Patient Safety Incidents and Prevalence of the Second Victim among Health Care Providers in Maternity and Children Hospital

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Abstract

Background: The prevalence of second victimisation among healthcare professionals after a patient safety event is estimated to range between 14% to 43%, even though second victim support has received limited attention. The second-victim phenomenon manifests through various signs and symptoms, which can be physical, psychological, emotional, or behavioural. **Aim of the study:** This study investigates adverse events and the prevalence of second victims among healthcare providers in Maternity and Children Hospital. It also determines the most common symptoms following second victim phenomena and investigates the support available to the individuals impacted by the event. **Methods:** A descriptive exploratory study was conducted among 188 nurses and physicians at Minia University Maternity and Children Hospital. This study employed a non-probability convenient sample consisting of physicians and nurses with more than one year of full-time experience. To gather data, an anonymous cross-sectional survey using a German standardized questionnaire "SeViD-I" was conducted among healthcare providers. **Results:** Nurses represented most of the participants, and doctors represented 27.7%. Over half (57.4%) of nurses experienced the second victim phenomenon, and about two-thirds (65.4%) of physicians did. The study found that more than two-thirds of nurses expressed anger towards themselves and guilty feelings and wished to work through the incident to better understand it. In the present study, most doctors (79.5%) intend to provide valuable perspectives to avoid alike events in the future. There was a positive correlation between participants' department of work and the prevalence of the second victim. **Conclusion:** Healthcare professionals in high-pressure environments, such as those in obstetrics and paediatrics areas, are vulnerable to becoming second victims because of the acuity and complexity of patient cases. Over half of the nurses and about two-thirds of the physicians experienced the second victim phenomenon. Over two-thirds of nurses expressed anger towards themselves and wished to go through the incident for better understanding. After the incident most doctors aimed to contribute insights to prevent similar events in the future.

Keywords: Adverse Events, Egypt, Healthcare Providers, Minia University Hospital, Second Victim.

Introduction

Unfortunately, the complexity of healthcare environments makes medical errors inevitable **(Bergman, 2003).** Healthcare providers are constantly confronting patient harm and loss as part of their job duties. Nonetheless, unexpected incidents or those caused by medical mistakes pose a unique and acute risk to healthcare providers. It is not uncommon for physicians to have feelings of being upset, guilt-ridden, self-critical, and depressed when medical errors occur **(Waterman, 2007).** A healthcare provider may experience a second victim trauma after a patient safety event as a result of several factors, including the severity and outcome of the event, as well as personal factors **(Brandom, 2011; Quillivan, 2016).**

In acknowledging the pain and isolation often experienced by providers as a result of patient safety events, **Wu (2000)** described them as "second victims" (after patients). **(Wu, 2000).** It has been proposed that a second victim of patient safety events is defined as a health care provider who has been a victim of an adverse patient event, medical error, or injury resulting from patient care and is traumatized by the incident." **(Scott, 2009).**

In several health areas, survey data indicates that 14% -30% of medical professionals were engaged in a patient safety event within the year prior **(Scott, 2010).** Other studies mentioned a

higher prevalence of the second victim; in a study by **Says (2013,)** found that SV presents in 10.4% up to 43.3% of cases following an adverse event **(Seys, 2013).** Another study reported that, at minimum, half of health professionals are burdened with the effect of being SV **(Waterman, 2007).**

There are a variety of symptoms and implications for the well-being of second victims. Symptoms consist of sleep difficulties, burnout, diminished job satisfaction, guilt, anger, and shame, as well as fears of punishment, job loss, and legal action (Mousa, 2023; Harrison, 2015). Medical professionals may also find it challenging to get mental health support after errors because they do not commonly turn to mental health facilities for help **(Center, 2003).**

It is thought that optimistic perceptions of a hospital's patient care attention culture may reduce second victim distress by promoting a culture that fosters effective coping skills with the involvement of a hospital in a patient safety incident **(Quillivan, 2016).** In contrast, patient safety cultures that encourage blame, criticism, silence, or stigmatization of patient safety incidents may exacerbate providers' emotional, physical, and professional distress **(Manser, 2011).** The Department of Obstetrics and Gynaecology is one of the clinical specialities most prone to stressful and traumatic events. The effectiveness of improving nurse knowledge and focusing on patient care is monitored in many studies in order to reduce adverse events **(Mousa, 2013; Sedile, 2023).**

Second victim support has received little attention in hospitals **(Lane et al., 2018).** In several healthcare settings, adverse events are examined, and blameworthiness is allocated short of taking into account the factors that triggered the adverse event **(Han et al., 2017).** By managing adverse events this way, second victims may be further burdened **(Wu et al., 2020).** It is important for healthcare institutions to ensure that second victims are adequately supported **(Lane et al. 2018).** In order to cope with the trauma of adverse events, second victims should receive prompt and accessible support **(Mjadu & Jarvis, 2018; Wu et al., 2020).** Staff wellness, retention, and preparedness to provide quality care are promoted by timely support **(Kable et al., 2018).**

Significant of the Study

The significance of the study lies in its potential to improve understanding of the second victim phenomenon among healthcare providers, leading to the development of targeted support strategies. The second victim phenomenon manifests through various signs and symptoms, which can be physical, psychological, emotional, or behavioural. In hospitals in low- and middle-income countries, 134 million adverse events are reported each year, implying that South Africa is burdened with adverse events **(Nydoo et al. 2020; WHO, 2021).** There has been little research on the struggles of health professions as second victims. Researching and recognizing the experiences and support needs of healthcare providers could contribute a guide for developing policies and structures to provide assistance to second victims **(Chan et al., 2018).**

Many individual and organizational strategies have been formulated to address this issue **(Kappes, 2021).** This can enhance patient safety, reduce the emotional burden on healthcare workers, and improve the quality of care in maternity and children's hospitals.

Aim and Objectives

Investigate Patient Safety Incidents and the Prevalence of the Second Victim among Health Care Providers in Maternity and Children Hospital through the following objectives.

1. Explore the prevalence of second victims among Minia Maternal and Children Hospital nurses and physicians.
2. Investigate types of Patient Safety Incidents in Minia Maternity and Children Hospital
3. Identify the most common symptoms following the second victim phenomena.
4. Investigate Support Strategies regarding the second victim phenomenon.

Research Questions

1. How common is second victimization among nurses and physicians at Minia Maternity and Children University Hospital?
2. What types of patient safety incidents occur in Minia Maternity and Children University Hospital?
3. What are the most common symptoms experienced by healthcare providers following the second victim phenomenon?

4. What support strategies are in place to address the second victim phenomenon among healthcare providers?

Methods

Study Design

This study used a descriptive exploratory design and was directed between 4 September 2024 and the end of November 2024.

Setting

This study, was conducted at Maternity and Children University Hospital, Minia, Egypt.

Ethical Consideration

The study was permitted by the Research and Ethical Committee of Obstetrics and Gynaecology Department, Minia University Hospital Review Board. To secure participants' consent, they were briefed on the study's objectives, goals, advantages, and effects on healthcare professionals.

Participants and sampling

Nurses and physicians at the hospital who participated in direct patient care ($N = 400$) were invited via direct asking to take part in the study.

A convenience sampling method was used to make the selection of the participants. The study included physicians and nurses with more than one year of full-time experience who consented to participate. Based on a population size of 400 and a 95% confidence level, a lowest sample size of 197 healthcare providers was estimated using OpenEpi, V.3.01 (www.openepi.com), a software program. There were 400 questionnaires distributed, 188 of which were returned, resulting in a 47% response rate.

Data Collection Methods

Physicians and nurses who were clinically active in the hospital were surveyed. Participants received four reminders during the study period: two direct reminders during the first month and two during the second month. Participants received a brief description of the survey, an explanation that there were no risks or benefits associated with participation, and a paper questionnaire to be completed. The completed questionnaire was collected without any identification information. Informed consent was obtained from all HCWs who agreed to participate in the research study.

Designing and administering questionnaires

This study collected data using the German standardized questionnaire "SeViD-I survey." The questionnaire comprised 46 items across three domains: general experience, symptoms, and support strategies **(Strametz, 2021).** ***In part one***, 13 questions are asked about the general demographics and experience of the second victim. ***In the second part***, based on the responses to the 20 items of this domain, a sum score was calculated to estimate the participants' symptom load. The answers "strongly pronounced" were counted as 1 and "weakly pronounced" as 0.5 ("not at all" and "don't know" as 0). Based on the median (8.5), a low and high symptom load group was established. ***The third part*** consists of 13 questions about the support strategies domain, and a 4-point ordinal scale was used (very helpful, rather helpful, rather not helpful, not helpful).

A questionnaire was translated into Arabic and then retranslated into English for verification. The researcher conducted a pilot test with eight healthcare providers, requiring minimal revisions to the questionnaire. The clarity of the questions ensured by conducting a pilot study. Participants voluntarily read through the information material and completed the anonymous questionnaires.

Results

Table 1 illustrates the demographic data of the participants. A total of 188 participants were included in this study, consisting of 95 (50.5%) females and 93 (49.5%) males. About three quarters 139 (73.9%) of participants were aged less than thirty years old, and about one quarter 49 (26.10%) of them were older than 30 years old with mean = 28.10±4.055. About two-thirds 122 (64.90%) of the participants worked in the paediatric unit, also about one third 66 (35.40%) of them were worked in obstetric units. In relation to work experience, about half 101 (53.70%) of the participants had 5:10 years of experience, also about one-third 75 (30.30%) of them from 1:4 years of experience, and only 30(16.00%) of them had more than 10 years of experience with mean = 6.20±1.136.

Figure 1 clarifies the distribution of participants' occupations; less than three-

quarters 136 (72.30%) of participants were nurses, and more than one-quarter of them 52(27.70%) of them were.

Figure 2 shows the distribution of participants' knowledge about the second victim, less than half 66 (48.50%) of nurses had knowledge about the second victim, and more than half 32 (61.50%) of doctors had knowledge about the second victim, and more than half 98(52.10%) of participants had knowledge about the second victim.

Figure 7 displays the distribution of participants' second victim prevalence; more than half 78 (57.40%) of nurses experienced the second victim phenomenon, also about two-thirds 34 (65.40%) of doctors were experiences of the second victim phenomenon. More than half 112(59.50%) of total participants were experiences of the second victim phenomenon.

A total of 112 participants in this research experienced the second victim phenomenon. The distribution of general experiences of second victim phenomena is shown in Table1. Less than half, 49 (43.70%), of participants had experienced it more than once in a year, and 40 (35.70%) of them experienced it twice. According to the type of incident, it is evident that more than half 52 (46.5%) of them faced medication administration problems. Almost all participants (98.2%) looked for help after the event. In relation to seeking support after the events, most participants (35.5%) asked their colleagues for help. More than half 63 (56.2%) took more than a month to fully recover after key incidents.

Table 3 explains the distribution of symptoms regarding the second victim phenomenon. More than two-thirds 54 (69.2%) of nurses had the symptoms of anger against themselves and the desire to work through the incident for deeper understanding. Also, about two-thirds 50 (64.1%) of nurses had symptom of fear from losing their job/marks, and less than two-thirds 49 (62.8%) of them had symptoms of guilt feeling**.** Moreover, all (100%) of doctors had symptoms of fear of losing their job, and 32(94.1%) of them had symptoms of guilt feeling, and 31(91.2%) of them had symptoms of anger against themselves as well a desire to work through the incident for deeper understanding. Furthermore, 85 (69.2%) of all participants had symptoms of anger against themselves as well as a desire to work through the incident for deeper understanding, also 84 (75.0%) of them had symptoms of fear of losing the job/marks, and 81 (72.4%) of them had symptoms of guilt feeling.

Table 4 discusses the distribution of support strategies regarding the second victim phenomenon. More than half 45 (57.7%) of nurses had a strategy of formal peer-to-peer support. Also, 43 (55.1%) of them had a strategy of help to actively participate to work through this incident, and half 49 (50.0%) of them had strategies of supportive guidance for continuing clinical duties as well as opportunity to seek for legal advice after an incident**.** Moreover 27 (79.5%) of doctors had strategy of safe opportunity to contribute insights to prevent similar events in future, and 26(76.5%) of them had strategy of help to actively participate to work through this incident, also 25(73.5%) of them had strategy clear guidance about the roles to be expected after the incident. Furthermore 69(61.6%) of all participants had strategy of help to actively participate to work through this incident g, also 67 (59.8%) of them had strategy of formal peer-to-peer support, and 60 (53.6%) of them had strategy of clear guidance about the roles to be expected after the incident**.**

Table 5 shows the correlations between participants' socio-demographic data and the prevalence of second victim; there was a positive correlation between participants' department of work and the prevalence of second victim.

Table (1): Frequency distribution of participants' socio-demographic data (no.=188)

Socio-demographic data	Nurses (no.=136)		Doctors (no.=52)	
	no.	%	no.	%
Age				
< 30	99	72.8	40	76.9
More than 30	37	27.2	12	23.1
Mean ± SD	**28.20±4.136**		**27.85±3.862**	
Sex				
Male	61	44.9	32	61.5
Female	75	55.1	20	38.5
Department/ Specialty				
Obstetric	39	28.7	27	51.9
Paediatric	97	71.3	25	48.1
Work experience in total				
1 to 2 yrs.	34	25.0	23	44.2
2 to 5 yrs.	76	55.9	25	48.1
5 to 10 yrs.	26	19.1	4	7.7
Mean ± SD	**5.20±1.136**		**3.85±2.262**	

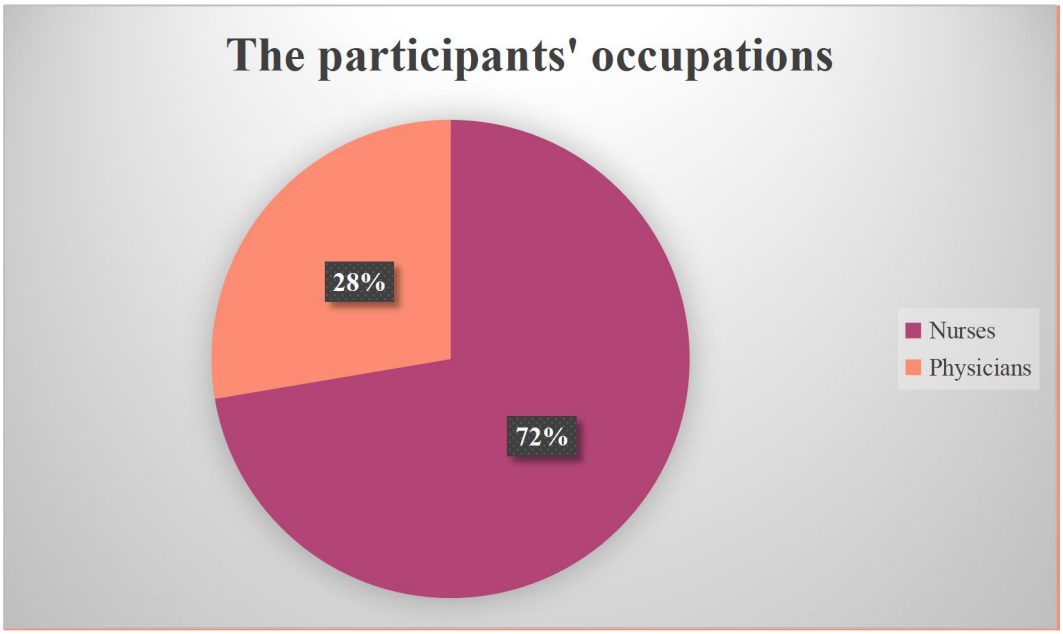

Figure (1): Participants' occupation (no.=188)

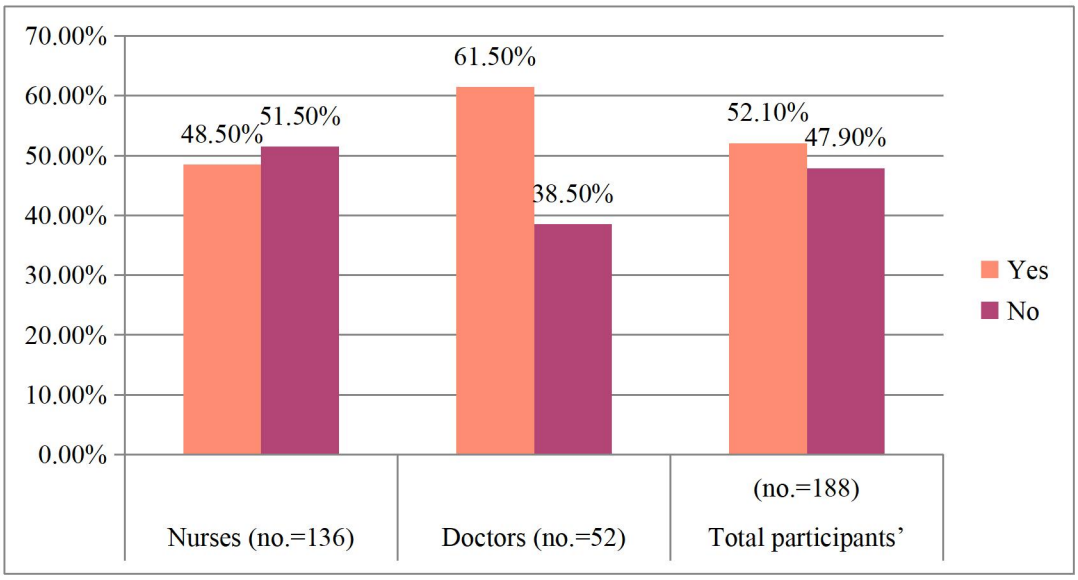

Figure (2): Participants' knowledge about second victim (no.=188)

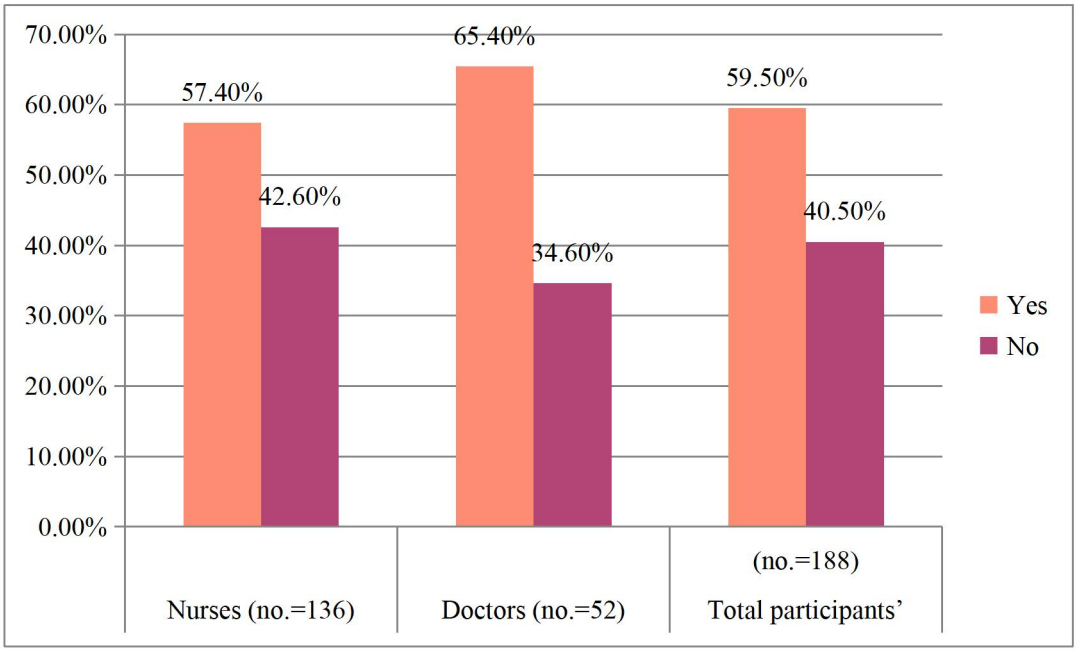

Figure (3): Participants' prevalence of second victim (no.=188)

Table (2): Participants' general experience with second victim phenomenon (no.=112).

	Nurses (no.=78)		Doctors (no.=34)		Total (no=112)	
	no.	**%**	**no.**	**%**	**no.**	**%**
The prevalence of second victim experiences over time						
Less than month	29	37.2	6	17.6	35	31.2
More than month	32	41	17	50.0	**49**	**43.7**
I don't know	17	2.8	11	32.4	28	25.1
12-month prevalence of second victim experience						
One incident	32	41.0	6	17.6	38	33.9
Two incidents	28	35.9	12	35.3	**40**	**35.7**
More than 2	18	23.1	16	47.1	34	30.4
Type of key incident						
Death	8	10.3	13	38.2	21	18.8
Fall	22	28.2	7	20.6	29	25.8
Medication administration problem	44	56.4	8	23.6	**52**	**46.5**
Other	4	5.1	6	17.6	10	8.9
Seek for support after key incident						
Yes	77	98.7	33	97.1	**110**	**98.2**
No	1	1.3	1	2.9	2	1.8
Types of groups supporting after key incident	**Nurses (no.=77)**		**Doctors (no.=33)**		**Total (no=110)**	
Friends	15	19.5	6	18.2	21	19.1
Colleagues	35	45.5	4	12.1	**39**	**35.5**
Head of department or authorized person	19	24.6	18	54.5	37	33.6
Psychiatrist	8	10.4	5	15.2	13	11.8
Self-perceived time to full recovery after key incident	**Nurses (no.=78)**		**Doctors (no.=34)**		**Total (no=112)**	
Less than month	26	33.4	5	14.7	31	27.6
More than month	38	48.7	25	73.5	**63**	**56.2**
Not yet	14	17.9	4	11.8	18	16.2

Table (3): Participants' Symptoms regard second victim phenomenon (no.=112)

Second victim symptoms	Nurses (no.=78)						Doctors (no.=34)						Total (no.=112)					
	Strongly pronounced		Weakly pronounced		Not pronounced		Strongly pronounced		Weakly pronounced		Not pronounced		Strongly pronounced		Weakly pronounced		Not pronounced	
	no.	%	no.	%	no.	%	no.	%	no.	%	no.	%	no.	%	no.	%	no.	%
1. Fear of social exclusion from colleagues	38	48.7	27	34.6	13	16.7	10	29.4	19	55.9	5	14.7	48	42.8	46	41.0	18	16.2
2. Fear of losing the job	50	**64.1**	20	25.6	8	10.3	34	**100**	0	0	0	0	84	**75.0**	20	17.8	8	7.2
3. Lethargy	26	33.3	28	35.9	24	30.8	10	29.4	5	14.7	19	55.9	36	32.1	33	29.5	43	38.4
4. Depressed mood	20	25.6	32	41.0	26	33.4	12	35.3	12	35.3	10	29.4	32	28.5	44	39.3	36	32.2
5. Concentration problems	11	14.1	48	61.5	19	24.4	10	29.5	18	52.9	6	17.6	21	18.7	66	58.9	25	22.4
6. Reactivation of situation outside job site	15	19.2	45	57.7	18	23.1	10	29.4	17	50.0	7	20.6	25	22.3	62	55.3	25	22.4
7. Reactivation of situation at job site	39	50.0	28	35.9	11	14.1	29	85.3	5	14.7	0	0	68	60.7	33	29.5	11	9.8
8. Aggressive, risky behaviour	17	21.8	24	30.8	37	47.4	7	20.6	0	0	27	79.4	24	21.4	24	21.4	64	57.2
9. Defensive, overprotective behaviour	8	10.3	29	37.1	41	52.6	7	20.6	1	2.9	26	76.5	15	13.4	30	26.8	67	59.8
10. Psychosomatic reactions (headaches, back pain)	26	33.3	15	19.3	37	47.4	4	11.8	7	20.6	23	67.6	30	26.7	22	19.7	60	53.6
11. Difficulties to sleep or excessive need to sleep	22	28.2	30	38.5	26	33.3	4	11.8	23	67.6	7	20.6	26	23.2	53	47.3	33	29.5
12. Use of substances (alcohol/ drugs) due to this event	9	11.5	24	30.8	45	57.7	6	17.6	0	0	28	82.4	15	13.3	24	21.5	73	65.2
13. Sense of shame	19	24.4	47	60.3	12	15.3	10	29.4	17	50.0	7	20.6	29	25.8	64	57.3	19	16.9
14. Feelings of guilt	49	**62.8**	22	28.2	7	9.0	32	**94.1**	2	5.9	0	0	81	**72.4**	24	21.4	7	6.2
15. Lower self-confidence	22	28.2	43	55.1	13	16.7	7	20.6	24	70.6	3	8.8	29	25.8	67	59.8	16	14.4
16. Social isolation	20	25.6	34	43.6	24	30.8	6	17.6	17	50.0	11	32.4	26	23.2	51	45.5	35	31.3
17. Anger against others	22	28.2	19	24.4	37	47.4	7	20.6	4	11.8	23	67.6	29	25.8	23	20.6	60	53.6
18. Anger against oneself	54	**69.2**	16	20.5	8	10.3	31	**91.2**	3	8.8	0	0	85	**75.8**	19	16.9	8	7.3
19. Desire to get support from others	47	60.3	22	28.2	9	11.5	16	47.1	18	52.9	0	0	63	56.2	40	35.7	9	8.1
20. Desire to work through the incident for deeper understanding	54	**69.2**	12	15.4	12	15.4	31	**91.2**	0	0	3	8.8	85	**75.8**	12	10.8	15	13.4

Table (4): Participants' Support Strategies regard second victim phenomenon (no.=112).

Second victim support strategies	Nurses (no.=78)						Doctors (no.=34)						Total (no.=112)					
	Very helpful		Rather helpful		Not helpful		Very helpful		Rather helpful		Not helpful		Very helpful		Rather helpful		Not helpful	
	no.	%	no.	%	no.	%	no.	%	no.	%	no.	%	no.	%	no.	%	no.	%
1. Immediate time out to recover	35	44.9	38	48.7	5	6.4	24	70.6	10	29.4	0	0	59	52.7	48	42.8	5	4.5
2. Access to counseling, including psychological/ psychiatric services	30	38.5	43	55.1	5	6.4	24	70.6	10	29.4	0	0	54	48.3	53	47.3	5	4.4
3. Possibility to discuss emotional and ethical issues	27	34.6	40	51.3	11	14.1	11	32.4	20	58.8	3	8.8	38	33.9	60	53.6	14	12.5
4. Clear information about processes (e.g., root cause analysis, incident reporting)	28	35.9	42	53.8	8	10.3	7	20.6	26	76.5	1	2.9	35	31.2	68	60.7	9	8.1
5. Formal peer-to-peer support	45	**57.7**	22	28.2	11	14.1	22	64.7	8	23.5	4	11.8	67	**59.8**	30	26.8	15	13.4
6. Informal emotional support	33	42.3	40	51.3	5	6.4	8	23.5	25	73.6	1	2.9	41	36.6	65	58.2	6	5.2
7. Prompt debriefing/crisis intervention	32	41.0	37	47.5	9	11.5	18	52.9	13	38.3	3	8.8	50	44.6	50	44.6	12	10.8
8. Supportive guidance for continuing clinical duties	39	**50.0**	29	37.2	10	12.8	16	47.1	15	44.1	3	8.8	55	49.2	44	39.2	13	11.6
9. Help to communicate with patients	28	35.9	41	52.6	9	11.5	14	41.2	17	50.0	3	8.8	42	37.6	58	51.7	12	10.7
10. Clear guidance about the roles to be expected after the incident	35	44.8	25	32.1	18	23.1	25	**73.5**	5	14.7	4	11.8	60	**53.6**	30	26.7	22	19.7
11. Help to actively participate to work through this incident	43	**55.1**	16	20.5	19	24.4	26	**76.5**	4	11.7	4	11.8	69	**61.6**	20	17.8	23	20.6
12. Safe opportunity to contribute insights to prevent similar events in future	31	39.7	30	38.5	17	21.8	27	**79.5**	6	17.6	1	2.9	58	51.7	36	32.1	18	16.2
13. Opportunity to seek for legal advice after an incident	39	**50.0**	25	32.1	14	17.9	20	58.8	14	41.2	0	0	59	52.7	39	34.8	14	12.5

Table (5): Correlations between participants' socio-demographic data and prevalence of second victim (no=112)

	Prevalence of second victim
	r (p-value)
Age	**-.012 (.869)**
Sex	**-.109 (.137)**
Department/ Specialty	**.259** (.001)**
Work experience in total	**-.052 (.479)**
Occupation	**.113 (.123)**

Discussion

Considering the second victim phenomenon as a significant issue that requires the attention and action of healthcare organizations, for the improvement of the entire healthcare system. The healthcare professionals may be involved in risky personal and professional distress, accordingly, developing a second victim experience. It is important to identify the phenomenon of the second victim, along with its associated factors, appropriate support strategies, and critical approaches to dealing with victims. This study is among the few studies conducted to examine the incidence among healthcare providers in Minia University Maternity and Children Hospital, Egypt.

This study included 188 participants, with 50.5% females and 49.5% males, with a mean age of 28.10 + 4.055. Moreover, about two-thirds of participants worked in paediatric units and about one-third in obstetric units. In addition, the study revealed that about half of the participants had experience between five and ten years, one-third had experience between one and four years, and only thirty had more than ten years of experience. Most participants were nurses, and 27.70% were doctors. A further finding showed that 48.5% of nurses and 61.5% of doctors knew about SVP.

Two-thirds (65.4%) of physicians and over half (57.3%) of nurses experienced the second victim phenomenon in the present study. The findings align with **Scott et al. (2009),** who found that nearly half of clinicians are involved in a serious adverse event at least once during their careers. According to **Nydoo et al. (2020),** SVP might have a greater impact in certain specialities, such as obstetrics, because of the high stakes and emotional nature of the jobs. The present findings may suggest that high prevalence rates exist among nurses and doctors alike in obstetrics and paediatric units.

According to the findings, 35.7% of participants experienced two incidents of the second victim phenomenon in the year, and 46.5% experienced medication administration problems as a cause of the event. Over half (56.2%) of participants took more than one month to fully recover from key incidents. In line with our results, research by **Scott et al. (2011)** shows that healthcare professionals often experience prolonged psychological distress following adverse events, with some taking months to recover. The frequency of these incidents, averaging two per year, is consistent with studies showing that healthcare workers encounter adverse events frequently, causing repeated SVPs. Compared to the present study results**, Naya et al. (2023)** found that only 20% of healthcare workers were unable to recover within a year. In this way, adverse events have a prolonged emotional impact on healthcare professionals. In accordance with the World Health Organization's **(WHO, 2024)** assessment of the global burden of medication errors (46.50%), there are numerous problems associated with medication administration. Healthcare professionals' emotional well-being can be affected by medication errors, which are a leading cause of patient harm. Due to the nature of the job in healthcare settings and the same mistakes and errors, the results may be close to each other.

The study found that more than two-thirds of nurses expressed anger towards themselves and wished to work through the incident to gain a better understanding of it. In accordance with the results of the present study, the American Nurses Association published a report that outlines several challenges nurses face, including anger resulting from patient

injuries, changing healthcare environments, and psychological harm. These findings are align with research showing that healthcare professionals often internalise blame and resolve mistakes. **Pesata and Nieves (2024)** describe self-reflective behaviour as a coping mechanism for preventing future mistakes.

The results of this study contrast with the findings of other studies indicating that while nurses often experience anger, not every nurse is motivated or able to work through incidents for a deeper understanding due to time constraints and workload **(American Psychological Association, 2017).**

It has also been found that two-thirds of nurses have symptoms of fear of losing their jobs, while less than two-thirds have symptoms of guilt feeling. These findings are consistent with research highlighting job security issues as significant stressors for nurses. **Yong (2022)** explains that the high stakes of healthcare and the potential for punitive actions contribute to this fear. Moreover, all (100%) doctors expressed fear of losing their jobs, possibly due to high-performance expectations and the competitive nature of the medical profession. Many of them expressed guilt feelings and anger against themselves, as well as a desire to work through the incident for a deeper understanding. This is consistent with a recent research article **(Misiolek-Marn et al., 2020),** which shows that physicians are often proactive and continuously learn to improve their patient care. Research indicates that physicians often experience intense guilt and self-blame once they commit a medical error, indicating that guilt feelings are more prevalent among doctors. **Klitzman (2007)** suggests that this guilt is compounded by the high expectations they face and the possible consequences of their actions.

In the study, 57.7% of nurses reported receiving peer-to-peer support. According to Crandall, et al. (2022) peer support is effective in healthcare settings. Healthcare professionals can benefit from peer support by providing emotional and practical support, reducing feelings of isolation, and promoting resilience. A systematic review by **Cooper et al. (2024)** found that peer support can improve mental health outcomes. In the present study 55.1% of nurses reported that they had strategies for actively participating in incident resolution. Recovering and maintaining a professional identity requires active participation and engagement in work. Nursing decision-making and active participation can enhance nurses' sense of control and reduce feelings of helplessness **(Amicucci et al, 2022).** In their study, **Martnez-Angulo et al.2024** concluded that active listening and shared decision-making improve nurse engagement and satisfaction.

According to the present study, half of nurses had legal advice after an incident. Having legal support can ease the stress and anxiety associated with medical malpractice claims and regulatory requirements. However, there may be some variation in the extent to which these strategies are implemented across healthcare settings. Research shows that nurses lack adequate knowledge of legal liabilities, which increases their vulnerability to legal issues **(Ruppel et al, 2023).** It may be possible to mitigate these concerns and support nurses in navigating legal complexities by providing access to legal advice **(Ibrahim et al., 2019).**

In the present study, most doctors (79.5%) intend to contribute insights to prevent similar events in the future. The results of this study support research emphasizing the importance of involving healthcare professionals in safety initiatives. A systematic review by **Zegers et al. (2016)** found that interventions involving healthcare professionals can significantly reduce adverse events. Additionally, this finding supports research emphasizing the importance of involving healthcare professionals in incident reporting and learning. Researchers have found that doctors sharing their insights and experiences enhances organizational transparency and improves patient safety. Researchers reported that incident reporting by doctors contributes significantly to organizational learning and patient safety **(Fukami et al., 2020).**

About 76.5% of doctors in the present study had strategies to help them actively participate in work after an incident. This is consistent with research indicating that active engagement in work can aid in recovery and reduce the psychological impact of adverse events. A

study conducted by **(Van Gerven et al., 2016)** found that healthcare professionals who actively engage in coping strategies and receive organizational support tend to recover better from the psychological impact of patient safety incidents. Additionally, teamwork and support from colleagues are crucial for overcoming negative emotions and maintaining professional performance **(Strid, 2021).**

Approximately 73.5% of doctors had strategies providing clear guidance about their roles after an incident. Clear role definitions and expectations are essential to reducing uncertainty and stress among healthcare professionals. Research supports the idea that clear guidance and structured support can enhance physicians' confidence and effectiveness in their roles after an incident **(McHugh et al, 2024). The American Medical Association (AMA) 2019 has** also emphasized the need for clear communication and resolution programs to address adverse events and improve patient safety.

Lastly, the study findings showed that there are correlations between participants' socio-demographic data and the prevalence of second victim, and there was positive correlation between participants' department of work and the prevalence of second victim. Research indicates that various socio-demographic factors, such as age, gender, years of experience, and department of work, can influence the prevalence and impact of the second victim phenomenon among healthcare professionals. For instance, a study by **Nydoo et al. (2020)** found that healthcare professionals in high-stress departments, such as emergency and intensive care units, are more likely to experience the second victim phenomenon due to the high frequency of critical incidents and adverse events. Also, a study by **Quillivan et al. (2016)** found that younger healthcare professionals and those with less experience were more likely to experience second victim distress.

The positive correlation between the department of work and the prevalence of the second victim phenomenon is well-documented. Healthcare professionals working in departments with higher patient acuity and complexity, such as surgery, obstetrics, and emergency medicine, are more susceptible to becoming second victims. This is due to the higher likelihood of encountering adverse events and the emotional toll associated with these high-stakes environments. For example, a literature review in the Journal of Patient Safety highlighted that departments with high patient turnover and critical care responsibilities report higher instances of second victim experiences **(Burlison, 2021).**

While the correlation between the department of work and the second victim phenomenon is widely supported, some studies suggest that individual resilience and organizational culture can mediate this relationship. For instance, healthcare professionals with strong coping mechanisms and supportive work environments may experience lower levels of distress, regardless of their department. This highlights the importance of fostering a supportive organizational culture and providing resilience training to all healthcare professionals **(White & Delacroix, 2020).**

Conclusion

The findings underscore the heightened vulnerability of healthcare professionals in high-stakes environments, such as obstetrics and paediatrics, to becoming second victims due to the complexity and acuity of patient cases. The study revealed that many nurses and physicians experienced the second victim phenomenon. Specifically, numerous nurses reported feelings of self-directed anger, guilt and expressed a desire to work through the incident to gain a better understanding. Conversely, following such incidents, many physicians focused on contributing insights to prevent similar occurrences in the future and feeling guilty. This phenomenon underscores healthcare providers' emotional and psychological condition, highlighting the need for strong support systems. Addressing these issues can improve both provider well-being and patient care outcomes.

Limitation of the study

This study is limited by its reliance on self-reported data, which may be biased. Due to social desirability or recall bias, participants may underreport or overreport their feelings of

guilt and other emotional responses. Moreover, the study's focus on a specific group of healthcare professionals might limit its generalizability to other medical fields or less stressful environments. In addition, the study does not take into account long-term psychological effects.

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