Case: A Second Victim Support Program in Pediatrics: Successes and Challenges to Implementation

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ABSTRACT

Purpose: While there is growing attention to making health care safer, there has been less emphasis on helping health care workers to cope with stressful patient related events (these workers are commonly referred to as second victims). We used the RISE (Resilience In Stressful Events) peer support program at the Johns Hopkins Hospital as a case study for evaluating effectiveness, and identifying barriers to addressing the needs of second victims.
Design and Methods: The study used a mixed-method approach that included: 1) quantitative analysis of surveys of health care workers in the Department of Pediatrics before RISE implementation and four years after, and 2) content analysis of open-ended commentaries about respondents' experience with seeking second victim support, as well as feedback on RISE.
Results: Survey response rates were 22.4% and 23.3% respectively. Quantitative analysis showed that respondents at the later time point were more likely to contact an organizational support structure, and had greater awareness of the availability of support. Respondents were very likely (93%) to recommend RISE to others. Content analysis identified barriers to using RISE: overcoming blame culture, need to promote the initiative, and need for more staff time to handle adverse events. Respondents reported varied preferences for the support format and specific support interventions.
Conclusions: The mixed-method approach allowed a comprehensive evaluation of RISE and provided some evidence for its effectiveness in supporting pediatric health care workers.
Practice Implications: The findings suggest an important role of organizational culture in second victim support program implementation and evaluation.

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Introduction

Medical errors and adverse events in health care have a significant impact on patients, health care organizations and health care providers (Kohn, Corrigan, & Donaldson, 2000). Involvement in adverse events can traumatize health care providers, leaving them emotionally distressed and insecure about their professional competence. These providers are commonly referred to "second victims" of adverse events, and may benefit from institutional and peer support to help them recover (Edrees, Paine, Feroli, & Wu, 2011; Scott et al., 2009; Wu, 2000). In response to this problem, the Joint Commission and the National Quality Forum have recommended that health care institutions establish support structures to help health care workers recover after traumatic events in the workplace (Joint Commission, 2010; National Quality Forum, 2010).

A few organizations have created programs and institutional support structures to address the second victim problem (Krzan, Merandi, Morvay, & Mirtallo, 2015; Pratt, Kenney, Scott, & Wu, 2012; Scott et al., 2010). Several factors appear to promote successful implementation (Krzan et al., 2015; Scott et al., 2010; Waring, 2005). In general, a "culture of safety" is necessary to implement patient safety initiatives (Pronovost et al., 2005). However, some health care organizations are better described as possessing a "culture of blame" in which there is a norm of blame and punishment in the wake of adverse events (Waring, 2005). This poses a challenge to implementing patient safety programs (Pratt et al., 2012; Waring, 2005).

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There have been a few descriptions of support programs for second victims, accompanied by documentation of the design process (Edrees, Connors et al., 2016; Krzan et al., 2015; Scott et al., 2010). However, there is still a need to develop methods for evaluating the effectiveness of second victim peer-support programs (Edrees, Connors, et al., 2016; Pratt et al., 2012). To fill this gap, this paper describes an approach taken to evaluate the RISE (Resilience In Stressful Events) second victim program in the Department of Pediatrics at a large teaching hospital.

The RISE Second Victim Support Program

RISE is a peer support program for hospital workers that was pilot tested in the Johns Hopkins Hospital (JHH) Department of Pediatrics in 2011–2012. The Department of Pediatrics is one of the divisions of a 1075-bed, urban, academic medical center in the Mid-Atlantic region of the US. Pediatrics was selected for the pilot in part because several second victims were identified after the tragic and highly publicized death of Josie King there in 2001 (King, 2009). In addition, there are indications that pediatric staff have a special vulnerability to psychological trauma in cases of a child's death (dos Santos & Moreira, 2014), and leaders in the department were supportive of the program aimed to address their staff needs.

The mission of RISE is to provide timely support to employees who encounter stressful patient-related events - defined as including adverse events, medical errors, deaths, unexpected outcomes, non-accidental trauma, and difficult or violent interactions. Support is offered 24 hours per day and seven days per week in a peer-to-peer or group format depending on the request. The support is provided by peers: colleagues who work in the hospital environment and who have been trained to provide appropriate support. The service is designed to complement other hospital assistance programs, such as the existing Faculty and Staff Assistance Program, by providing a safe and confidential psychological first aid and emotional support. Notably, 63% of the volunteered peer-responders are nurses, and 50% are from the Department of Pediatrics (Edrees, Connors, et al., 2016).

A review of the Josie King incident emphasized the need for additional support of health care workers. The JHH's leadership made a commitment to support its providers and strive to promote a blame-free culture. Leaders identified as one of the RISE goals to "foster a culture in which all employees were resilient and mutually supportive before, during and after stressful events." RISE launched an awareness campaign that included a dedicated website, promotional videos, internal publications, screen savers on clinical computer workstations, presentations to clinical units, and recruiting unit-level champions. As of June 2012, RISE was extended to the other departments in the hospital.

The purpose of this paper is to describe the approach taken to evaluate a second victim program, using as an example the successes and barriers of implementing RISE.

Methods

Overview

The design was a mixed-method evaluation using: 1) quantitative analysis of two consecutive staff surveys and 2) content analysis of responses to open-ended questions on the surveys. The RISE development team made a deliberate decision not to collect data directly from those health care workers who made calls to RISE in consideration of the vulnerable emotional state of callers, and to preserve the confidentiality of the service. Therefore, as part of the evaluation, the RISE development team created an anonymous survey to be administered to all department workers to better understand their second victim experiences collectively. Approval for the study was obtained from the Johns Hopkins Institutional Review Board.

Survey Design, Setting, Sample and Recruitment

Invitations to participate in a pre-implementation online survey were sent in October 2011 using an email address list that included all Department of Pediatrics employees (approximately 900 people). The email invitation described the purpose of the survey, indicated that the survey completion constituted the consent to participate, and noted that the participation was voluntary and anonymous. The provided link led to a survey hosted online at SurveyMonkey™ (SurveyMonkey Inc. 2015. www.surveymonkey.com. Palo Alto, California, USA) where it was available for 4 weeks. The respondents were given the option to skip any question. A reminder email was sent to the original email addresses on the second week.

The survey included newly developed questions drawing from a review of relevant literature on conceptual frameworks for health care worker support and related surveys (Edrees, Brock et al., 2016; White et al., 2015; Appendix A1). The questions assessed pediatric health care workers' awareness of the second victim problem, their willingness to reach out for organizational support, and the staff's perceptions on the type of support that should be offered. The survey was reviewed and revised through an iterative process involving the development team and subject-matter experts in patient safety, clinical services, risk management, and pastoral care.

The second survey, building upon the first, was designed as follow-up evaluation, and was administered 4 years after the original survey. Additional questions were included to gather staff feedback on RISE and utilization of its services (Appendix A2). The survey invitations were sent in December 2014 using the all-department employees' email list and the same survey administration procedures. The survey was available for 11 weeks.

Survey Data Analysis

Data from the surveys were downloaded from SurveyMonkey™ as portable document format (PDF) texts. We used descriptive statistics to analyze survey responders' demographic characteristics. We calculated proportions for the quantitative responses, which included categorical/multiple choice and Likert-type scale questions (1 = strongly disagree; 5 = strongly agree) and counts. The Chi-square test was used to evaluate the difference in those proportions between the two survey's responses as well as between physicians and nurses' responses in the 4-year follow-up. Differences were considered statistically significant at $p \le .05$. Stata 14 software was used for the statistical analysis (StataCorp. 2015. Stata Statistical Software: Release 14. College Station, TX: StataCorp LP).

The open-ended responses included respondents' reflections on helpful and unhelpful features, desired features and services of an organizational support program, and feedback on the RISE program itself based on personal or indirect experience. Responses were reviewed independently by three researchers (HE, EK, MN) using content analysis and standard qualitative analysis methods (Malterud, 2001). Codes were assigned for each individual response and themes were generated accordingly. Disagreements in coding between the researchers were resolved by consensus and a mediating party (VD). Frequencies of common responses were calculated as percentages.

Results

Respondent Characteristics

All employees in the Department of Pediatrics, approximately 900 people, were invited to complete the pre-implementation survey and the 4-year follow-up survey; the estimated response rates were 22.4% and 23.3%, respectively. The composition of respondents from the baseline survey was not available. Among respondents to the follow-up survey, 49% were nurses, 20% physicians, 10% managers and 21% others.

Table 1
Awareness of the second victim problem.

Survey domains	Pre-intervention N (%)	4-Year follow-up N (%)
Level of familiarity with the term second victim	113 (56%) (n = 202)	132 (65%) p = .053 (n = 202)
Desirability to speak to someone regarding an unanticipated patient-related event	171 (85%) (n = 202)	120 (71%) ** p = .002 (n = 168)
Whom the responder reached out to speak at work regarding the incident:		
– A friend off the unit	46 (25%)	12 (10%) ** p = .001
– An organizational structure	7 (4%)	13 (10%) * p = .021
– A supervisor	39 (21%)	22 (18%)
– A colleague in the same profession	152 (83%)	107 (85%)
– A colleague in a different profession	21 (11%) (n = 183)	19 (15%) (n = 125)
Awareness about RISE program	N/A	134 (66%)

* p < .05.
** p < .01.

Awareness of the Second Victim Problem

More than half of respondents reported being familiar with the term second victim at both time points (Table 1). There was a small increase from 56 to 65% (p = .053). In 2011, the large majority (85%) would want to speak to someone about an unanticipated clinical event. This proportion decreased to 71% in the follow-up survey (p = .002). Follow-up respondents were less likely to talk with a friend off the unit, but more likely to contact an organizational structure. The respondents to both surveys did not differ in how soon they would access an organizational support system. There were no statistically significant differences between nurses and physicians' answers to those questions in the follow-up survey.

At follow-up, two thirds of respondents were aware that there was an organizational second victim support program – RISE (66%). Level of awareness among physicians (35%) was significantly lower than among nurses (75%) (p = .001).

Perception of Organizational Support for Second Victims

The willingness to access organizational support after a serious patient-related events was similar at both time points. However, at follow up, more respondents perceived that organizational support was available to them (60% vs 41%, p < .001), and that there was a benefit to reaching out to someone for support (94% vs 85%, p = .014) (Table 2). Among the respondents in the follow-up survey, 10% reported that they had accessed RISE and 21% knew someone who had done so. In these follow-up survey's answers, there were no statistically significant differences between nurses and physicians.

Table 2
Perception of organizational support for second victims.

Survey domains	Pre-Intervention N (%)	4-year Follow-Up N (%)
Level of willingness to use organizational support in the situations[a]	117 (58%) (n = 202)	121 (60%) (n = 202)
Availability of organizational support to them in case of the situation[a]	83 (41%) (n = 202)	121 (60%) ** p < .001 (n = 202)
Second victims' perceived benefits in reaching out for support to someone	171 (85%) (n = 202)	118 (94%) * p = .014 (n = 126)
Would recommend RISE to their colleagues[b]	N/A	50 (93%) (n = 54[b])

[a] Either agree strongly or somewhat agree.
[b] Among those who accessed RISE themselves or know someone who have accessed.
* p < .05.
** p < .01.

Among those that had accessed RISE or knew someone who had done so, nearly all (93%) were very likely to recommend the program to others based on that experience. Virtually all pediatric nurses (100%) would do so. Physicians were somewhat less willing (73%) to recommend RISE to their colleagues (p = .047).

Content analysis of the open-ended responses to the surveys revealed several emergent themes that identified features respondents found helpful in discussing a stressful patient-related event (Table 3). The same themes emerged as the most frequent in the pre-implementation and follow-up surveys. Some of the themes could be categorized as active interventions, and others as passive features. Active listening, demonstration of compassion, and validation or debriefing of feelings were mentioned most often as helpful. Responders also appreciated instances when they were offered reassurance, when the event was reinforced as a part of the profession or learning, when similar experiences were shared, and when a solution was proposed to confront similar events in the future. Among passive features, the opportunity to discuss the event, and availability of a safe and friendly space to talk emerged as helpful. Table 3 presents the themes, each accompanied by an illustrative quote.

Challenges to Organizational Second Victim Support

Content analysis also revealed actions perceived as unhelpful in discussing a stressful patient-related event. These include lack of support, lack of follow-up, blame, showing pity, disregarding or making light of a particular traumatic situation, and ignoring feelings or lack of emotion rapport if a problem-solving approach has been taken.

When asked to describe the most beneficial features of a second victim program, respondents demonstrated heterogeneity in their opinions. Specifically, some respondents sought a one-to-one support format, while others preferred a group format. Some preferred a unit level resource, while others preferred that it be at the hospital level. Some preferred receiving support from a neutral party while others were opposed to this. Moreover, several survey participants described their preferred form of support to be a hotline, and others to be an error reporting service. Some respondents preferred to speak to a person who was a peer, while others a senior person. There was an agreement that such a person should be an active listener, who has expertise in clinical practice, and is ready to share and relate to their experience.

The most commonly desired features of the organizational support were anonymity, a non-judgmental approach, 24/7 access, and a commitment to follow-up. However, an additional theme that emerged from content analysis was that the organizational support program was portrayed as having a broader function of an agent of system change that escalates deficiencies revealed in practice to specific improvements to the hospital system.

A total of 20 respondents mentioned specific experience with RISE. The large majority characterized the program as useful or worthwhile investigating. However, a few expressed doubts, revealing barriers including the need to overcome a culture of blame or stigma, the need to actively promote RISE, and the need for the hospital to allow staff more time and resources in handling stressful events. Illustrative quotes included:

> "Many don't recognize that they need help. Getting people to use available resources when they have been used to just sucking it up is difficult. We need a culture change."

> "Becoming more available would help, such as going to a unit and talking with the staff after a horrible event has occurred would be great. Health care workers are so busy, they don't have time outside of work sometimes to talk with someone."

Table 3
Helpful features of an organizational support program.

Helpful features main themes[a]	Illustrative quote	Theme frequency[b] (n = 93; 202)
Active		
1 Listened actively	"*was an active listener and was available*"	18% (19%)
2 Showed compassion	"*sympathized with my situation and affirmed my feelings*"	13% (16%)
3 Debriefed or validated feelings		12% (17%)
4 Reinforced that events are part of the profession or learning	"*that I wasn't alone…it's a learning curve and what we experience as nurses will only make us better nurses*"	10% (15%)
5 Offered reassurance	"*that we did what we could given the situation, that we all did our best, that sometimes events are out of our control*"	9% (7%)
6 Shared similar experience	"*sharing similar experiences helped/knowing that the person worked in the same profession and saw similar things that I saw was helpful*"	8% (4%)
7 Proposed solutions to the current event or ways to prevent similar events in the future	"*she openly processed all the staff feelings and assisted us in developing an understanding of why and how the event occurred and potential flags to the situation*"	7% (5%)
Passive		
8 Provided a safe and friendly space to talk	"*helped me sort through the sequence of events so I could learn that my performance could not have changed the outcome for this patient*"	8% (6%)
9 Provided an opportunity to process the event	"*we went out to breakfast and talked about what happened and encouraged each other to express what they were feeling*"	3% (9%)

  [a] Included as a main theme if the frequency is 5% or more in at least one of the surveys.
  [b] Calculated as the percentage in the follow-up (the first percentage) and pre-implementation surveys' (the percentage in parentheses) open-ended question commentaries. For the frequency denominator, answers skipped or indicated as "N/A", "not sure" and "nothing" were excluded.

"*The only problem with a support system is that it is another* "*thing to do*" *which requires absence from duties and time away from home. Not sure of the best solution but glad to see there is interest from Johns Hopkins [Hospital].*"

"*I think there is still a stigma with using any resources like RISE & FASAP. Despite what politically correct* "*support*" *manager & others in the leadership may say, when it comes down to it, people tend to blame the victim rather than support [her/him]…*".

Discussion

This paper presents a case study on the successes and challenges in implementing the RISE organizational health care worker support program within the Department of Pediatrics at JHH. Quantitative baseline and follow-up survey data provide some evidence for the effectiveness of the program: four years after it was launched, respondents were more likely to contact an organizational structure regarding a stressful clinical event, and had increased awareness of the availability of organizational support. Moreover, the staff was very likely to recommend RISE to others based on personal or vicarious experience. The awareness of RISE and willingness to recommend RISE to colleagues was higher among pediatric nurses than physicians. Supplementing those findings, our qualitative analysis allowed us to identify barriers that were reflected by the lower than expected awareness of RISE and residual resistance in using organizational support.

Consistent with a study that interviewed patient safety representatives from 38 acute care hospitals in Maryland, USA, we found that institutional readiness and ability to implement second victim support was matched by willingness of staff members to access and utilize these services (Edrees & Wu, 2017). Evaluation of similar second victim support program implemented in the pharmacy department of a pediatric hospital at five-month post-implementation evaluation found a positive impact. That program was consequently greenlighted for the expansion to the entire hospital (Krzan et al., 2015).

The case of RISE demonstrates the value of including both a quantitative as well as qualitative evaluation component to contribute to the evolution of a second victim support program. A recently published paper that describes a structured survey instrument to evaluate peer support programs also recommends utilizing interviews and focus groups in addition to the tool to further understand the staff's second victim experiences (Burlison, Scott, Browne, Thompson, & Hoffman, 2017).

Successes in Implementation

The success of RISE can be explained in part by its beneficial features, in which peer responders listen actively, show compassion, provide a safe environment to openly communicate concerns, reassure second victims of their professional or clinical competencies, and reinforce the inevitability of adverse events. Additional beneficial features, fulfilling heterogeneous staff's preferences, are that the RISE program provides both individual and group support that is available 24 hours a day. The willingness of RISE responders to maintain this regime demonstrates the organization's willingness to support and accommodate its staff, which in a previous study was found to be crucial to success (Devilly & Cotton, 2003).

Finally, the success in the implementation can be explained by approach of continuous organizational learning and interplay with organizational culture adopted by the RISE team. We created a timeline of the changes to RISE procedures, policies and methodologies in 2011–2015, drawing on relevant documents and meeting minutes (Fig. 1). This timeline identifies adaptations made to RISE along with the triggers for those changes. There were different kinds of RISE adaptations: technical, e.g. the revision to pager notifications; organizational, e.g. modifications to the call schedule; or adaptive, e.g. awareness initiatives that evolved from targeting leadership to directly address frontline-staff using various media and additional training on Psychological First Aid as provided by the Social Resilience Model and G.R.A.C.E. (Coursera, 2017; Halifax, Black, & Rushton, 2017; Leitch & Sutton, 2017). The triggers for those changes included both internal RISE evaluations and changes in the organization's culture. In terms of culture changes, the increase in RISE utilization may reflect greater awareness of second victim problem and acceptance of organizational support, although we do not have direct evidence for this. In addition to the baseline and follow up surveys reported here, RISE has learned from self-evaluations provided by peer responders after every second victim encounter, and from suggestions raised at monthly peer responder meetings.

The timeline demonstrates that RISE has relied on self-evaluation, organizational learning, and an interplay with elements of organizational culture. Organizational learning practices have been shown to drive changes in organizational culture (Waring, 2005). Some authors
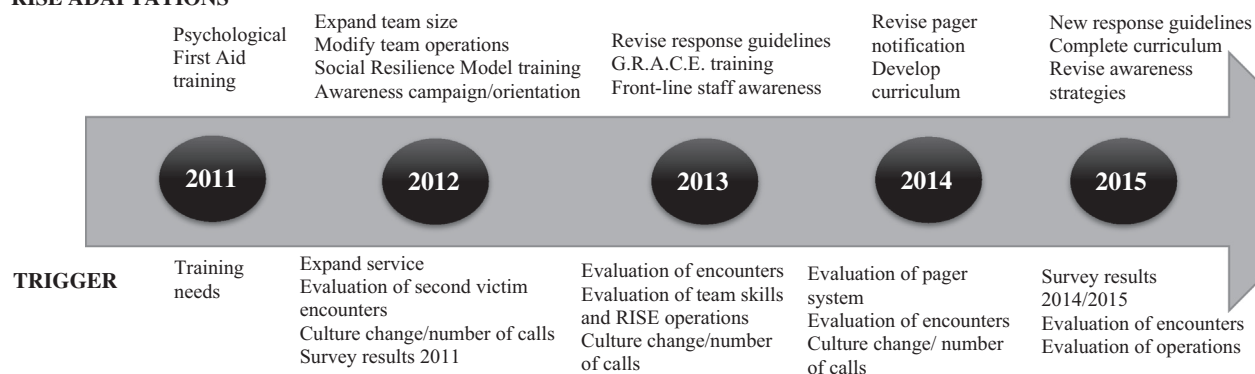
RISE ADAPTATIONS

Fig. 1. RISE timeline.

describe organizational learning as a "process by which outcomes, such as adaptation to change, greater understanding, or improved performance in groups and organizations can be achieved" (Edmondson, 1999; Singer, Moore, Meterko, & Williams, 2012). Organizational learning has been also shown to be positively associated with the implementation success of improvement projects in hospitals (Tucker, Nembhard, & Edmondson, 2007). Moreover, effective organizational information feedback systems that promote learning can promote the development of a positive safety culture within organizations (Benn et al., 2009).

Challenges to Implementation

Our survey analysis revealed lower than expected awareness of RISE and remaining resistance to using organizational support or to reach out to speak to someone in case of a stressful patient-related event. This residual resistance may be associated with some of the barriers identified in our follow up survey: the vestiges of culture of blame, stigma, and inability for pediatric staff to find sufficient time in handling stressful events. An additional challenge was the call for RISE to serve as an agent of system change that escalates deficiencies revealed in care to improvements in hospital safety system.

All of these challenges reflect systematic structural barriers (Health Quality Ontario, Lambrinos, & Holubowich, 2017) and reinforce the RISE's mission to foster a culture change and increased awareness. Such attribution of the important role in second victim program implementation to organizational culture is consistent with findings from Quillivan and colleagues who described that a nonpunitive culture for patient-related adverse events fosters successful changes in health care worker support networks (Quillivan, Burlison, Browne, Scott, & Hoffman, 2016). It is apparent that an organization that embraces a second victim support program needs to be willing, ready, and able to support a culture change. Speaking up, addressing accountability, avoiding blame, support from leadership and management, and the opportunity to learn and prevent similar incidents from reoccurring are among the cultural components that must be taken into consideration (Jenson & Fraser, 2006; Scott et al., 2010). Indeed, in our opinion, a successful implementation of a second victim program might be confined by boundaries of the current organizational culture and, thus, those boundaries should be treated as dynamic and modifiable. By the same token, a second victim program will necessarily interact with the organizational culture that surrounds it, and must adapt accordingly to be accepted and successful.

We were also challenged by the variability in preferences of pediatric health care workers for features of a peer support program. It was interesting that the same coping strategies named by some respondents as helpful can be perceived as unhelpful by others. The same messages, e.g., reinforcing that stressful events are part of the profession or sharing similar experiences, can be perceived by others as minimizing or making light of a traumatic situation. The reassurance of the positive future might be characterized as not helpful for a similar reason. Justifying the situation might be seen as the sign of ignoring the feelings. In addition, those seeking predominantly emotional support may be not appreciative of the logical discussion of the event or a problem-solving approach. Those challenges emphasize the importance for a second victim program to be flexible, to learn from experience, to provide a variety interventions, and to employ an individualized approach to every second victim encounter (Edrees & Wu, 2017).

Limitations

Our study had several limitations. The response rates for both surveys were low. Additionally, in the follow-up survey, up to 38% of responders elected not to answer specific questions. However, qualitative analysis of the responses allowed identification of the themes that both help explain the reasons for the low response rate and non-response to particular questions, as well as reveal findings otherwise missing. The 4-year time period between the survey administrations was relatively long, allowing the potential influences of secular changes independent of the RISE program. However, this amount of time made it possible to reflect the effects of series of changes to RISE which were employed as a response to the first survey and to other self-evaluations. On the other hand, the 4-year time period between the surveys and low response rates may have affected the respondent sampling, leading to differences in their composition. Overall, the evaluation of a continuously self-learning program in dynamic culture environment, complicated by staff turnover as well as other ongoing patient safety initiatives presented significant difficulties. Thus, the evaluation had to rely on a newly developed individualized survey and operated with the limited data.

Implications for Future Work

The evaluation of second victim programs remains challenging and future studies may address if the methods employed in the current paper are applicable to other settings. In those evaluations, it is important to take in account aspects of organizational culture that can enhance the second victim support programs or hinder them, for example, using validated survey tools, such as the Hospital Survey on Patient Safety Culture (HSOPS) (Sorra and Nieva, 2004), or the Safety Attitudes Questionnaire (SAQ) (Sexton et al., 2006). These tools provide an opportunity for those who manage second victim program to consider the following components: communication openness, leadership support, feedback and communication for adverse event reporting, organizational learning, safety climate, and stress recognition. The survey used in that study can be compared against the Second Victim Experience and Support Tool (SVEST), which employs the seven-factor model of the following domains: psychological distress, physical

distress, colleague support, supervisor support, organizational support, non-work-related support, and professional self-efficacy (Burlison et al., 2017).

Conclusions

This case study describes a mixed-method evaluation approach for a second victim program. The approach allowed the identification of evidence for RISE effectiveness along with barriers behind its implementation. The findings suggest that an important attribute of the successful implementation of a second victim program is to be flexible, self-learning and to take in account surrounding culture of patient safety. The organizational culture within an institution can be a limiting or facilitating factor that encourages proactive actions, adaptations and continuous evaluation.

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Competing Interests

The authors declare that none of the authors have any competing interests in the manuscript.

References

Benn, J., Koutantji, M., Wallace, L., Spurgeon, P., Rejman, M., Healey, A., & Vincent, C. (2009). Feedback from incident reporting: Information and action to improve patient safety. *Quality & Safety in Health Care*, 18(1), 11–21. https://doi.org/10.1136/qshc.2007.024166.

Burlison, J. D., Scott, S. D., Browne, E. K., Thompson, S. G., & Hoffman, J. M. (2017). The second victim experience and support tool: Validation of an organizational resource for assessing second victim effects and the quality of support resources. *Journal of Patient Safety*, 13(2), 93–102. https://doi.org/10.1097/PTS.0000000000000129.

Coursera (2017). Psychological first aid. Retrieved from Johns Hopkins University https://www.coursera.org/learn/psychological-first-aid#.

Devilly, G. J., & Cotton, P. (2003). Psychological debriefing and the workplace: Defining a concept, controversies and guidelines for intervention. *Australian Psychologist*, 38(2), 144–150. https://doi.org/10.1080/00050060310001707147.

dos Santos, R. A., & Moreira, M. C. N. (2014). Resilience and death: The nursing professional in the care of children and adolescents with life-limiting illnesses. *Ciencia E Saude Coletiva*, 19(12), 4869–4878. https://doi.org/10.1590/1413-812320141912.18862013.

Edmondson, A. (1999). Psychological safety and learning behavior in work teams. *Administrative Science Quarterly*, 44(2), 350–383. https://doi.org/10.2307/2666999.

Edrees, H., Brock, D. M., Wu, A. W., McCotter, P. I., Hofeldt, R., Shannon, S. E., ... White, A. A. (2016). The experiences of risk managers in providing emotional support for health care workers after adverse events. *Journal of Healthcare Risk Management*, 35(4), 14–21. https://doi.org/10.1002/jhrm.21219.

Edrees, H., Connors, C., Paine, L., Norvell, M., Taylor, H., & Wu, A. W. (2016). Implementing the RISE second victim support programme at the Johns Hopkins Hospital: A case study. *BMJ Open*, 6(9). https://doi.org/10.1136/bmjopen-2016-011708.

Edrees, H., & Wu, A. W. (2017). Does one size fit all? Assessing the need for organizational second victim support programs. *Journal of Patient Safety*. https://doi.org/10.1097/PTS.0000000000000321 Jun 30. [Epub ahead of print].

Edrees, H. H., Paine, L. A., Feroli, E. R., & Wu, A. W. (2011). Health care workers as second victims of medical errors. *Polskie Archiwum Medycyny Wewnętrznej*, 121(4), 101–107.

Halifax, J., Black, A., & Rushton, C. (2017). Upaya program: G.R.A.C.E.: Training in compassion-based interactions in the clinician/patient encounter. Retrieved from https://www.upaya.org/program/?id=1010.

Health Quality Ontario, Lambrinos, A., & Holubowich, C. (2017). Patient safety learning systems: A systematic review and qualitative synthesis. *Ontario Health Technology Assessment Series*, 17(3), 1–23.

Jenson, J. M., & Fraser, M. W. (2006). *Social policy for children & families: A risk and resilience perspective.* Thousand Oaks, Calif: Sage Publications.

Joint Commission (2010). Looking at sentinel events along the continuum of patient safety. *Joint Commission Perspectives*, 30(8), 3–5.

King, S. (2009). *Josie's story.* New York: Atlantic Monthly Press.

Kohn, L. T., Corrigan, J. M., & Donaldson, M. S. (2000). *To err is human: Building a safer health system.* National Academic Press.

Krzan, K. D., Merandi, J., Morvay, S., & Mirtallo, J. (2015). Implementation of a "second victim" program in a pediatric hospital. *American Journal of Health-System Pharmacy*, 72(7), 563–567. https://doi.org/10.2146/ajhp140650.

Leitch, L., & Sutton, L. (2017). An introduction to the social resilience model. Retrieved from https://www.thresholdglobalworks.com/about/social-resilience/.

Malterud, K. (2001). Qualitative research: Standards, challenges, and guidelines. *Lancet*, 358(9280), 483–488. https://doi.org/10.1016/S0140-6736(01)05627-6.

National Quality Forum (2010). *Safe practices for better healthcare—2010 update: A consensus report.* Washington, DC: NQF.

Pratt, S., Kenney, L., Scott, S. D., & Wu, A. W. (2012). How to develop a second victim support program: A toolkit for health care organizations. *Joint Commission Journal on Quality and Patient Safety*, 38(5), 235–240. https://doi.org/10.1016/S1553-7250(12)38030-6 (193).

Pronovost, P., Weast, B., Rosenstein, B., Sexton, J. B., Holzmueller, C. G., Paine, L., ... Rubin, H. R. (2005). Implementing and validating a comprehensive unit-based safety program. *Journal of Patient Safety*, 1(1), 33–40.

Quillivan, R. R., Burlison, J. D., Browne, E. K., Scott, S. D., & Hoffman, J. M. (2016). Patient safety culture and the second victim phenomenon: Connecting culture to staff distress in nurses. *Joint Commission Journal on Quality and Patient Safety*, 42(8), 377–386. https://doi.org/10.1016/S1553-7250(16)42053-2.

Scott, S. D., Hirschinger, L. E., Cox, K. R., McCoig, M., Brandt, J., & Hall, L. W. (2009). The natural history of recovery for the healthcare provider after adverse patient events. *Quality & Safety in Health Care*, 18(5), 325–330. https://doi.org/10.1136/qshc.2009.032870.

Scott, S. D., Hirschinger, L. E., Cox, K. R., McCoig, M., Hahn-Cover, K., Epperly, K. M., ... Hall, L. W. (2010). Caring for our own: Deploying a systemwide second victim rapid response team. *Joint Commission Journal on Quality and Patient Safety*, 36(5), 233–240. https://doi.org/10.1016/S1553-7250(10)36038-7.

Sexton, J. B., Helmreich, R. L., Neilands, T. B., Rowan, K., Vella, K., Boyden, J., ... Thomas, E. J. (2006). The safety attitudes questionnaire: Psychometric properties, benchmarking data, and emerging research. *BMC Health Services Research*, 6, 44. https://doi.org/10.1186/1472-6963-6-44.

Singer, S. J., Moore, S. C., Meterko, M., & Williams, S. (2012). Development of a short-form learning organization survey: The LOS-27. *Medical Care Research and Review*, 69(4), 432–459. https://doi.org/10.1177/1077558712448135.

Sorra, J. S., & Nieva, V. F. (2004). *Hospital survey on patient safety culture.* Rockville, MD: Agency for Healthcare Research and Quality.

Tucker, A. L., Nembhard, I. M., & Edmondson, A. C. (2007). Implementing new practices: An empirical study of organizational learning in hospital intensive care units. *Management Science*, 53(6), 894–907. https://doi.org/10.1287/mnsc.1060.0692.

Waring, J. J. (2005). Beyond blame: Cultural barriers to medical incident reporting. *Social Science and Medicine*, 60(9), 1927–1935. https://doi.org/10.1016/j.socscimed.2004.08.055.

White, A. A., Brock, D. M., McCotter, P. I., Hofeldt, R., Edrees, H. H., Wu, A. W., ... Gallagher, T. H. (2015). Risk managers' descriptions of programs to support second victims after adverse events. *Journal of Healthcare Risk Management*, 34(4), 30–40. https://doi.org/10.1002/jhrm.21169.

Wu, A. W. (2000). Medical error: The second victim. *British Medical Journal*, 320(7237), 726–727. https://doi.org/10.1136/bmj.320.7237.726.