, by assessing the quality of support resources, SVEST can help pinpoint areas for improvement within the organization. For example, our results indicate that coworkers were rarely perceived as poor resources for the support of second victims (i.e., only 1% of respondents agreed with these items), but that there is opportunity for growth in developing more effective resources at the organizational level (5.3% agreement). The SVEST also connects second victim responses directly to turnover intentions and absenteeism, both of which are costly organizational outcomes.^{37,38} By making such proximal connections of these outcomes to second victim experiences, these results can aid in justifying the need for an organization to invest in support resources. As a second victim program becomes established, reductions in these scores may be witnessed over time, which could further substantiate efforts to reduce and prevent negative outcomes.

An additional benefit of this instrument is its ability to provide a site-specific understanding of the second victim support options most desired by personnel. The 7 support resources in the SVEST represent those that have been implemented or desired in previous studies.^{1,5,10,16,18,59} One study detailed the successful implementation of a second victim program, which provides meaningful anecdotal information for other organizations.¹⁸ A key feature of the described program is the ability to meet with a peer to discuss a second victim experience. However, that program is housed in a multisite institution, which may allow second victims to meet with peers they work with only sometimes or not at all. Medical errors are often the catalyst of second victim responses and staff at a smaller, single-site healthcare organization may be less motivated to discuss these details with a colleague they frequently work alongside. The SVEST allows for this presumption to be tested empirically, which is novel and meaningful to both researchers and hospital leaders designing second victim support resources.

Although best practices were used to develop the SVEST, this study has some limitations. Data were collected at a pediatric hospital, which may limit the generalizability of our results. However, our results on support resource preferences are comparable with those from another study conducted in a general patient setting, wherein peer support for second victims was widely desired by staff.¹⁸ Future studies confirming the results of the current validity assessments in a broader, non-pediatric context may strengthen the design of the instrument. While the participants recruited for the content validity assessment exercise was an equal number of nurses, physicians, and pharmacists, our full sample was largely comprised of nurses (44.1%). We recommend that future research specifically target physicians and pharmacists for a more complete assessment of SVEST reliability and validity in these subgroups. Two dimensions of the SVEST, *colleague* and *institutional support*, had Cronbach's alpha scores lower than the acceptable reliability coefficient of 0.70. In future studies, we can modify these items in an attempt to increase their scores. Nevertheless, the item loading values for all items in these dimensions were greater than the recommended value of 0.4 (Table 3). However, 3 of the items in these dimensions had loading values lower than 0.5, and revising these items may improve reliability statistics as well as overall CFA model fit.

One reason for the survey's low response rate of 31% may be that the SVEST was administered in conjunction with the AHRQ HSPSC, which had a response rate of only 34%. The SVEST was always presented to respondents after the HSPSC. A potential implication of the low response rate of the SVEST is that responses from many healthcare providers who had second victim experiences were not included in the analysis. Yet, there is little evidence that respondents self-selected out of taking the SVEST because of its content (i.e., hesitance to respond to items pertaining to experiences with errors and adverse events). This notion is supported in that respondents were briefed on the topics of the SVEST only after they completed the HSPSC. In this regard, a 3% drop in our response rate is encouraging.

Although research on second victims has largely focused on the negative consequences of associated adverse events, there is some evidence to support that medical error involvement is related to desirable outcomes. One study reported that second victim experiences led nurses and physicians to increase their vigilance to safety in clinical practices and improve coworker relationships.⁶⁰ A potential future direction of research is to identify the dimensions of the SVEST that relate to positive outcomes in order to provide a more comprehensive view of the effects of a second victim experience to SVEST users.

Best survey design practices recommend the use of each stage of the Hinkin guide for developing measures, but in our study we omitted steps 5 and 6 that assess convergent/discriminant validity and replication. Although the determination of convergent and discriminant validity may bolster the overall validity of our questionnaire, this will be difficult to achieve given that this is the first known measure of the second victim experience that has been attempted to be validated as structurally fit.

Although the developed questionnaire can provide useful information on the extent of distress faced by second victims at a healthcare organization and the quality of available resources, it is merely one tool to be used in the assessment and treatment of second victims. We recommend that those who use this survey to follow-up with participants through methods such as interviews and focus groups to further understand the second victim experiences of their staff.

Conclusion

As healthcare organizations are investing more resources in programs to support second victims, it is important for them to have accurate information to substantiate and guide the development of such programs. Our study provides preliminary support for the SVEST as a reliable and valid instrument to obtain this information. The SVEST can be used by healthcare leaders to guide the implementation of new second victim resources, assess the quality of support resources, and track the performance of second victim programs over time.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

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Table 1
Participants (*N* = 281) by staff position

Staff Position	<i>N</i>	%
Registered Nurse	124	44.1
Physician Assistant/Nurse Practitioner	9	3.2
LVN/LPN	9	3.2
Patient Care Assistant/Hospital Aide/Care Partner	4	1.4
Attending/Staff Physician	24	8.5
Resident Physician/Physician in Training	3	1.1
Pharmacist	24	8.5
Dietician	2	0.7
Unit Assistant	1	0.4
Respiratory Therapist	1	0.4
Physical, Occupational, or Speech Therapist	4	1.4
Technician (e.g., Electrocardiography, Lab, Radiology)	15	5.3
Management	23	8.2
Other	38	13.5

LVN, licensed vocational nurse; LPN, licensed practical nurse.

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Table 2
Participants' (N = 281) sample tenure in years by hospital, work unit, and specialty

Years	Hospital [N (%)]	Work Unit [N (%)]	Specialty [N (%)]
<1	30(11)	41(15)	11(4)
1 to 5	84(30)	110(39)	62(22)
6 to 10	61(22)	61(22)	54(19)
11 to 15	54(19)	39(14)	41(15)
16 to 20	18(6)	15(5)	37(13)
21+	32(11)	14(5)	75(27)

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Table 3
Survey item loadings for the revised 7-factor model with 25 items

Variable	Psychological Distress	Physical Distress	Colleague Support	Supervisor Support	Organizational Support	Non-work-related support	Professional Self-Efficacy
I have experienced embarrassment from these instances.	.735						
My involvement in these types of instances has made me fearful of future occurrences.	.694						
My experiences have made me feel miserable.	.780						
I feel deep remorse for my past involvements in these types of events.	.709						
The mental weight of my experience is exhausting.		.805					
My experience with these occurrences can make it hard to sleep regularly.		.827					
The stress from these situations has made me feel queasy or nauseous.		.725					
Thinking about these situations can make it difficult to		.780					

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Variable	Psychological Distress	Physical Distress	Colleague Support	Supervisor Support	Organizational Support	Non-work-related support	Professional Self-Efficacy
have an appetite.							
I appreciate my coworkers' attempts to console me, but their efforts can come at the wrong time.			.564				
Discussing what happened with my colleagues provides me with a sense of relief.			.485				
My colleagues can be indifferent to the impact these situations have had on me.			.433				
My colleagues help me feel that I am still a good healthcare provider despite any mistakes I have made.			.614				
I feel that my supervisor treats me appropriately after these occasions.				.804			
My supervisor's responses are fair.				.840			
My supervisor blames individuals.				.681			
I feel that my supervisor				.845			

Variable	Psychological Distress	Physical Distress	Colleague Support	Supervisor Support	Organizational Support	Non-work-related support	Professional Self-Efficacy
evaluates these situations in a manner that considers the complexity of patient care practices.							
My organization understands that those involved may need help to process and resolve any effects they may have on care providers.					.800		
My organization offers a variety of resources to help me get over the effects of involvement with these instances.					.703		
The concept of concern for the well-being of those involved in these situations is not strong at my organization.					.410		
I look to close friends and family for emotional support after one of these situations happens.						.680	
The love from my closest friends and family helps me get over						.965	

Variable	Psychological Distress	Physical Distress	Colleague Support	Supervisor Support	Organizational Support	Non-work-related support	Professional Self-Efficacy
these occurrences.							
Following my involvement I experienced feelings of inadequacy regarding my patient care abilities.							.858
My experience makes me wonder if I'm not really a good healthcare provider.							.817
After my experience, I became afraid to attempt difficult or high-risk procedures.							.688
These situations don't make me question my professional abilities.							.401

Table 4
Agreement, means, standard deviations (SD), and Cronbach's alpha reliability scores (α) for dimensions and outcome variables

Variable	% Agreement	Mean	SD	α	Number of items
1. Psychological Distress	7.4	2.62	1.06	0.83	4
2. Physical Distress	10.3	2.32	1.03	0.87	4
3. Colleague Support	1	2.23	0.63	0.61	4
4. Supervisor Support	2.8	1.89	0.88	0.87	4
5. Institutional Support	5.3	2.34	0.80	0.64	3
6. Non-Work-Related Support	2.1	2.41	1.02	0.84	2
7. Professional Self-Efficacy	7.8	2.50	0.88	0.79	4
8. Turnover Intentions	9.6	2.08	1.17	0.81	2
9. Absenteeism	7.1	1.81	1.08	0.88	2

Table 5
Desirability, means, and standard deviations (SD) for the support options chosen by participants

Support Option	% Desired	% Not Desired	Mean	SD
1. A respected peer to discuss the details of what happened	80.5	4	3.59	1.15
2. A discussion with my manager or supervisor about the incident	73.8	9	3.75	0.98
3. A specified peaceful location that is available to recover and recompose after one of these types of events	67.1	10.5	4.06	0.91
4. The ability to immediately take time away from my unit for a little while	64	15.9	3.68	1.06
5. An employee assistance program that can provide free counseling to employees outside of work	62.4	12.4	3.88	0.98
6. The opportunity to schedule a time with a counselor at my hospital to discuss the event	48	20.7	3.32	1.10
7. A confidential way to get in touch with someone 24 hours a day to discuss how my experience may be affecting me	47.5	20.5	3.34	1.09

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