

ORIGINAL ARTICLE

EXPERIENCES OF SECONDARY VICTIMIZATION AMONG ANESTHESIOLOGY AND REANIMATION PHYSICIANS IN TURKIYE AND EVALUATION OF SUPPORT RESOURCES

TÜRKİYE'DEKİ ANESTEZİYOLOJİ VE REANİMASYON HEKİMLERİNİN İKİNCİL MAĞDURİYET DENEYİMLERİ VE DESTEK KAYNAKLARININ DEĞERLENDİRİLMESİ

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How to cite ?

Gülşen F. Çiçekçi F. Experiences of Secondary Victimization Among Anesthesiology and Reanimation Physicians in Türkiye and Evaluation of Support Resources. Genel Tıp Derg. 36(2026), 1-5

ABSTRACT

Aim: The "second victim phenomenon" refers to healthcare providers who are affected by an unexpected patient harm, medical error, or adverse event, either directly or indirectly. This study aimed to assess the experiences, awareness, and availability of support for second victims among healthcare providers.

Materials and Methods: A prospective, multicenter, and cross-sectional study was conducted using an online survey that included the Turkish version of the Second Victim Experience and Support Tool (T-SVEST). The survey was administered to anesthesiology and reanimation physicians in two cities in Türkiye.

Results: The response rate was 65% (200/306); 65% of the participants were female, and the average age ranged from 35 to 45. 19.5% of the participants had experienced a second victim phenomenon event in their careers. Female anesthesiologists had significantly higher awareness and satisfaction scores than males ($p = 0.012$ and $p = 0.009$, respectively). No significant differences were found in awareness and satisfaction based on socio-demographic data. Additionally, a positive correlation was found between awareness and satisfaction levels (Pearson $r = 0.211$, $p = 0.003$).

Conclusion: Female anesthesiologists showed higher awareness and satisfaction regarding the second victim phenomenon, and higher awareness levels were associated with greater satisfaction.

Keywords: Anesthesiologist, medical errors, second victim phenomenon, support resources

ÖZ

Amaç: "İkinci mağdur fenomeni", beklenmedik bir hasta zararı, tıbbi hata veya olumsuz olaydan doğrudan veya dolaylı olarak etkilenen sağlık çalışanlarını ifade eder. Bu çalışma, sağlık çalışanları arasında ikinci mağdurlarla ilgili deneyimleri, farkındalığı ve destek imkanlarını değerlendirmeyi amaçlamıştır.

Gereç ve Yöntemler: İkinci Mağdur Deneyimi ve Destek Aracı'nın (T-SVEST) Türkçe versiyonunu içeren çevrimiçi bir anket kullanılarak prospektif, çok merkezli ve kesitsel bir çalışma yürütülmüştür. Anket, Türkiye'nin iki şehrindeki anesteziyoloji ve reanimasyon hekimlerine uygulanmıştır.

Bulgular: Katılım oranı %65 (200/306) olmuştur; katılımcıların %65'i kadın olup, ortalama yaş 35 ile 45 arasında değişmektedir. Katılımcıların %19,5'i kariyerlerinde ikinci mağdur fenomeni yaşamıştır. Kadın anesteziyologların farkındalık ve memnuniyet puanları erkeklere göre anlamlı derecede daha yüksektir (sırasıyla $p = 0,012$ ve $p = 0,009$). Sosyo-demografik verilere dayalı olarak farkındalık ve memnuniyette anlamlı bir farklılık bulunmadı. Ek olarak, farkındalık ve memnuniyet düzeyleri arasında pozitif bir korelasyon bulundu (Pearson $r = 0,211$, $p = 0,003$).

Sonuç: Kadın anesteziistler, ikinci mağdur fenomeni konusunda daha yüksek farkındalık ve memnuniyet gösterdi ve daha yüksek farkındalık düzeyleri daha yüksek memnuniyetle ilişkilendirildi.

Anahtar Kelimeler: Anesteziist, destek kaynakları, ikinci mağdur fenomeni, tıbbi hatalar

Introduction

The “secondary victim phenomenon” (SVS) was first defined by Wu in 2000 as healthcare professionals who are potentially responsible for a patient safety event and are negatively affected by its consequences [1]. In 2022, an international expert group refined the definition through consensus, stating that a SVS is “any healthcare worker who is directly or indirectly involved in an unexpected adverse patient event, unintentional healthcare error, or patient injury, and is negatively impacted to the extent that they become a victim” [2]. Nearly half of healthcare professionals are reported to experience SVS during their careers [3]. Such incidents can leave lasting emotional scars, with SVS often feeling personally responsible for unexpected patient outcomes and doubting their clinical knowledge and skills [4]. While any event can lead to SVS, those of severe or extensive nature are more likely to trigger it. Differential diagnoses of SVS include burnout [5], depression [6], prolonged grief disorder [7], occupational stress reaction and fatigue [8, 9], substance use disorders [10], and physical health issues. The symptoms of SVS may resemble those of these conditions, making it difficult to distinguish it from other distressing events in healthcare. Incidents such as patient death or near-death, patient harm due to systemic failures beyond healthcare providers’ control, and events involving known patients can contribute to SVS [11]. Multiple studies have shown that SVSs may experience significant emotional distress, including anxiety, depression, guilt, sleep disturbances, loss of confidence in their work, and decreased job satisfaction [1, 12].

To better understand SVS and reduce the punitive culture that persists in many countries [13], several systematic reviews have been conducted [14–16]. However, no study has been conducted in Turkey to assess the psychological impact of adverse events on anesthesiology and reanimation physicians. To fill this gap, we aimed to measure SVS experiences, awareness, and access to institutional support resources among anesthesiology and reanimation physicians in Türkiye.

Materials and Methods

This study is a prospective, multicenter, cross-sectional study. After receiving ethical committee approval (Selçuk University non clinical research ethics board Ref no: 2023/246), data collection took place between June 1, 2023, and July 31, 2023. The trial was registered before patient enrollment at clinicaltrials.gov (NCT06075186, Date of registration: 03/10/2023). The sample size was calculated based on the number of anesthesiology and reanimation physicians in two cities in Turkey, targeting 197 participants with a 95% confidence level, 5% margin of error, and at least 50% response distribution (calculated via <http://www.raosoft.com/samplesize.html>). An additional 10% was added to account for potential data loss, resulting in a target sample size of 206 participants.

The survey was developed by a multidisciplinary team, including two anesthesiologists with expertise in qualitative methodologies. It included socio-demographic questions along with the Turkish

version of the Secondary Victim Experience and Support Tool (T-SVEST). The survey explained its purpose, confidentiality, anonymity, potential benefits and harms, and the voluntary nature of participation. To prevent duplicate responses, participants could not complete the survey more than once from the same Internet Protocol address. The study adhered to the ethical guidelines outlined in the Declaration of Helsinki, and informed consent was obtained from all participants.

The Data Collection

Socio-Demographic Questionnaire: This collected data on age, gender, marital status, years in the profession, years in anesthesia specialty, previous professional experience, and awareness of second victim phenomenon. **Secondary Victim Experience and Awareness Survey:** The SVEST, developed by Burlison et al. in 2017, assesses SVS experiences and desired support resources among healthcare providers [17]. The SVEST consists of 29 items across seven dimensions and two outcome variables: psychological distress, physical distress, peer support, managerial support, institutional support, non-work-related support, and professional self-efficacy. The two outcome variables measure turnover intention and absenteeism. Responses are rated on a five-point Likert scale (1 = strongly disagree to 5 = strongly agree), with higher SVEST scores indicating higher prevalence of SVS symptoms, greater perceived inadequacy of support resources, and more severe work-related negative consequences. The original SVEST demonstrated adequate internal consistency (Cronbach’s $\alpha = 0.61$ to 0.88). The 0.44 and 0.89 [18].

Statistical Analysis

Statistical analyses were conducted using SPSS 27.0 (Chicago, IL, USA). Normality of data distribution was assessed using the Kolmogorov-Smirnov test. Parametric (t-test) or non-parametric (Mann-Whitney U test) tests were applied as appropriate. Descriptive statistics were reported as mean $\pm$ standard deviation for continuous variables. Categorical variables were analyzed using chi-square tests. Repeated measures ANOVA and paired t-tests were used for within-group comparisons, with Bonferroni correction applied. Statistical significance was set at $p < 0.05$.

Results

Out of 206 potential participants, 200 completed the survey. Of these, 56% were female ($n=113$), and 43.5% were male ($n=87$), with the majority aged between 35–45 years. When comparing genders, female anesthesiologists had significantly higher awareness scores than males (94.38 ± 10.78 vs. 89.98 ± 13.69 , $p=0.012$). Similarly, female anesthesiologists had higher satisfaction scores than males (26.16 ± 5.68 vs. 24.06 ± 5.48 , $p=0.009$). However, no significant differences in awareness and satisfaction scores were found based on marital status, age, institution type, title, years of experience, or prior knowledge of the secondary victim phenomenon (Table 1). A significant positive correlation was found between awareness levels and satisfaction levels among anesthesiologists (Pearson $r=0.211$, $p=.003$) (Table 2).

Table 1. Socio-demographic data of participants

			Subcategory	N	Mean	Standard Deviation	p
Sex	Awareness	Male		87	89.9	13.6	.012
		Female		113	94.3	10.7	
	Satisfaction	Male		87	24.0	5.4	.009
		Female		113	26.1	5.6	
Marital status	Awareness	married		137	91.4	13.1	.072
		single		63	94.7	9.9	
	Satisfaction	married		137	25.2	5.8	.874
		single		63	25.3	5.4	
Age (y)	Awareness	<35		95	93.4	12.8	.718
		35-45		53	91.3	11.8	
		45-55		35	92.1	12.6	
		>55		17	91	9.5	
	Satisfaction	<35		95	25.4	6.4	.259
		35-45		53	26	4.4	
		45-55		35	23	5.5	
		>55		17	24	4.4	
Affiliation	Awareness	University Hospital		89	91.5	13.2	.891
		Foundation Hospital		6	89.5	9.8	
		Education and Research Hospital		41	9.3	11.6	
		State Hospital		42	92.8	11.2	
		Private Hospital		22	93.9	11.6	
	Satisfaction	University Hospital		89	24.9	5.8	.656
		Foundation Hospital		6	25.8	4.4	
		Education and Research Hospital		41	26.1	6.5	
		State Hospital		42	25.5	4.5	
		Private Hospital		22	23.7	5.6	
Position	Awareness	Lecturer		28	90.0	13.9	.539
		Specialist		83	92.7	11.5	
		Research Assistant		89	92.9	12.4	
	Satisfaction	Lecturer		28	25.1	3.5	.651
		Specialist		83	24.8	5.8	
		Research Assistant		89	25.6	6.0	
Term (y)	Awareness	0-5		60	94.5	10.1	.196
		6-10		34	92.9	13.2	
		11-20		75	92.1	14.1	
		>20		31	98.7	9.4	
	Satisfaction	0-5		60	25.8	6.6	.553
		6-10		34	24.9	6.4	
		11-20		75	25.3	4.8	
		>20		31	24.1	4.4	
A second victim phenomenon event in their careers	Awareness	Yes		39	90.6	11.6	.316
		No		161	92.9	12.4	
	Satisfaction	Yes		39	26.0	4.9	.330
		No		161	25.0	5.8	

Table 2. Relationship between the scales

		Awareness	Satisfaction
Awareness	Pearson correlation	1	.211*
	Sig. (2-tailed)		.003
	N	200	200
Satisfaction	Pearson correlation	.211*	1
	Sig. (2-tailed)	.003	
	N	200	200

Discussion

In this study, female anesthesiologists were found to have significantly higher T-SVEST awareness and satisfaction scores compared to their male colleagues. Furthermore, an increase in awareness levels was associated with higher satisfaction scores. These findings are consistent with previous research suggesting that post-adverse event self-reflection and awareness can facilitate coping and increase openness to support interventions [11, 12].

The concept of the SVS refers to the emotional, psychological, and physical distress experienced by healthcare professionals following unexpected medical errors or adverse patient events. Studies have reported that this phenomenon affects between 2.5% and 40.8% of healthcare providers [19]. In our sample, 19.5% of participants reported having experienced SVS episodes in their careers, aligning with prevalence rates reported in countries such as Spain, Austria, and Argentina [5, 17, 18].

SVS experiences can have profound consequences at both individual and organizational levels, including feelings of guilt, depression, anxiety, and reduced psychological resilience [4,20]. Physical symptoms, such as fatigue, sleep disturbances, and nausea, are also commonly reported. Importantly, our results demonstrated a strong correlation between psychological distress, physical symptoms, and perceived self-efficacy, which has also been emphasized in high-stakes environments such as anesthesiology and intensive care [15, 16].

The higher T-SVEST satisfaction scores observed among female anesthesiologists may reflect a more positive reception of institutional support programs. Prior research has indicated that insufficient managerial and institutional support increases emotional burden and contributes to workforce issues such as absenteeism, turnover intentions, and decreased team morale [12, 19]. International studies similarly highlight that SVS experiences are closely linked to professional sustainability, and targeted interventions are both a human and operational imperative [12, 19].

Support for SVS should come not only from peers but also from supervisors and the institution. Peer support programs have emerged as a critical intervention in this context [21, 22]. Boehnen et al. emphasized that structured peer support offers a reliable resource for healthcare providers, providing reassurance and validation through shared experiences [23]. Programs such as RISE (Resilience in Stressful Events) at Johns

Hopkins University and HELP (Healing Emotional Lives of Peers) at Mayo Clinic have demonstrated beneficial effects on both psychological outcomes and institutional culture [24].

Sociodemographic findings from other studies indicate that younger and less experienced clinicians report lower perceived support and higher psychological vulnerability [4, 11, 20, 21]. While age and experience did not significantly affect awareness or satisfaction scores in our study, future research should examine these potential moderating factors in greater detail. Additionally, certain personality traits, such as neuroticism, have been shown to increase susceptibility to SVS stress [24].

The literature emphasizes the need to increase awareness of SVS experiences. Edrees et al. highlighted the importance of fostering institutional awareness and implementing resilience-building programs for affected healthcare workers [24]. These interventions enhance professional confidence and facilitate faster recovery from traumatic events. However, evidence also suggests that support programs are not always fully effective, and participation can remain low. White et al. reported that although many participants were aware of support programs, these were underutilized, underscoring the need for greater promotion and engagement in clinical settings [25].

From a strategic perspective, our findings reinforce the importance of integrating second victim phenomenon support into broader patient safety and quality improvement initiatives. Proactive measures, including training, informational sessions, and peer-led interventions, should become routine components of safety culture frameworks [12, 19, 24]. Additionally, international initiatives such as COST Action 19113 advocate for harmonization of definitions and best practices across health systems, promoting transparency, trust, and interprofessional solidarity [26].

The main strength of this study is the examination of a homogeneous group consisting solely of anesthesiologists. Nevertheless, several limitations should be acknowledged. First, the small sample size poses a constraint, as only 200 participants responded despite approximately 7,000 anesthesiologists being active in Turkey. Second, the survey's length may have led to overrepresentation of participants more willing to share their experiences and feelings. Third, recall bias may have affected qualitative data, as high-intensity emotional experiences can evolve over time. Future longitudinal studies are warranted to explore how perceptions and recollections of adverse events change over time [27, 28]. Finally, the cross-sectional design precludes conclusions regarding the temporal evolution of SVS experiences and support needs.

Conclusion

In this study, female anesthesiologists had significantly higher awareness and satisfaction scores compared to male anesthesiologists. The findings suggest that female physicians may have stronger emotional responses to unexpected

medical errors. Furthermore, the institutional support received by female anesthesiologists following adverse medical events may contribute to their increased satisfaction. This study also demonstrated that as anesthesiologists' awareness levels increased, their satisfaction levels also improved. The secondary victim phenomenon presents a significant challenge for healthcare professionals and requires a comprehensive approach to resolve. Addressing this issue effectively requires both individual support and cultural change within healthcare institutions. Support programs for second victim phenomenon play a crucial role in alleviating the emotional impact of traumatic events and aiding recovery. The development of such programs is essential for the long-term sustainability of healthcare providers and healthcare institutions.

Conflict of interest

The authors declare that there is no conflict of interest

Financial support

None

Acknowledgments

We wish to express our deepest gratitude to all the participants who entrusted us with their stories.

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