

Filipino Nurses as Second Victims of Medication Error: A Sequential Mixed-Methods Study

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Article Info:

<https://doi.org/10.70848/cnj.v3i2.124>
pISSN 3063-9247
eISSN 3063-9255

Article History:

Received: April 12th, 2026
Revised: July 10th, 2026
Accepted: July 11th, 2026

Abstract

Introduction: The second victim phenomenon—the psychological and emotional distress experienced by healthcare professionals following an adverse clinical event—remains underexplored in the Philippines, particularly after high-alert medication (HAM) errors. **Objective:** This study described second-victim-related experiences and their emotional and professional impacts and explored nurses' lived experiences to inform support interventions. **Methods:** A sequential explanatory mixed-methods design was used. In Phase 1, 200 registered nurses at a tertiary hospital in Metro Manila completed an initial screening survey; 21 who self-reported involvement in an intravenous HAM error within the previous three years completed the Second Victim Experience and Support Tool–Revised (SVEST-R). Descriptive statistics were used. In Phase 2, six nurses with moderate-to-high second-victim-related distress participated in phenomenological interviews analyzed using Colaizzi's method. **Results:** Among the 200 screened nurses, 21 (10.5%) reported involvement in an intravenous HAM error, most commonly a wrong-dose error during routine medication administration. Reported contributing factors included high workload, distractions, poor communication, and fatigue. SVEST-R findings indicated psychological, physical, and professional impacts and limited perceived organizational support. Six qualitative themes described emotional distress, threats to professional identity, heightened vigilance, support and stigma, coping and resilience, and calls for system-level change. **Conclusion:** The findings highlight the need for structured support, confidential debriefing, just-culture leadership, and integration of emotional support into patient-safety policies.

Keywords:

Second Victim, High-Alert Medication Errors, Nurses, Patient Safety, Mixed-Methods



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INTRODUCTION

The concept of the “second victim,” introduced by Wu (2000), refers to healthcare professionals who

experience psychological and emotional distress following unanticipated patient harm. This phenomenon captures the profound internal struggle nurses face when a medical error occurs, often

leading to a crisis of professional identity and a perceived loss of clinical competence (Wu, 2000). While the error itself is a clinical failure, the aftermath frequently becomes a personal one, where the nurse's sense of self as a healer is deeply shaken (Mahat et al., 2025).

Despite the growing body of international evidence on this distress, the transition to understanding its local impact reveals a significant knowledge gap. In the Philippines and other neighboring Southeast Asian countries, the experience of the second victim is often intensified by organizational and cultural pressures. Healthcare systems across the region commonly face staffing shortages, heavy workloads, and hierarchical organizational structures that may discourage open error reporting. Fear of negative reactions from supervisors and colleagues, concerns about blame and punitive responses, and weaknesses in reporting systems may discourage nurses from reporting medication errors and near misses and may exacerbate psychological distress following errors (Braiki et al., 2024; Mohd Kamaruzaman et al., 2022; Mok et al., 2020; Namadi et al., 2024; Thungjaroenkul et al., 2024). Within Southeast Asia, nurses navigate a high-stakes environment where hierarchical structures and a pervasive "blame culture" can exacerbate feelings of shame and isolation (Mohd Kamaruzaman et al., 2022; Salmasi et al., 2015; Thungjaroenkul et al., 2024). In these settings, the fear of professional litigation or social stigma often takes precedence over emotional recovery (Mahat et al., 2022; Manias et al., 2021; Seys et al., 2013). Furthermore, as the global and local nursing workforce faces unprecedented strain, addressing these emotional consequences is no longer just a matter of individual well-being—it is vital for workforce sustainability. Unresolved trauma leads to burnout and attrition, further depleting a critical resource in the healthcare system (Burlison et al., 2017; Wondmienieh et al., 2020).

Exploring these experiences is a direct prerequisite for building a just, supportive, and non-punitive healthcare culture (Ozeke et al., 2019; Stone, 2019). A robust support system—ranging from peer programs to organizational counseling—does more than just offer comfort; it actively minimizes long-term emotional harm and promotes safer clinical practice by encouraging transparent reporting rather than defensive silence (Logroño et al., 2023; McClung & Gaberson, 2024; Robichaux & Vittone, 2023; Schröder & Hvidt, 2023; Zaçe et al., 2021).

However, understanding of how this phenomenon manifests within the Philippine context remains limited. Existing studies frequently stop at measuring prevalence, leaving the complex interplay between psychological impact, professional consequences, and the adequacy of local support systems largely unexplored (Aradhya et al., 2023; Coelho et al., 2024; Fathizadeh et al., 2024; Manias et al., 2021; Wondmienieh et al., 2020). This study seeks to bridge that gap by (1) determining the prevalence and extent of second victim experiences

among nurses following medication errors, (2) examining the specific physical, psychological, and professional impacts on their identity, and (3) exploring the lived experiences and coping mechanisms shaped by Filipino organizational and cultural influences. By doing so, this research aims to generate the context-specific insights necessary to shift the healthcare narrative from one of punishment to one of compassion and systemic resilience (Logroño et al., 2023; McClung & Gaberson, 2024; Ozeke et al., 2019; Robichaux & Vittone, 2023; Stone, 2019).

METHODS

1. Design

Phase 1: Quantitative Survey

This study utilized a mixed-methods explanatory sequential design to investigate the experiences of nurses as second victims following medication errors. This design consists of two distinct, interactive phases, where quantitative data collection and analysis (Phase 1) precede and directly inform qualitative data collection and analysis (Phase 2).

Specifically, the quantitative phase established the prevalence, types of medication errors, and the baseline physical, psychological, and professional impacts of these events using a validated tool. The subsequent qualitative phase was connected to the quantitative findings by purposively selecting participants who scored moderate-to-high on second-victim distress subscales. This allowed for a deeper, contextualized exploration of their lived experiences, coping mechanisms, and systemic struggles within a local healthcare setting (Creswell, 2014; Creswell & Plano Clark, 2018; Ivankova et al., 2006).

To ensure methodological integrity, transparency, and reporting rigor, the study was guided by two internationally recognized frameworks: the Good Reporting of a Mixed Methods Study (GRAMMS) for mixed-methods integration, and the Consolidated Criteria for Reporting Qualitative Research (COREQ) for the qualitative component. Consistent with GRAMMS, the quantitative findings directly informed the qualitative phase through a connecting strategy. Nurses identified as experiencing second victim distress based on the SVEST-R results were purposively invited to participate in phenomenological interviews, allowing the qualitative inquiry to further explore and explain the quantitative findings. Integration occurred during the interpretation stage through a contiguous narrative approach, in which the qualitative themes were used to contextualize, expand, and provide deeper insight into the quantitative results, thereby generating a more comprehensive understanding of the second victim phenomenon among nurses following intravenous high-alert medication errors.

Phase 2: Phenomenological Approach

The qualitative phase adopted a Husserlian descriptive phenomenological approach. This philosophical framework asserts that the essence of a phenomenon can be understood through the direct, unaltered lived experiences of individuals. The emphasis was on describing the phenomenon as faithfully as possible while minimizing researcher preconceptions through bracketing (Husserl, 1983).

In alignment with Husserlian philosophy, the investigator practiced *epoché* (bracketing)—consciously setting aside personal preconceptions, administrative biases, and prior clinical assumptions regarding medication errors and institutional blame cultures (Husserl, 1970). This ensured that the analysis remained entirely grounded in the psychological and professional realities articulated by the participants, rather than the researcher's interpretation.

2. Study Setting and Participants

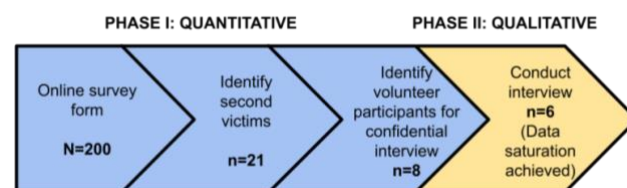
The study was conducted at a private tertiary hospital in Metro Manila, Philippines, featuring a 600-bed capacity. Registered nurses from eligible clinical units were recruited through purposive recruitment and voluntarily participated in the survey. Purposive recruitment was employed to target nurses working in areas where intravenous high-alert medications were routinely administered and who were therefore more likely to have relevant experiences related to the phenomenon under investigation. A total of 200 nurses voluntarily completed the survey and subsequently underwent eligibility screening based on the predefined inclusion and exclusion criteria. Of these, 21 nurses met all the eligibility criteria, including prior involvement in an intravenous high-alert medication error, and comprised the final study sample. This recruitment and screening process ensured that the study included only participants with experiences directly relevant to the research objectives while maintaining methodological transparency.

To ensure the sample specifically reflected frontline clinicians vulnerable to second-victim experiences from high-stakes clinical errors, explicit eligibility criteria were applied:

Inclusion Criteria: (1) Active full-time registered bedside or charge nurses assigned to clinical units; and (2) Involvement in a High-Alert Medication (HAM) error within the past three years, corresponding to Categories C to I of the National Coordinating Council for Medication Error Reporting and Prevention (NCC MERP) Index. **Exclusion Criteria:** (1) Nurse managers, supervisors, and other members of the nursing executive leadership team, as their administrative roles alter their proximity to direct bedside medication administration and changing professional liabilities; and (2) Nurses involved in minor medication errors that did not reach the patient or cause potential harm (NCC MERP Categories A and B).

Figure 1 shows that a total of 200 nurses completed the screening and baseline demographic

questionnaire. This represented all nurses who voluntarily participated during the data collection period. The study employed purposive sampling to identify nurses who had experienced the second victim phenomenon following involvement in an intravenous high-alert medication (HAM) error.



Note. The term "identify second victims" in the original figure refers to nurses who self-reported involvement in an intravenous high-alert medication error and subsequently completed the SVEST-R. It does not indicate a clinical diagnosis or classification based on a validated diagnostic cutoff.

Figure 1. Sampling Method Process Flow

A total of 200 nurses participated in the initial screening and completed the baseline demographic questionnaire. Eligibility was determined solely through respondents' self-report. At the beginning of the survey, nurses were asked whether they had been involved in an intravenous high-alert medication error within the preceding three years. Respondents who answered "No" were automatically exited from the survey because they did not meet the study's inclusion criteria. No verification of self-reported medication errors was conducted using institutional incident reports or other hospital records, as the study prioritized participant confidentiality and voluntary disclosure. Consequently, only 21 nurses reported an eligible medication error experience and completed the Second Victim Experience and Support Tool-Revised (SVEST-R), constituting the final quantitative sample. No formal sample size estimation was performed for the final analytical sample because the study targeted all eligible nurses who voluntarily responded to the survey during the data collection period. The final analytical sample was therefore determined by the number of respondents who met the inclusion criteria, specifically those who self-reported involvement in an intravenous high-alert medication error within the preceding three years. The relatively small analytical sample reflects the low frequency of self-reported intravenous HAM-related medication errors rather than participant attrition or incomplete responses. Subsequently, six participants were purposively selected from those who consented to participate in the qualitative interviews until data saturation was achieved.

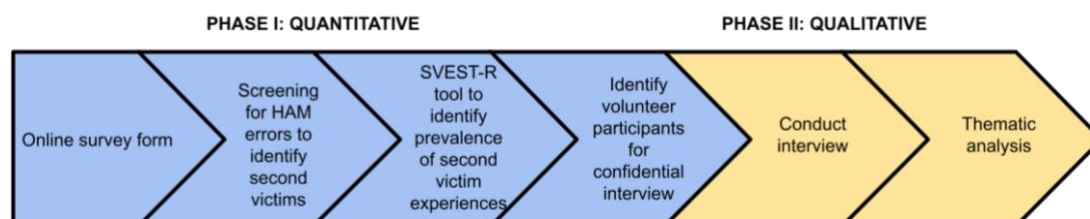
3. Data Collection Process

Quantitative Data Collection

Figure 2 shows that data collection was executed digitally via secure online survey instruments accessible across hospital units. The survey comprised two primary sections:

- 1) **Demographic and Medication Error Profile:** This section gathered baseline data on participant characteristics (age, gender, years of clinical experience, unit assignment, and shift patterns) alongside contextual factors surrounding the error (nurse-patient ratio, self-reported fatigue levels, and shift hours). Errors were classified using the NCC MERP Index to standardize severity.
- 2) **Second Victim Experience and Support Tool – Revised (SVEST-R):** The full, English version of

the validated SVEST-R instrument was deployed to quantify the second victim experience. It utilized established subscales measuring psychological distress, physical distress, reduced professional self-efficacy, turnover intentions, absenteeism, resilience, and perceived support (colleague, supervisor, and institutional).



Note. The SVEST-R was used to assess second-victim-related distress and perceived support among nurses who reported involvement in intravenous high-alert medication errors. It was not used as a diagnostic instrument.

Figure 2. Quantitative Collection Process Flow and Thematic Analysis

Qualitative Data Collection

Participants for the phenomenological phase were purposively selected from the pool of eight consenting nurses identified during Phase 1, as illustrated in Figure 1. The inclusion criteria required that individuals:

- 1) Formally self-identify as having experienced second-victim symptoms following a HAM error.
- 2) Score moderate-to-high on the physical, psychological, or professional distress subscales of the SVEST-R.

In-depth, face-to-face, semi-structured interviews lasting 30 to 40 minutes were conducted in a private, neutral area of the hospital outside of the participants' working hours to preserve confidentiality and mitigate stress.

Figure 2 illustrates the sequential data collection process and analysis used in this study. At the end of the survey, eligible participants were invited to volunteer for the qualitative phase. Those who consented participated in confidential, in-depth interviews, and the resulting transcripts were analyzed using Colaizzi's descriptive phenomenological method. The sequential approach enabled the quantitative findings to identify eligible candidates for the qualitative phase, while the qualitative interviews provided an in-depth understanding of the emotional and professional consequences associated with medication errors.

Data saturation was achieved during the sixth interview, as iterative analysis revealed that no new themes, codes, or structural descriptions of the second-victim experience had emerged. Subsequent review confirmed that additional interviews were yielding repetitive information without contributing novel insights or expanding the emerging thematic structure. The data were considered sufficiently rich to comprehensively describe the essence of nurses' lived experiences as second victims following

medication errors. Following the determination of saturation, the remaining two participants were formally contacted, thanked for their willingness to participate, and informed that further interviews were no longer necessary, maintaining strict adherence to qualitative sample optimization.

4. Data Analysis

Quantitative data were analyzed using Microsoft Excel for Microsoft 365 (Microsoft Corporation, Redmond, WA, USA). Microsoft Excel was selected because the quantitative phase involved only descriptive statistical analyses. Frequencies, percentages, and means were used to summarize participant characteristics and the prevalence of second victim experiences. No inferential statistical analyses were performed, as the study was designed to provide descriptive findings. Responses were systematically examined to identify prevalence rates and trends in medication error attributes.

Following reverse scoring of the designated items, the SVEST-R data were summarized descriptively. For Table 4, item responses of ≥ 3 on the five-point scale were treated as meeting the study's pragmatic threshold. Within each SVEST-R dimension, the number of respondents meeting this threshold was counted for each item and then averaged across all items in that dimension. The mean percentage was calculated by dividing the average number of respondents by the 21 eligible participants and multiplying by 100. For selection into the qualitative phase, respondents with a mean dimension score of ≥ 3.0 on one or more physical, psychological, or professional impact dimensions were considered to demonstrate at least moderate second-victim-related distress.

Critically, the quantitative analysis served as the operational bridge to the qualitative phase. Following reverse scoring of the designated items,

respondents with a score of ≥ 3.0 on one or more SVEST-R dimensions were considered to have at least moderate levels of second-victim-related distress and were identified as primary candidates for the phenomenological interviews. This threshold was used solely as a pragmatic criterion to identify participants likely to provide information-rich accounts of the phenomenon and to facilitate purposive sampling for the qualitative phase. It was not intended to diagnose, confirm, or classify respondents as second victims, as the SVEST-R is a screening instrument designed to assess the severity of second-victim-related distress rather than establish a clinical or diagnostic status. Although the SVEST-R does not prescribe a cutoff for participant selection, a score of 3.0 represents the midpoint of the five-point Likert scale and was adopted in this study to identify nurses demonstrating meaningful distress while allowing sufficient variation in experiences for in-depth qualitative exploration (Burlison et al., 2017; Dato Md Yusof et al., 2023; Winning et al., 2021). Of the 21 eligible candidates, eight consented to be contacted for Phase 2 of the study.

All interviews were transcribed verbatim, coded to protect participant identities, and secured in encrypted files. To ensure descriptive accuracy, member-checking was performed: a summary of the transcribed answers was returned to each participant after their interview for validation and endorsement. All participants confirmed that the summaries accurately reflected their experiences, and no revisions or substantive modifications were requested. The qualitative text was analyzed using Colaizzi's (1978) distinctive seven-step method of data interpretation, which directly operationalizes Husserlian descriptive phenomenology.

5. Research Ethics

Prior to institutional access and data collection, formal administrative and ethical clearances were obtained from the university ethics review board, the Makati Medical Center's Institutional Review Board (MMCIRB2025-05-65), and the Chief Nursing Officer.

Voluntary participation and anonymity were explicitly maintained throughout both phases. Informed written consent was obtained from all qualitative participants prior to audio recording. Given the sensitive nature of discussing clinical errors and professional identity crises within a restrictive healthcare culture, participants were clearly informed of their right to withdraw from the study at any point without administrative penalty or consequence to their employment status. Meal vouchers were given as tokens of appreciation to acknowledge their time without introducing coercion.

RESULTS

Quantitative Findings

The demographic profile of the 200 surveyed nurses showed that most participants were female

and assigned to bedside clinical roles in Medical-Surgical units. In terms of clinical experience, 147 nurses (73.5%) had three years or less of clinical practice, including a substantial proportion who were in their first year of employment.

Out of the sample, 21 nurses reported direct involvement in a High-Alert Medication (HAM) error within the past three years. The drugs involved represent high-risk clinical agents, including narrow-therapeutic-index intravenous infusions (such as Norepinephrine, Fentanyl, and Heparin drips) and high-potency agents like Insulin and low-molecular-weight heparins (LMWH). The majority of these incidents were classified as "wrong dose" errors, occurring primarily during routine medication administration and patient admissions. Because high-alert medication errors are typically associated with formal incident reporting, disclosure, and substantial emotional impact, such events are generally considered salient experiences that are more likely to be accurately remembered than routine clinical occurrences. Limiting the recall period to three years reduced the likelihood of excluding eligible participants who had experienced these infrequent events, thereby enhancing the study's ability to identify nurses who had experienced the second victim phenomenon.

Participants reported multiple contributing factors associated with the medication errors. The most frequently reported factors were high patient load (57.1%), distractions or interruptions (52.4%), poor communication (52.4%), and fatigue (42.9%).

Analysis of the immediate aftermath of the 21 high-alert medication (HAM) incidents revealed a contrast between patient outcomes and psychological responses reported by the nurses involved.

Table 1. Demographic Profile of the Participants ($N = 200$)

Variable	Category	<i>n</i>	%
Age (years)	21–25	91	45.5
	26–30	44	22.0
	31–35	27	13.5
	36–40	22	11.0
	41 and above	16	8.0
Gender	Male	47	23.5
	Female	150	75.0
	Prefer not to say	3	1.5
	Other	0	0.0

Table 1 demonstrates the demographic profile of the 200 nurses who participated in the screening survey. The respondent profile was predominantly composed of young, early-career female nurses, reflecting the workforce composition of many hospital-based nursing services in the Philippines. The concentration of participants in younger age groups and with relatively limited clinical experiences suggests that many respondents were still in the early stages of professional practice, where developing

clinical judgment and confidence may influence how medication errors are experienced and managed.

Table 2 presents the work-related characteristics of the 200 nurses who participated in the screening survey. The respondents were predominantly bedside nurses with relatively short clinical tenure, indicating that the study population primarily consisted of frontline clinicians in the early stages of their professional careers. Most participants were assigned to medical-surgical units, where intravenous high-alert medications are frequently administered and patient care demands are often complex. The predominance of morning-shift assignments further reflects the staffing pattern during the survey period and the clinical environments in which medication administration commonly occurs. Collectively, these work-related characteristics suggest that the respondents were routinely engaged in direct medication management within high-volume, high-acuity clinical settings.

Table 2. Work-Related Profile (*N* = 200)

Variable	Category	<i>n</i>	%
Role	Bedside nurse	133	66.5
	Charge nurse	41	20.5
	Other	26	13.0
Tenure	Less than 1 year	62	31.0
	1 to 3 years	85	42.5
	4 to 6 years	25	12.5
	7 to 10 years	12	6.0
	More than 10 years	16	8.0
Shift Assign-ment	Morning	117	58.5
	Afternoon	18	9.0
	Night	48	24.0
	Other	17	8.5
Area of Assign-ment	Medical–Surgical	170	85.0
	VIP	13	6.5
	Endoscopy	4	2.0
	ICU	5	2.5
	Operating Room	2	1.0
	OB/Pedia	6	3.0

Table 3 shows the characteristics of intravenous high-alert medication errors reported by nurses who met the study's eligibility criteria. Overall, the findings indicate that medication errors were relatively uncommon among the screened respondents, but when they occurred, they were predominantly dosing-related and most often took place during routine medication administration. The pattern of contributing factors suggests that these incidents were influenced primarily by system- and workflow-related conditions, including high patient workload, frequent interruptions, poor communication, and fatigue, rather than by isolated individual mistakes. Although the majority of reported

errors did not result in patient harm or cause only minimal clinical consequences, several incidents required clinical intervention, prolonged hospitalization, or contributed to patient death, underscoring the potential seriousness of intravenous high-alert medication errors despite their infrequent occurrence.

Table 4 presents the average item-level responses meeting the study's pragmatic threshold among the 21 nurses who completed the SVESST-R. Psychological impact had the highest mean percentage (67%), indicating that psychological responses such as guilt, fear, anxiety, and loss of confidence were the most frequently reported impact-related experiences. Physical impact followed at 59%, while professional impact was reported at a mean percentage of 49%. Turnover intention and absenteeism had mean percentages of 48% and 38%, respectively. Perceived support was less frequently reported, particularly supervisor support (8%), colleague support (20%), and institutional support (24%). These findings are descriptive and should not be interpreted as diagnostic prevalence estimates.

Table 5 summarizes the multidimensional burden experienced by nurses following intravenous high-alert medication errors by integrating patient outcomes with the corresponding psychological, physical, and professional consequences reported by second victims. Collectively, the findings demonstrate that the impact of medication errors extends well beyond their immediate clinical consequences, affecting nurses across multiple domains of well-being and professional practice. Notably, substantial emotional, physical, and occupational distress was evident even though most reported medication errors resulted in little or no patient harm. This pattern suggests that nurses' experiences as second victims are influenced not only by the severity of patient outcomes but also by the personal and professional meaning they attribute to the event.

Qualitative Findings

Of the eight nurses who consented to be contacted, six participated in interviews before data saturation was achieved. No new themes emerged during the sixth interview. Six themes summarized the nurses' second-victim experiences, as presented in Figure 3. Table 6 presents the profiles of the six participants.

Table 6 shows the demographic and professional characteristics of the six nurses who participated in the qualitative phase of the study. The participants represented a range of ages, years of clinical experience, and medication error types, while most were assigned to medical-surgical units where high-alert medications are routinely administered. Although the group was predominantly female, it included both male and female nurses and reflected varying levels of clinical tenure. Their background and clinical experiences provide multiple perspectives on the second victim phenomenon.

Table 3. Medication Error Profile

Variable	Category	<i>n</i>	%
Prevalence of High-Alert Medication Error (past 3 years) (<i>N</i> = 200)	Yes	21	10.5
	No	179	89.5
Type of Medication Error (<i>n</i> = 21)	Wrong medication	1	4.8
	Wrong dose	13	62.0
	Wrong route	0	0.0
	Wrong patient	0	0.0
	Wrong time	1	4.8
	Missed dose	1	4.8
	Other	5	23.8
Outcome of Medication Error (<i>n</i> = 21)	No harm	17	81.0
	Temporary harm	0	0.0
	Required intervention	1	4.8
	Prolonged hospitalization	2	9.5
	Contributed to death	1	4.8
Category of Error (<i>n</i> = 21)	C: Reached patient, no harm	10	47.6
	D: Monitoring required, no harm	8	38.2
	E: Temporary harm	1	4.8
	F: Harm requiring hospitalization	1	4.8
	G: Permanent harm	0	0.0
	H: Life-sustaining intervention	0	0.0
	I: Contributed to death	1	4.8
Timing of Error (<i>n</i> = 21)	During admission	6	28.6
	During transfer	1	4.8
	During discharge	0	0.0
	Routine medication administration	12	57.1
	Other	2	9.5
Contributing Factors to Error (<i>n</i> = 21)	Fatigue	9	42.9
	High patient load	12	57.1
	Distractions/interruptions	11	52.4
	Poor communication	11	52.4
	Lack of training	2	9.5
	Equipment issues	3	14.3

Note. One incident requiring intervention was classified as NCC MERP Category D because the intervention prevented patient harm. Multiple responses were allowed for contributing factors; therefore, percentages do not total 100%.

Table 4. Descriptive Distribution of Second-Victim-Related Experiences and Perceived Support Among Participants (*n* = 21)

Category	Description	Mean Number of Respondents Meeting the Threshold	%
Physical Impact	Somatic symptoms (e.g., headaches, palpitations, fatigue, sleep disturbance)	12.4	59
Psychological Impact	Emotional distress (e.g., guilt, fear, anxiety, loss of confidence)	14.0	67
Professional Impact	Changes in practice (e.g., hypervigilance, reduced performance, job dissatisfaction)	10.25	49
Turnover Intention	Intent to leave position	10.0	48
Absenteeism	Work absence related to distress	8.0	38
Colleague Support	Perceived support from peers	4.25	20
Supervisor Support	Perceived support from immediate supervisors	1.75	8
Institutional Support	Perceived organizational support systems	5.0	24

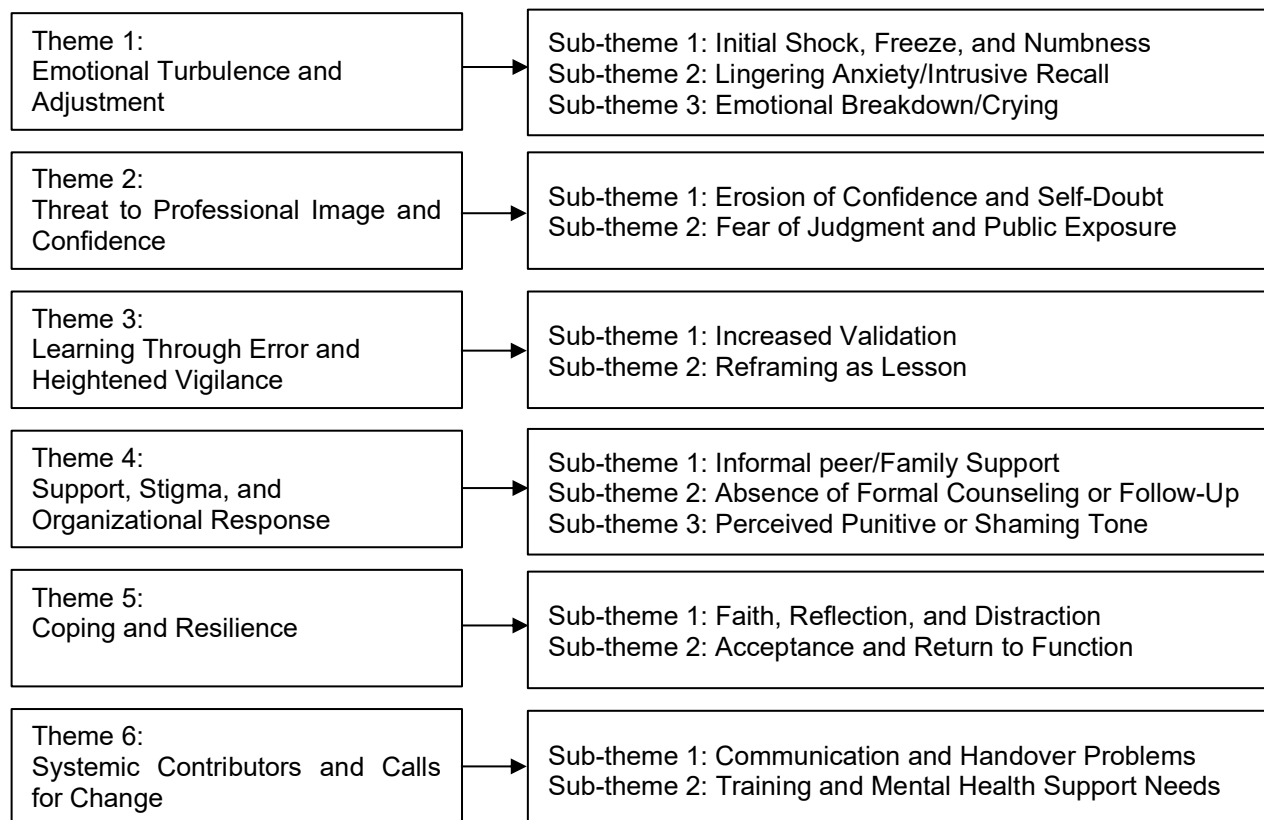
Note. After reverse scoring of the designated items, responses of ≥ 3 were treated as meeting the study's pragmatic threshold. For each dimension, the number of respondents meeting the threshold was counted for each item and averaged across all items within that dimension. Mean percentage = (mean number of respondents $\div$ 21) $\times$ 100. Higher values indicate greater impact for distress-related dimensions and greater perceived support for support dimensions. The values are descriptive and do not represent diagnostic prevalence estimates.

Table 5. The Multidimensional Burden

Attribute	Key Statistical Trend & Interpretation
Patient Outcome	81% resulted in no reported harm, while 18 incidents (85.7%) were classified as NCC MERP Category C or D, including one incident requiring intervention without patient harm.
Psychological Burden	An average of 67% of respondents met the pragmatic threshold across psychological-impact items. Reported experiences included guilt, fear, anxiety, and diminished confidence, even though most incidents did not result in patient harm.
Physical Manifestations	An average of 59% of respondents met the pragmatic threshold across physical-impact items. Reported manifestations included sleep disturbances, distressing dreams, fatigue, and palpitations.
Professional Impact	An average of 49% of respondents met the pragmatic threshold across professional-impact items. Reported consequences included diminished clinical self-efficacy, job dissatisfaction, and heightened vigilance during routine tasks.

Table 6. Demographic Profile of the Six Participants

Participants	Age (years)	Gender	Area of Assign-ment	Tenure (years)	Error
P1	21–25	Male	Medical-Surgical	< 1	Chemotherapy
P2	31–35	Female	Neurology	1–3	Vasopressor
P3	31–35	Female	Medical-Surgical	4–6	Chemotherapy
P4	26–30	Female	Medical-Surgical	1–3	Sedative
P5	26–30	Female	Medical-Surgical	1–3	Opioid analgesic
P6	26–30	Female	Medical-Surgical	4–6	Anticoagulant

**Figure 3.** Themes and Sub-themes of Nurses' Second-Victim Experiences

1. Theme 1: Emotional Turbulence and Adjustment
Theme 1 consists of three subthemes that describe the emotional responses of nurses following involvement in intravenous high-alert medication errors. Participants recounted an intense emotional journey beginning with immediate shock and

emotional numbness, followed by persistent fear and intrusive recollections of the event, and culminating in episodes of emotional release through crying. Together, these experiences illustrate the profound psychological impact of medication errors and the

gradual process of emotional adjustment as nurses attempt to cope with the aftermath.

1.1 Sub-theme 1: Initial Shock, Freeze, and Numbness

The participants consistently described their immediate reaction to the medication error as one of overwhelming shock. Many experienced a temporary inability to think clearly, emotional numbness, or a sense of mental paralysis upon realizing that an error had occurred. Their first thoughts centered on the patient's safety and the possibility that irreversible harm had been caused. This initial response reflected the sudden disruption of their professional confidence and the overwhelming realization of the potential consequences of their actions.

P1 described becoming emotionally blank immediately after realizing the error:

"It felt like nothing. My emotions just went blank. I wasn't angry, and I didn't even blame myself. I realized that I could no longer control what had already happened."

This illustrates how the immediate response to the error was characterized by emotional detachment rather than overt distress. The recognition that an incident could no longer be reversed appeared to result in a temporary suspension of emotional processing before other emotional reactions emerged.

Similarly, P5 recalled that concern for the patient's life immediately overwhelmed every other thought:

"The first thing that came into my mind when I realized what had happened was, 'Did I kill my patient?' That was honestly my first thought. Then I started thinking about my nursing license. 'Am I going to lose it?' I worked so hard for four years to earn it. I even asked the doctor, 'Doc, did I kill my patient?'"

This account illustrates the profound emotional shock experienced immediately after the error, characterized by an intense fear of harming the patient, followed by anxiety over the potential loss of professional identity and the consequences for the participant's career.

P4 likewise focused on the patient's condition and feared that the medication error might have resulted in serious harm:

"The patient. I thought, 'Oh my God, maybe they were overdosed or something happened. But I also remained hopeful because the patient made it through the night. The medication had only been started the previous day, and the error was discovered the following morning. It hadn't even been 24 hours yet when we found out. The patient was also receiving other medications at that time. I was really scared—scared for the patient because I kept wondering what we were going to do.'"

This narrative demonstrates that the participant's immediate emotional response was driven primarily by concern for the patient's safety rather than personal repercussions. The uncertainty

surrounding the patient's clinical outcome and the responsibility to respond to the incident contributed to an intense sense of fear and emotional distress, reflecting the moral and professional burden experienced following the medication error.

1.2 Sub-theme 2: Lingering Anxiety/Intrusive Recall

Following the initial shock, participants described persistent emotional distress that continued even after the incident had ended. They experienced lingering anxiety, recurrent thoughts about the error, and apprehension about returning to work or facing discussions regarding the incident. For some, these intrusive memories gradually subsided, whereas others struggled with ongoing fear that affected their confidence and willingness to continue bedside nursing.

P3 described how the emotional impact of the medication error extended beyond the immediate incident.

"It felt like I was experiencing something like post-traumatic stress. I kept feeling afraid that I might hear something else about the incident or that something more would happen. That fear stayed with me for about a week. But after a week, it was gone. I gradually returned to my normal self."

This narrative illustrates how the medication error continued to intrude upon the participant's thoughts even after the event had been addressed. Although the anxiety gradually subsided, the persistent anticipation of negative consequences during the first week reflects the lingering psychological distress characteristic of the second victim experience.

P4 explained that the fear remained because the incident continued to be discussed within the workplace:

"Even days after, the fear was still there because I knew it would still be talked about. I was still afraid. It wasn't the kind of fear that made me not want to come to work. Rather, I remained worried throughout the patient's stay in the hospital, wondering whether the patient would really survive. The patient had to be closely monitored to make sure there were no adverse effects from what we had done."

This narrative illustrates how the participant's anxiety persisted beyond the immediate event, driven not only by concerns about professional scrutiny but also by ongoing uncertainty regarding the patient's recovery. The need for continuous monitoring served as a constant reminder of the error, prolonging the participant's emotional distress and reinforcing thoughts about the potential consequences of the incident.

The emotional burden became so overwhelming for P5 that continuing clinical practice became difficult:

"The fear, honestly, made me feel like I didn't want to do bedside nursing anymore. I was just forcing myself every day to go to work. Every day I had to force myself to come to work"

because I kept thinking, 'What if I make another mistake?' But I would still come in because I knew I had to, and I reminded myself that this experience was truly a lesson learned."

This account illustrates how the participant's fear extended beyond the immediate aftermath of the medication error and influenced professional confidence and daily work performance. Although the participant continued to fulfill clinical responsibilities, the persistent anticipation of committing another error reflected lingering anxiety that had not yet fully resolved. At the same time, the decision to remain in bedside nursing despite these fears demonstrates the participant's resilience and commitment to learning from experience.

1.3 Sub-theme 3: Emotional Breakdown/Crying

Participants described crying as a natural emotional release after attempting to contain their distress during the incident. Emotional breakdowns typically occurred after they had left the workplace, when they were finally alone and able to process the weight of what had happened. Their narratives reflected profound sadness, guilt, self-blame, and emotional exhaustion.

P3 openly acknowledged crying after returning home:

"I won't pretend I didn't cry. I really cried at home. I kept asking myself, 'Did I make the wrong decision? Was my mistake really that serious?' I cried for that one day. After that, I told myself that maybe this was just a trial that I had to go through."

This narrative illustrates how crying became an emotional release following the medication error, allowing the participant to express feelings that had been suppressed while managing the immediate clinical situation. The participant's self-questioning reflects an internal struggle with guilt and uncertainty, while the eventual reframing of the incident as a personal trial suggests the beginning of emotional acceptance and psychological recovery.

P5 described intense self-criticism accompanying the emotional breakdown,

"I just cried. I told myself, 'You're so stupid. You're so dumb'. I just cried. I couldn't sleep."

This account illustrates that the participant's emotional breakdown extended beyond crying alone. It was characterized by persistent self-condemnation, rumination, and sleep disturbance, reflecting the profound psychological impact of the medication error. The participant's internal dialogue reveals how feelings of guilt and perceived professional failure became intertwined, intensifying the emotional suffering commonly experienced by second victims.

Similarly, P6 recalled being unable to control the emotional release after reaching home:

"When I got back to my apartment, I really broke down sobbing. I was pregnant at that time, which made everything even more overwhelming."

This narrative illustrates how the participant postponed expressing emotions until reaching a safe

and private environment. The intense crying reflected the cumulative psychological burden of the medication error, while the participant's pregnancy heightened concerns about both personal well-being and the emotional impact of the experience. The inability to suppress these emotions any longer underscores the profound distress associated with becoming a second victim.

2. Theme 2: Threat to Professional Image and Confidence

Theme 2 consists of two subthemes that describe how involvement in a medication error challenged nurses' professional identity and confidence. Beyond the immediate emotional distress, participants experienced diminished self-confidence and became increasingly concerned about how they were perceived by colleagues. These experiences affected their sense of competence, professional credibility, and confidence in performing their clinical responsibilities.

2.1 Sub-theme 2.1 Erosion of Confidence and Self-Doubt

Participants described a decline in self-confidence after the medication error. The incident caused them to question their clinical competence and professional abilities, particularly because they believed that nurses were expected to provide safe and error-free care. For some, the error became a source of persistent self-doubt, making them feel inadequate despite their previous experience and capabilities.

P4 described how the incident greatly diminished confidence, particularly because of the expectations associated with being a senior nurse:

"My confidence really dropped at that time, especially because I was a senior nurse then. They even assigned me as the desk nurse to validate medication orders, but I kept questioning myself, 'Am I really doing this correctly?' It made me feel like I didn't want to be in a position like that anymore because I wasn't sure I was capable of handling that level of accountability."

This narrative illustrates how the medication error threatened the participant's professional identity beyond the immediate clinical event. Rather than simply diminishing confidence, the experience altered the participant's perception of professional competence and readiness for leadership responsibilities.

Similarly, P5 shared that the experience fundamentally changed how they viewed their own competence:

"Honestly, I really lost my confidence. I started telling myself that maybe I'm not good. After all these years of being a nurse, I kept asking myself, 'Why couldn't I have done better that day?' You really lose confidence and trust in yourself. Even now, I still feel that way."

This narrative demonstrates that the participant's self-doubt extended beyond the

immediate emotional response to the medication error and became a lasting challenge to professional identity. Rather than viewing the incident as an isolated mistake, the participant internalized it as evidence of personal inadequacy, resulting in a persistent loss of confidence and diminished trust in clinical judgment.

P6 likewise recalled feeling emotionally discouraged after committing a medication error for the first time:

"At first I really felt down. It was as if I had lost all trust in myself. It was my first time making a mistake after working in this hospital for so many years. That feeling of being discouraged didn't just go away - it stayed with me for weeks afterward."

This narrative illustrates how a single medication error was sufficient to disrupt the participant's confidence in personal clinical abilities. The incident was not perceived as an isolated mistake but as a challenge to the participant's professional identity and competence. The prolonged feelings of discouragement and diminished self-trust demonstrate that the erosion of confidence extended well beyond the immediate aftermath of the event.

2.2 Subtheme 2: Fear of Judgment and Public Exposure

Participants also expressed anxiety about how others perceived them after the medication error. They feared being judged by colleagues, feeling embarrassed when the error became known, and worrying that the incident would negatively affect their professional reputation. Some participants perceived that the error continued to define them even after the event had passed, reinforcing feelings of shame and vulnerability within the workplace.

P2 described feeling embarrassed because the error could be directly linked to them:

"My name was even on the label. So I felt anxious and ashamed that I was found lacking. It made me feel like I had fallen short as a nurse."

This narrative illustrates that the participant's distress extended beyond concern for the clinical consequences of the medication error. The visibility of the participant's identity intensified feelings of shame and perceived professional inadequacy, as the error was no longer a private mistake but one that could be readily attributed to a specific individual.

P1 shared that the experience continued to influence how some senior colleagues treated them, making them feel that the error had become part of their professional identity:

"There were seniors who used it not as a reminder to do better, but as a reminder that I might make a mistake again. Instead of encouraging me to avoid repeating the error, the way they said it made me feel like, 'You need to be careful because you're someone who makes mistakes'."

This narrative illustrates how the participant experienced ongoing judgment beyond the

immediate aftermath of the medication error. Repeated references to the incident were perceived not as constructive feedback but as reminders that reinforced a negative professional identity. Rather than promoting confidence and learning, these interactions intensified feelings of stigmatization and heightened the participant's fear of being permanently labeled as a nurse prone to mistakes.

3. Theme 3: Learning Through Error and Heightened Vigilance

Theme 3 consists of two subthemes that describe how nurses transformed their medication error experience into an opportunity for professional growth. Although the incident caused significant emotional distress, participants demonstrated a commitment to improving their clinical practice by adopting safer medication administration behaviors and reframing the experience as a valuable learning opportunity. These responses reflected resilience and an increased awareness of patient safety responsibilities.

3.1 Sub-theme 1: Increased Validation

Following the medication error, participants reported becoming more vigilant during medication administration. They described intentionally strengthening their safety practices through more frequent validation, double-checking, and verification of medications. Rather than relying on routine practice, they became more deliberate and systematic in ensuring medication safety, reflecting an increased commitment to preventing future errors.

P1 described becoming more consistent in verifying medications before administration:

"The experience really improved my routine when it comes to medication preparation and administration. I validate it more consistently now. I've become far more critical about the validation process before administering any medication."

This narrative demonstrates how the medication error became a catalyst for professional learning and behavioral change. The participant described moving beyond routine practice toward a more reflective and vigilant approach to medication administration, recognizing validation as an essential safeguard against future errors. This heightened attentiveness reflects the participant's commitment to improving patient safety while rebuilding confidence in clinical practice.

P3 explained that the experience prompted greater caution and encouraged them to seek additional information whenever uncertainties arose:

"I became more careful. I'm now extremely careful with everything - from checking the physician's order to ensuring the sterility of the medication. Sometimes I call the pharmacy to check how long the medication remains stable. Now, I make sure to double-check it. Because of that, I feel more confident knowing that I've done my very best. I also make it a point to clarify things with the doctors whenever I'm

unsure. I've become much more attentive to every detail."

This narrative illustrates how the medication error transformed the participant's clinical practice from one based primarily on routine to one characterized by deliberate verification and proactive communication. Rather than perceiving clarification as a sign of uncertainty, the participant embraced it as a professional responsibility essential to ensuring medication safety.

Similarly, P6 emphasized that repeated verification had become a routine part of their practice following the incident:

"I really do double-check or even triple-check. I make sure to validate everything now. Validation has really become part of my routine. That's what has stayed with me since the incident - I make sure everything is validated before proceeding. When I make decisions now, I find myself thinking twice about everything."

This narrative demonstrates how the participant internalized the lessons learned from the medication error by adopting repeated verification as a routine safeguard in clinical practice. The shift from automatic decision-making to deliberate reflection illustrates heightened vigilance, where double- and triple-checking became habitual strategies to minimize the risk of future errors.

3.2 Sub-theme 2: Reframing as Lesson

Participants also described a gradual shift from self-blame toward acceptance and professional growth. Rather than allowing the medication error to define them, they chose to acknowledge responsibility, learn from the experience, and use it as motivation to improve their practice. This reframing helped them regain purpose, rebuild confidence, and continue providing patient care despite the emotional impact of the incident.

P3 reflected on accepting responsibility and using the experience as motivation for improvement:

"I admitted what happened and acknowledged that I was the responsible individual. My conscience wouldn't have been at peace if I hadn't accepted accountability, even if it meant paying for the patient's medication myself. In the end, the whole experience became my motivation to become a better nurse."

This narrative illustrates the participant's transition from self-blame to self-reflection. Accepting responsibility was not viewed solely as a consequence of the medication error but as a meaningful step toward restoring personal integrity and professional accountability. By reframing the incident as a source of motivation rather than a defining failure, the participant demonstrated resilience and a commitment to continuous learning. This transformation reflects how second victims can derive constructive meaning from adverse experiences, ultimately strengthening their professional practice.

Likewise, P5 viewed the incident as an important learning experience that encouraged them to continue practicing despite their fears:

"Everyday I had to force myself to come to work because I kept thinking, 'What if I make another mistake?' But I would still come in because I knew I had to, and I reminded myself that this experience was truly a lesson learned."

This narrative illustrates how the participant engaged in a process of meaning-making by acknowledging fear while refusing to let it dictate professional practice. Rather than withdrawing from bedside nursing, the participant consciously reframed the medication error as a valuable learning experience that strengthened perseverance and reinforced a commitment to safe nursing practice.

4. Theme 4: Support, Stigma, and Organizational Response

Theme 4 consists of three subthemes that describe participants' experiences with interpersonal and organizational support following a medication error. While nurses found comfort through trusted colleagues, friends, and family members, they consistently reported limited formal organizational support. Some also perceived responses from colleagues as dismissive or punitive, which intensified feelings of shame and emotional distress.

4.1 Sub-theme 1: Informal Peer/Family Support

Participants described relying primarily on informal support from family members, friends, and trusted colleagues to cope with the emotional impact of the medication error. These individuals provided emotional reassurance, opportunities to express their feelings, and encouragement to regain confidence. In the absence of structured organizational support, these personal relationships became their primary source of comfort and recovery.

P3 explained that openly sharing emotions with family members and friends helped them cope with the experience:

"I find it easy to verbalize my feelings and emotions. Whenever I'm sad or going through something difficult, I don't want to stay down for long because the people around me know that I'm usually a strong person. I think prayer really helped me. My friends? I'm grateful for them. And of course, my family, too. They could sense whenever I was struggling. I didn't even have to explain everything - they already knew that I was going through something."

This narrative illustrates that emotional recovery was supported not only by verbalizing distress but also by the presence of trusted relationships that offered understanding without requiring detailed explanations. The participant's reliance on family, friends, and spiritual faith reflects the importance of informal support systems in mitigating the psychological burden of the second victim experience. Feeling emotionally understood and accepted enabled the participant to process the

incident more constructively and gradually regain emotional stability.

Similarly, P6 described receiving reassurance from a trusted colleague at work, which helped her restore confidence:

"I was only able to talk to a friend at work. They were helpful because they still gave me their trust. Knowing that they still believed in me meant a lot. They told me, 'It's okay that you stumbled—you can still get back up.'"

This narrative illustrates that recovery was strengthened by emotional reassurance from a trusted peer who responded with empathy rather than judgment. The participant's experience highlights how expressions of continued trust and encouragement helped restore self-confidence that had been diminished by the medication error. Rather than allowing the incident to define the participant's professional identity, the colleague's supportive response reinforced the belief that mistakes could become opportunities for growth and recovery.

P1 likewise sought emotional support from family after the incident,

"The very first coping mechanism I had was to talk to the senior nurses I was close to. I told them exactly what had happened and asked them what I should do. In return, they encouraged me. They were very encouraging. I also had to seek help from my parents."

This narrative illustrates how the participant actively sought emotional support from both professional and personal support networks to cope with the psychological impact of the medication error. The encouragement received from experienced colleagues helped normalize the participant's experience without minimizing the seriousness of the incident, reducing feelings of isolation and self-blame. Likewise, the support of family members provided additional emotional comfort, reinforcing the participant's ability to cope with the event.

4.2 Sub-theme 2: Absence of Formal Counseling or Follow-Up

Despite experiencing considerable emotional distress, participants consistently reported that no formal psychological support or structured follow-up was provided after the medication error. They described the absence of counseling, debriefing sessions, or referrals for professional assistance, leaving them to cope with the emotional consequences largely on their own.

P2 recalled that no formal discussions or organizational support followed the incident:

"They didn't talk to me about it... For this incident, we never discussed it. Maybe I thought it wasn't a big deal. So when it comes to a formal support system, there was none. In fact, there wasn't even an informal conversation with my peers about that I had gone through."

This narrative illustrates how the participant experienced a lack of organizational support following the medication error. The absence of both formal

interventions, such as debriefing or counseling, and informal opportunities to discuss the emotional impact of the incident left the participant without a space to process the experience.

Similarly, P3 stated that formal counseling was not available:

"There was no formal counseling. It was more about management handling the situation. Looking back, I think some nurses really need that kind of support. Nothing like that, nothing formal."

This narrative illustrates that the organizational response primarily focused on managing the clinical and administrative aspects of the medication error, while the participant's emotional recovery remained largely unaddressed. The participant's acknowledgment that other nurses might need formal counseling reflects an awareness that the psychological consequences of medication errors extend beyond individual resilience.

P6 also confirmed the lack of institutional support after the event:

"There was no counseling, no referral to the employee clinic. I was only able to talk to a friend at work. They were helpful because they still gave me their trust. Knowing that they still believed in me meant a lot."

This narrative illustrates that the organizational response was largely limited to managerial oversight, with no formal mechanisms in place to address the participant's emotional well-being. In the absence of counseling or referral to employee support services, the participant depended on informal peer support to navigate the psychological impact of the medication error. The continued trust expressed by a colleague became a vital source of reassurance, highlighting how informal support partially compensated for the absence of institutional interventions.

4.3 Sub-theme 3: Perceived Punitive or Shaming Tone

Participants perceived that some workplace responses emphasized blame rather than support. Instead of receiving constructive guidance, they felt criticized, stigmatized, or reminded of their mistakes, reinforcing feelings of shame and inadequacy. These experiences contributed to a workplace environment in which nurses felt judged rather than psychologically supported following an error.

P1 described how some senior colleagues repeatedly referenced the incident in a way that felt discouraging rather than educational:

"There were seniors who used it not as a reminder to do better, but as a reminder that I might make a mistake again. Instead of encouraging me to avoid repeating the error, the way they said it made me feel like, 'You need to be careful because you're someone who makes mistakes.'"

This narrative illustrates how the participant perceived repeated references to the medication error as stigmatizing rather than supportive. Although the comments may have been intended as reminders

to promote safe practice, they were experienced as criticisms that reinforced a negative professional identity. Feeling repeatedly associated with the error undermined the participant's confidence and created a sense of being defined by a single adverse event rather than by overall professional competence.

Similarly, P5 recalled receiving dismissive comments that minimized their emotional distress while criticizing their competence:

"They would tell me not to think about it anymore. That it was nothing. That I was just being dramatic. That I'm already a senior, so I shouldn't be making mistakes like that. I also knew that behind my back, there were probably negative things being said about me."

This narrative illustrates how the participant experienced a workplace culture in which emotional vulnerability was dismissed rather than acknowledged. Comments suggesting that the participant was being dramatic invalidated the emotional distress associated with the medication error, while expectations tied to being a senior nurse intensified feelings of inadequacy and self-blame. Moreover, the participant's belief that colleagues were speaking negatively behind their back heightened the sense of stigma and social isolation.

5. Theme 5: Coping and Resilience

Theme 5 consists of two subthemes that describe how nurses coped with the emotional consequences of medication errors and gradually regained their ability to function professionally and personally. Participants employed various coping strategies, including spiritual practices, distraction, and focusing on meaningful relationships, before eventually accepting the experience and moving forward. These responses illustrate the development of resilience despite the psychological burden of the incident.

5.1 Sub-theme 1: Faith, Reflection, and Distraction

P3 described finding comfort through prayer, both for the patient's recovery and for personal strength:

"I took to heart the advice of the people around me. They would tell me, 'Just let it go.' Sometimes I still think about what happened. I just prayed that the patient would be okay. I prayed that He would give me courage. Not every duty is going to be perfect."

This narrative illustrates how faith became an important coping resource that helped the participant reinterpret the medication error within a broader perspective of personal growth and perseverance. Prayer provided not only emotional comfort but also a sense of hope and inner strength that enabled the participant to confront lingering guilt without becoming overwhelmed by it. By accepting that imperfection is an inevitable part of professional practice while continuing to seek spiritual guidance, the participant demonstrated resilience through meaning-making and emotional acceptance.

P1 coped by intentionally distracting themselves from distressing thoughts:

"I just continued with my usual routine. I just distracted myself. I played games. That became my way of coping with what had happened."

This narrative illustrates how the participant employed distraction as an adaptive coping strategy to regulate emotional distress. Returning to familiar routines and engaging in personally meaningful activities provided a temporary reprieve from persistent thoughts about the medication error, allowing the participant to regain a sense of normalcy and emotional stability. Rather than avoiding responsibility for the incident, the participant used these activities to create psychological space for recovery while gradually processing the experience.

Similarly, P6 explained that shifting attention to family responsibilities helped them move forward:

"I ate. That helped. In the following months, I just focused on my baby because I was already close to giving birth. My attention gradually shifted to preparing for my child."

This narrative illustrates how the participant found resilience by investing emotional energy in a meaningful life role outside the workplace. Rather than allowing the medication error to dominate daily life, the participant redirected attention toward personal well-being and the responsibilities of impending motherhood. This shift in focus provided emotional grounding and fostered psychological recovery, enabling the participant to move beyond the distress associated with the incident.

5.2 Sub-theme 2: Acceptance and Return to Function

As participants gradually processed the experience, they described reaching a point of acceptance that enabled them to resume their professional responsibilities and daily routines. Rather than allowing the medication error to permanently define them, they acknowledged the experience, accepted its emotional impact, and continued practicing with renewed determination. Acceptance became an important step toward rebuilding resilience and restoring confidence.

P1 reflected on accepting the incident and returning to everyday life:

"I was really disappointed with myself that day. But over time, I realized that I couldn't keep being angry or sad because there were many factors that contributed to what happened. I just accepted it - the criticism and whatever the manager required of me - not just submitting the incident report, but also explaining what had happened, and after that, I simply continued with my daily life."

This narrative illustrates how acceptance became a pivotal step in the participant's recovery. Rather than remaining overwhelmed by guilt or dwelling on the mistake, the participant acknowledged personal responsibility while also recognizing the complexity of the circumstances

surrounding the incident. Accepting constructive criticism and organizational accountability enabled the participant to move beyond the emotional impact of the medication error and re-engage with professional responsibilities.

Similarly, P5 demonstrated resilience by choosing to continue to work while recognizing the experience as an opportunity for growth:

"I'll go to work because it was really a lesson learned. Every day I had to force myself to come to work because I kept thinking, 'What if I make another mistake?' But I would still come in because I knew I had to, and I reminded myself that this experience was truly a lesson learned."

This narrative illustrates that acceptance did not mean the absence of fear. Instead, the participant acknowledged ongoing anxiety while making a deliberate decision to continue fulfilling professional responsibilities. By repeatedly choosing to return to clinical practice and reframing the medication error as a valuable learning experience, the participant demonstrated psychological resilience and professional commitment.

6. Theme 6: Systemic Contributors and Calls for Change

Theme 6 consists of two subthemes that reflect participants' perceptions of organizational factors contributing to medication errors and their recommendations for improving patient safety and staff well-being. Rather than viewing medication errors solely as individual failures, participants identified opportunities for system-level improvements, particularly in communication, staff training, and psychological support. Their experiences underscored the need for organizational strategies that both prevent errors and support nurses after adverse events.

6.1 Sub-theme 1: Communication and Handover Problems

Participants identified ineffective communication and inconsistent handover processes as important contributors to medication errors. They emphasized that clearer communication, more comprehensive endorsements, and better information sharing among healthcare professionals could reduce the likelihood of similar incidents and improve patient safety.

P1 stressed the importance of effective communication among healthcare staff:

"Communication is really important because, like I said, during the endorsement from the previous shift, we knew that the medication was only stable for one hour, so we had already prepared for that. But we failed to communicate this to the charge nurse. We simply assumed that everyone already knew the medication's stability, but in the end, they didn't. Then the previous shift had already gone home, and the patient's IV access was removed. I was the only one left, trying to coordinate with the IV

team and figure out what to do with the medication because it could no longer be administered. I was left to handle everything. What's really needed is better communication, and everyone truly needs to be informed."

This narrative illustrates that the participant perceived the medication error as arising from failures in team communication rather than from individual negligence alone. Assumptions during handover, incomplete transfer of critical medication information, and the absence of a shared understanding among healthcare team members created vulnerabilities that compromised continuity of care. Reflecting on the experience, the participant identified effective communication and standardized handover practices as essential safeguards for preventing similar incidents.

Similarly, P6 highlighted the need to strengthen endorsement practices during shift handovers:

"We should always double-check if there are new orders or if anything needs clarification. I hope the process of receiving endorsements on our floors can be improved. At that time, they prioritized giving the patient a sponge bath before receiving our endorsement, so the handover wasn't completed properly."

This narrative illustrates how the participant viewed communication failures during shift handovers as a significant system-level contributor to medication errors. Delays in receiving endorsement and the prioritization of other clinical tasks disrupted the timely exchange of essential patient information, creating opportunities for misunderstandings and omissions. The participant's call for consistent double-checking and more structured endorsement practices reflects an awareness that safe medication administration depends not only on individual vigilance but also on reliable communication processes within the healthcare team.

6.2 Sub-theme 2: Training and Mental Health Support Needs

Participants also recognized gaps in organizational preparation and post-incident support. They described limited opportunities for specialized training and emphasized the absence of accessible mental health services following medication errors. Participants believed that strengthening both clinical education and psychological support would improve nurses' competence, well-being, and resilience.

P1 described not receiving adequate preparation for administering high-risk medications:

"When medication errors happen, I think nurses should be given reinforcement afterward. Maybe provide educational materials or even dedicated training sessions. I never received formal training on chemotherapy drugs."

This narrative illustrates that the participant viewed the medication error as an opportunity to improve organizational learning rather than simply assign individual blame. The absence of formal training in administering high-risk medications was

perceived as a system-level vulnerability that may have contributed to uncertainty in clinical practice. By advocating for continuing education and competency-based training, the participant emphasized the need for proactive organizational strategies that equip nurses with the knowledge and skills required to safely manage complex medications.

P5 emphasized the importance of providing structured mental health support for healthcare workers after stressful incidents:

"I hope there's something available for the staff's mental health. Someone should check on them after the incident and ask how they're coping emotionally. I think nurses should be given space and time to reflect and recover. They should also be assessed whether they're already ready to return to work or to handle high-alert medications again. Experiences like this can be traumatic. They should provide a place where we can think and reflect."

This narrative illustrates that the participant viewed emotional recovery as an essential component of patient safety rather than merely a personal concern. The experience of administering high-alert medications after the incident was accompanied by persistent fear and psychological distress, leading the participant to recognize the need for formal mental health support before returning to full clinical responsibilities. Rather than advocating prolonged removal from practice, the participant emphasized individualized assessment, protected time for recovery, and access to psychological support to ensure that nurses are emotionally prepared to safely resume patient care.

P2 also noted that referrals for psychological support appeared to be uncommon within their organization:

"From what I've observed about our culture regarding medication errors - whether they're high-alert medications or not - there really isn't any peer-to-peer support. It's always the incident report first. We submit an incident report, or the manager talks to us, so the line of communication is mainly between me and my manager. There was a referral to the employee clinic, but honestly, I've only heard of that happening once. It involved a chemotherapy incident. That's the only case I know where psychological assistance was actually offered."

This narrative illustrates that the participant perceived the organization's response to medication errors as being predominantly administrative rather than psychosocial. Although mechanisms such as incident reporting and managerial discussions were in place, formal psychological support was viewed as the exception rather than a routine component of post-incident care. The participant's observation that psychological assistance had been offered only in an exceptional case highlights the need to integrate structured mental health services, peer support, and standardized referral pathways into medication error management so that all healthcare workers

experiencing second victim distress have equitable access to emotional support and recovery resources.

Collectively, these themes depict the dynamic process in which nurses experience profound emotional and professional challenges while gradually developing resilience and advocating for system-level improvements to enhance both patient safety and healthcare worker well-being.

DISCUSSION

This mixed-methods explanatory sequential study investigated the second victim experiences of Filipino nurses following medication errors, integrating quantitative structural data with qualitative phenomenological narratives. The findings reveal a complex, multi-layered interplay between early-career demographic vulnerabilities, environmental risk factors, and a profound, multidimensional aftermath characterized by a deep threat to professional identity. This reality is captured across six emergent themes: (1) Emotional Turbulence and Adjustment; (2) Threat to Professional Image and Confidence; (3) Learning Through Error and Heightened Vigilance; (4) Support, Stigma, and Organizational Response; (5) Coping and Resilience; and (6) Systemic Contributors and Calls for Change.

The quantitative profile establishes a critical structural trend: the surveyed nursing workforce is predominantly young, female, and concentrated in frontline bedside roles within high-volume Medical-Surgical units. Crucially, 147 out of the 200 surveyed nurses (73.5%) possessed less than three years of clinical experience.

This demographic concentration underscores a distinct systemic vulnerability. Early-career or novice nurses are tasked with complex medication administration duties before their clinical confidence and cognitive shortcuts (*heuristics*) are fully developed. This finding strongly aligns with contemporary international literature, which consistently demonstrates a direct relationship between novice nursing status, higher susceptibility to medication errors, and a subsequent vulnerability to the second victim phenomenon (Bolandianbafghi et al., 2017; Fathizadeh et al., 2024).

Furthermore, because early-career clinicians have not yet established a long-term track record of professional success, Early-career nurses may have fewer accumulated clinical experiences and may therefore benefit from additional medication-safety education, mentorship, and post-incident support.

Among the surveyed sample, 21 nurses reported direct involvement in a High-Alert Medication (HAM) error within the past three years. Because HAMs carry an inherently high risk of devastating adverse outcomes (Aradhya et al., 2023; Manias et al., 2021), the psychological stakes surrounding these incidents are high. In this study, "wrong dose" emerged as the most frequent error type.

A critical finding of this research is the contrast between patient outcomes and nurses' psychological distress. Most incidents were classified as NCC MERP Categories C or D, indicating that the errors reached the patients but did not result in patient harm. Nevertheless, the qualitative narratives demonstrated that nurses experienced substantial psychological and physical distress even when patient harm was absent or limited. These findings suggest that second-victim-related distress may arise from the recognition that an error occurred and from its perceived implications for patient safety and professional identity, rather than solely from the severity of the patient outcome. This interpretation is consistent with Mahat et al. (2022, 2025), who reported substantial emotional consequences among nurses following medication errors.

Rather than pointing to individual negligence, the primary drivers of these errors were overwhelmingly environmental and structural. Participants identified a familiar cluster of systemic failures: (1) High patient workloads; (2) Continuous environmental distractions and interruptions; (3) Fragmented interprofessional communication; and (4) Acute clinical fatigue.

These findings mirror the extensive international literature that identifies chronic nursing shortages, workplace interruptions, and communication breakdowns as the primary causes of medication errors (Coelho et al., 2024; Schroers et al., 2020). When analyzed, these factors create an environment where safe medication administration becomes structurally difficult. This reality contradicts the traditional, punitive administrative mindset that isolates the error to the final person touching the patient, shifting the focus instead toward systemic vulnerabilities (Manias et al., 2021).

The qualitative analysis of the participants' interview narratives illustrated substantial psychological, physical, and professional consequences associated with these systemic conditions. The second-victim phenomenon emerged as a multidimensional experience affecting nurses' emotional well-being, physical health, professional confidence, and clinical practice (Vanhaecht et al., 2022; Zimonjić et al., 2024).

Professionally, this trauma directly undermines a nurse's clinical self-efficacy. Participants reported a profound loss of confidence, pervasive self-doubt, and an ongoing fear of engaging in complex procedures. This psychological paralysis directly threatens the quality of patient care and workforce stability.

Participants described a moment of rupture in how they viewed themselves as safe, competent caregivers, with the error becoming a defining event that reshaped their daily practice (Ozeke et al., 2019). This experiential shift was not merely thematic but phenomenological—participants relived the event through intrusive thoughts, heightened sensitivity to medication administration, and an enduring emotional heaviness that followed them beyond the clinical setting and into their personal lives (Burlison et al.,

2017; Kappes et al., 2021; Ozeke et al., 2019). Such narratives illustrate how the second victim phenomenon is experienced as a sustained alteration in emotional equilibrium, professional confidence, and meaning attached to nursing work, rather than a single isolated response to error (Kappes et al., 2021; Li et al., 2023; Ozeke et al., 2019).

These experiences underscore the urgent need for healthcare institutions to institutionalize robust support systems, as many healthcare professionals often struggle to find adequate assistance within their organizations (Mira et al., 2015; Seys, Scott, Wu, Gerven, et al., 2013). Specifically, the implementation of psychological first aid and structured emotional debriefing is critical following medication errors (Evans et al., 2023; Lyman, 2021; Marr et al., 2021; Schiess et al., 2018). Nurse leaders must be adequately trained to identify acute stress reactions and provide immediate, empathetic support to mitigate the risk of long-term trauma, burnout, or avoidance behaviors (Busch et al., 2021; Petryszyn et al., 2023). Establishing clear post-incident protocols, such as providing quiet reflection time, facilitating private debriefing sessions, and ensuring early referral for psychological counseling, can significantly assist staff in processing emotions safely and maintaining their professional efficacy (Clark et al., 2018; Petryszyn et al., 2023).

Shattered professional confidence can cause nurses to view themselves as fundamentally unsuited for the profession, converting acute post-error stress into long-term turnover intentions and absenteeism (Li et al., 2023; Seys, Scott, Wu, Gerven, et al., 2013). Turnover intention was reported by 48% of the affected nurses, while absenteeism related to distress was reported by 38%. Although these findings suggest potential workforce consequences, no direct or inferential relationship with nursing attrition was tested (Neves et al., 2025).

A key finding of this study is the critical lack of institutional support. Participants experienced a pervasive sense of isolation, reporting that immediate supervisors often adopted a punitive, blame-oriented approach, while the larger organization failed to provide formal resources or acknowledge their distress. This finding confirms a global pattern of institutional inadequacy, where organizations prioritize bureaucratic documentation and legal risk mitigation over the psychological recovery of their staff (Burlison et al., 2017; Stone, 2019). In the absence of a formal "Just Culture," this lack of support creates defensive silence, deepens peer stigma, and drives turnover intentions (Vogus et al., 2020).

The significant impact on nurses' confidence following an error highlights the critical need for a "just culture" within healthcare organizations (Logroño et al., 2023; McClung & Gaberson, 2024). Nurse managers must cultivate an environment that fosters psychological safety, encouraging open discussion of mistakes and viewing errors as opportunities for organizational learning rather than personal failure (Paradiso, 2022). To gradually rebuild professional confidence and self-worth, organizations should

implement tailored support initiatives such as mentorship programs, peer support, and skill validation activities (Leddie et al., 2021; Stone, 2019; Tamburri, 2017). Furthermore, integrating resilience training and self-compassion interventions into staff development can equip nurses with coping mechanisms to navigate adverse events and protect their professional identity (Blaney et al., 2024; Rushforth et al., 2023; Sawyer et al., 2023).

However, despite this institutional silence, the qualitative narratives also revealed a striking capacity for personal resilience. Through independent reflection, personal faith, and informal peer support, the interviewed nurses ultimately reframed their trauma. They converted their lingering anxiety into a heightened state of clinical vigilance, resulting in increased attentiveness and a deeper commitment to patient safety.

Organizations should recognize and actively celebrate this transformation from error to growth, positioning nurses not as culprits but as essential learners contributing to safer systems (Coelho et al., 2024; Logroño et al., 2023; McClung & Gaberson, 2024). Cultivating a “just culture” is paramount, where error reporting is encouraged, feedback systems are robust, and mistakes are viewed as opportunities for continuous improvement rather than individual blame (Logroño et al., 2023; Lurvey et al., 2021; Mutair et al., 2021). This approach fosters a sense of ownership and commitment to safety among frontline workers (Logroño et al., 2023), ensuring that experiences of error contribute to a robust culture of safety and improved quality of care (Bashir et al., 2024; Coelho et al., 2024; Collado-González et al., 2024).

Their adaptive learning behavior underscores the nurses’ intrinsic motivation to ensure patient safety and regain trust in their professional competence. Rather than succumbing entirely to the guilt and self-reproach, they actively redirected their experience into a renewed commitment to careful and mindful practice, recognizing the value of mistakes for personal and professional development (Guo et al., 2024; Rosli & Zolkefli, 2023). This process of learning from errors is crucial for improving patient safety and minimizing future adverse events (Silvestre & Spector, 2023; Yilmaz & Sönmez, 2024).

The emergence of the nurses’ resilience was not immediate but rather developed through self-reflection, the reassurance received from peers, and small affirmations of regained trust and competence (Baskin & Bartlett, 2021; Guraya et al., 2025). The perseverance demonstrated by participants reflects a deeper professional ethic—a profound drive to continue providing care despite personal emotional pain and the psychological toll of an error (Blaney et al., 2024; Pappa et al., 2023). This adaptation process is crucial for maintaining well-being and professional identity after experiencing adverse events, often involving emotional regulation and adaptive thinking patterns (Pank et al., 2025). Developing moral resilience, by confronting distressful situations with courage and confidence

rooted in strong values, also plays a key role (Riedel et al., 2021).

Organizations can significantly reinforce this natural resilience by offering structured recovery pathways and creating a safe, open, nonpunitive, and supportive work environment (Busch et al., 2021; Pačutová et al., 2023). Designating dedicated reflection spaces, providing access to mindfulness or faith-based sessions, and ensuring schedule flexibility after a critical incident can facilitate healing and prevent long-term negative impacts on mental health (Joseph & Jose, 2024; Riedel et al., 2021). Leadership support and peer recognition of recovery milestones are vital for helping nurses re-establish confidence and fully re-engage with patient care (Stone, 2019).

The findings reinforce the critical principle that medication errors are rarely attributable solely to individual negligence; rather, they are often the product of complex interactions within fallible systems (Coelho et al., 2024; Zyoud & Abdullah, 2016). Hospital administrators must prioritize strengthening systems-based safeguards, including clear and standardized handover protocols, validated checklists, and continuous, specialized training for high-alert medication administration (Alrabadi et al., 2021; Coelho et al., 2024; Hada et al., 2021). Implementing structured handover protocols has been shown to reduce medication errors and improve patient outcomes (Hada et al., 2021; McCarthy et al., 2025).

Furthermore, robust mental health screening and comprehensive support must be fully integrated into occupational health programs for healthcare professionals (Andérson et al., 2020; Zaçe et al., 2021). By simultaneously addressing systemic vulnerabilities and fostering psychological well-being, healthcare organizations can cultivate a comprehensive culture of both safety and compassion (Busch et al., 2021; Schröder et al., 2022). This approach involves creating environments where errors are reported, analyzed, and learned from without punitive measures, thereby encouraging transparency and continuous improvement (Logroño et al., 2023; McClung & Gaberson, 2024; Robichaux & Vittone, 2023).

The findings of this study deepen current understanding of the second victim phenomenon by demonstrating how Filipino bedside nurses experience medication errors not merely as isolated clinical incidents but as deeply personal and professional crises. While previous international studies have documented emotional distress among second victims, this study contributes new evidence from the Philippine context, where workforce shortages, heavy patient loads, hierarchical organizational structures, and limited formal support systems shape nurses’ recovery experiences. The findings reveal that the psychological impact of medication errors persists regardless of patient outcome, highlighting that nurses may continue to suffer significant emotional consequences even when no permanent harm occurs.

The essence of the second victim phenomenon centers on the human vulnerability behind professional accountability. Medication errors evoked profound fear, guilt, and self-doubt but also catalyzed growth, vigilance, and advocacy for better systems. Without institutional empathy, these nurses endured recovery largely on their own - yet their stories reveal the potential for transformation when personal reflection is met with organizational support.

The essence of their experiences thus reflects a dual trajectory: pain and growth. Nurses as second victims experience deep emotional injury but also carry within them the capacity for resilience and renewed commitment for safer and more mindful care.

Implications for Practice and Future Research

The findings highlight the need for healthcare organizations to establish structured support systems for nurses affected by medication errors. Hospitals should promote a just culture that encourages non-punitive error reporting, provides timely peer and psychological support, and addresses organizational factors such as excessive workload, fatigue, and communication gaps that could contribute to medication errors. Strengthening education, mentorship, and leadership support may also enhance nurses' resilience and promote a safer patient care environment.

Future research should include larger, multicenter studies involving diverse healthcare settings to improve the generalizability of the findings. Longitudinal research is also recommended to examine the long-term effects of second victim experiences and to evaluate the effectiveness of organizational support programs and just culture interventions in improving nurse well-being and patient safety.

Limitations

This study has several limitations that should be considered when interpreting the findings. First, the cross-sectional design and reliance on retrospective self-report data may have introduced recall and social desirability biases, potentially affecting the accuracy of reported medication errors and second victim experiences. Second, the use of purposive sampling and the relatively small number of eligible participants ($n = 21$) limited statistical analyses and may have introduced selection bias. Third, the study was conducted in a single tertiary hospital, which may limit the generalizability of the findings to other healthcare settings with different organizational cultures, staffing patterns, and patient populations. Finally, the study focused exclusively on intravenous high-alert medication errors and did not examine second victim experiences associated with other types of adverse clinical events.

CONCLUSION

This study found that Filipino nurses who experienced intravenous high-alert medication errors reported substantial psychological, physical, and professional consequences consistent with the second victim phenomenon. The findings highlight that second victim experiences may occur even when medication errors result in little or no patient harm, underscoring the need to recognize the emotional impact of adverse events on healthcare professionals. By integrating quantitative and qualitative findings, this study provides a context-specific examination of the second victim phenomenon among Filipino nurses and contributes local evidence to the growing body of patient safety research. These findings underscore the importance of fostering supportive organizational environments that promote clinician well-being while strengthening patient safety.

Author Contributions

The author was responsible for all aspects of the study, including conceptualization, methodology development, data collection, curation, formal analysis, and the drafting of the manuscript.

Data Availability Statement

The datasets generated and/or analyzed during the study are not publicly available due to ethical restrictions and participant confidentiality.

Conflict of Interest

The author is employed as a nurse manager at the study site. To minimize potential conflicts of interest, appropriate safeguards were implemented throughout the study, including voluntary participation, exclusion of direct subordinates from participation, and anonymized data collection and analysis. Apart from the employment relationship disclosed above, the author declares no other conflicts of interest.

Acknowledgments

The author would like to express sincere gratitude to his adviser and mentor, Wireen Leila T. Dator, BSN, RN, MSN, DNS, for her invaluable guidance, mentorship, and support throughout this study.

Editorial Note: Wireen Leila T. Dator serves as a member of the International Editorial Advisory Board of the *Celebes Nursing Journal*. To ensure editorial independence and transparency, she had no involvement in the editorial assessment, peer-review process, editorial decision-making, or the final publication decision for this manuscript.

Funding

This research received no external funding

Declaration of Use of AI in Scientific Writing

Grammarly was used exclusively to assist with grammar, spelling, and language refinement. The author critically reviewed and edited all suggested revisions and took full responsibility for the content, interpretation, and conclusions presented in the manuscript.

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