Journal of Alternative Perspectives in the Social Sciences (2018) Volume 9 No 1, 58-83

Nurse as Second Victims after Adverse Event

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Abstract:

Background: Nurses in King Saud Medical City (KSMC) being a second victim after made error. More than 50% of second victims were suffered from physical and psychological symptoms followed adverse events which lead to negative impacts on their performance, and ability to continue working. Heath care organization plays an significant role in support nurses who are difficult to coping after an event. However, little attention is paid from governmental bodies, system and structure to support the second victims after being involved in an event.

Objective: To describe nurse's experiences followed adverse events and the organizational strategies for support nurse followed adverse events.

Methodology: Descriptive study was conducted in king Saud Medical City, A convenient sample of 198 staff nurses was selected from clinical areas in KSMC. Data were collected between July, 2 and Oct, 5, 2017 using a self administered questionnaire of MITSS Staff Support Assessment Tool.

Result: 33.8% (n=67) of the participants were involved in adverse event in their career, and 64.2% (n=43) were involved with no patient harm, while 16.4% (n=11) were involved with permanent

functional loss or fetal harm/death. Also 82 % (n=55) experienced a number of physical and psychological symptoms. Whereas, Reliving the event (flashback) (74.6%, n=50), returned to work anxiety (40.2%, n=27), Difficult concentration (46.2%, n=31), grief (42%, n=28), feeling afraid (31, 9%, n=21) and expressed depression (35.8%, n=24) were the most psychological symptoms reported by them.

On the other hand, Sleep disturbances (44.7%,n=30), unable to relax (28.3, n=19), and Sweaty palms (23.8%, n=16) were the most physical symptoms. 42.3% (n=22) of them spent one to three weeks till they rid all symptoms.

Moreover, some of the participants (21.6%, n=8) received emotional support from Head Nurse, 18.9% (n=7) from Nurse Manager, 8% (n=3) from Director of Nursing and 51.4% (n=19) from others (e.g. friends, family, spouse). 59.7% (n=40, M=1.16, SD=1.72, R=1-5) of the participants were worried a lot about what their clinical peers would think about them after the events. Most of them (77.6% n=52, M=0.68, SD=1.1, R=1-5) didn't adequately supported by the organization and associated structures. While 67.1% (n=45) were disagreed or don't know that there was a designated member of the organization who did a good job guiding them through the processes that are followed after an event.

Conclusion: Adequate support can work effectively to reduce the distress, depression and grief for nurses who made error. However, negative attitude and lack of support can add to emotional burden and suboptimal patient care and an increased risk of future error

1. Introduction

Human error in healthcare institutions is widespread concern. One out of seven patients are involved in an adverse event. [14] Institute of Medicine report "To Err is Human" revealed that errors cause 44,00 to 98,00 deaths in united states annually. [6] These numbers are triggering what accompanies each of these errors are healthcare workers. [28] Moreover, Adverse event is defined as "an injury/moderate or major harm as well as death that was caused by medical/nursing management (rather than the underlying disease) due to doing something wrong (omission) or failing to do the right thing (omission) which lead to an undesirable outcome, death or significant potential such as prolonged the hospitalization, further treatment/ procedure, significant changes in medication therapy, produced a disability at the time of discharge, or death". [26]

Furthermore, three types of victims be involved in adverse event, the first victim is the patient and family, the second victim is the healthcare professional and the third victim is the institution. Generally a first victim takes total concerns to get well after being involved in adverse events. [5] However, little attention is paid to Second Victims. [11, 28] Second victims defined as health care providers who are involved with a patient-related adverse event or medical error, and have psychological and sometime physical consequences. [21,27] Scott et al., (2010) revealed that approximately 30% of healthcare workers includes Physician, Nurses and Medical students are being a second victim [20] Lander et al.(2006) Showed that 10.4% of heath care workers are being involved in adverse events in their careers. [13] However, the prevalence of nurses are being involved in adverse events was showed in the study of Van Gerven .E (2016) 7.9 %(n=363) and 28.2% (n= 71) in the study of martens, J. (2016). [16, 31]

On the other hand, In the study of Wolf et al (2000) showed 40.8% of participants reported that the error had a moderately harmful effect and 2.5% describing a severe impact on their personal live. [25] several physical and psychological symptoms are explored by second victims followed the adverse events. Second victim may feel to guilt, anger, fear, depression, helplessness, poor concentration and memory, sleep disturbance, emotional numbness, social avoidance, flashbacks, and self-blame. [2,8,12, 28] Nurse as a healthcare worker who have these symptoms that may be affected negatively their clinical performance, and ability to continue working. [2,8,12, 28]

A few second victim might suffers long term symptoms that can affect their health and functioning. [2, 8] These symptoms are included recurrent experiencing of the event, loss of self confident, avoidance, emotional numbing and concentration difficulties. [7,12, 28,] Also involvement in adverse event increase their desire to leave. [15] Scott et al,2010 revealed that 15 % of second victims were thinking to resign their job and healthcare completely due to their involvement of adverse event.[20]

Second victims need support to coping with their emotion. Moreover, adequate support can assist them effectively to reduce the distress, depression and sadness. However, negative perception and lack of supports can lead to emotional burden , poor quality of patient care and an increased risk of future adverse events. [11, 22, 27] For this regards.

This study aim to describe nurse's experiences and the organizational strategies to support them followed adverse events.

2. State of the Art

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2.1 Literature Review

Healthcare workers who being involved in adverse events likely to be psychologically changed and stressful during their career. Bringing attention of healthcare organization system required to build safer health care, and to working professionally to caring patients and families who harmed during the provision of care.[11, 22, 27]

However, few attentions have been dedicated to health care workers who involved in adverse events to help them coping with their emotions.[11, 22, 27]

The second victim is worried about the impact of the adverse event which occurred to the first victim. [7] "Feeling of guilt, grief, anger, frustration, psychological distress and fear are the most common psychological and physical symptoms reported by second victim followed an adverse event". [7, 11, 22, 23]

More than 3000 physicians were asked in the USA and Canada to identify their experience followed the adverse events, they revealed increase anxiety about future errors, loss of self-confidence, difficulty sleeping and reduced job satisfaction are the most common emotional feelings. [23] Female second victims being more distress, more scared of losing their confidence, more concerned about receiving blame, and experience more loss of reputation from their colleagues than males. [8] A number of Researches have shown that the impact of adverse events on the healthcare workers can be long-term effect. .[11, 22, 23, 27]

Large number of studies revealed that second victims are blaming themselves or feel embarrassed of their self to disclosed to clinical area. [18, 28] one nurse working in preoperative unit reported that they were angered with themselves after made an error, and some of them felt unfit to be a nurse after being involved in adverse event. [1,3]

Second victims have consequence factors similar to those who experience Post Traumatic Stress Disorder (PTSD). [19, 21] Symptoms may include "insomnia, nightmares, reliving the incident repeatedly, distrust by their colleagues, lack of self–confidence and fear of making another error". In addition to PTSD, the second victim can experience burnout and/or depression. [19, 21]

In a study by Eva V. G et al (2016) and West et al. (2006), 60% of the healthcare workers who involved in adverse event reported that they have depression. [9, 24] A few of them suffered prolonged symptom that can affect their health and performance. [7] Healthcare workers struggles to find psychological and non psychological support followed the adverse event or don't know where to find help of guidance. [10, 21, 20, 23] Scott et al (2009) concluded that regardless of sex, career type or years of experience, the adverse event was "a life-altering experience that left a permanent impact on the individual" (p326). [21]

Supporting nurses can plays a significant role in reduce the distress and helping in promote their self –confidents. [9, 22] sharing of lessons from previous adverse events be one of the effective support strategies, because no support makes the situation even worse. [1]

Lacking of adequate support might lead to risk for recurrent adverse event in the future. [7] A few organizations have developed

Support system and creating strategies or initiatives coping mechanisms for second victims.[11, 22]

Furthermore, Most of researchers are studying second victim of healthcare professional generally. However, there are limited studies conducted for nurse. Therefore, this study aimed to describe nurse's experiences and the organizational strategies to support them followed adverse events.

Methodology

- Design:

Cross sectional survey descriptive design was utilized in this study. With self administration questionnaire.

- Population

Convenience sample selected from King Saud medical city, based on the following criteria

Inclusion criteria	Exclusion criteria
1- Registered nurses who demonstrate nursing procedures	1- New hires
2- working in king Saud medical city's departments/units	2- Working in ambulatory care services and home health care Physiotherapy, Nursing administration offices,
3- who passed the proportionally period	3- Health care assistant

-Sample

Sample size was determined according to Cohen's (1992) guidelines using conventional: alpha of 0.05, power of 0.80, and

medium effect size, which revealed a sample size of 87 subjects. Over sampling was intended to gain more understanding.

- Sitting

Data was collected from the clinical department locates in pediatric, maternity, general hospital in addition to dental and artificial kidney centers at king Saud medical city .

- Ethical consideration:

The participants had full disclosure about the risks and benefits of the study. They were assured that there is no risk. Also they were assured that their participation is voluntary, they can withdraw from the study at any time without any penalty. In addition, they were assured that all information obtained would be anonymous by assigning numbers to participants, coding the data and keeping it in locked place and completely getting rid of data once the study finished

- Instruments:

After the permission was obtained from the authors of the original. Medically Induced Trauma Support Services (MITSS) Staff Support Assessment Tool(2010)was utilized.

In addition, it is tested reliability and validity CHBMS with unite states staff. Questionnaires consist of two parts (15 questions), The first part is the socio-demographic characteristics includes age, marital status, working experience, working hospital settings, educational level, information about their involvement in adverse events, their experience after be involved in advance events, to whom they spoke after experiencing the adverse event, and if institutional systems helped support them.

Second part of the questionnaires consists of the participants' Experience following the event subscale. including 12 statements

with points Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree) .Which allows respondents to rate their experience following the adverse event by rating 25 Likert scale items with a choice of five responses ranging from 1point (strong agree) to 5 points (strong disagree). Moreover, the response format included multiple choice items and free-text. In addition, respondents were allowed the opportunity to add free-text comments which allows respondents to rate the current support structure for employees who experience an adverse event, and recommendations for developing a support structure.

Also scores for each construct will be calculated separately, with higher scores indicating stronger feelings related to that construct. In addition, The Content and construct validity as well as internal consistency reliabilities of these scales have been established by the author.

- Procedure and data collection:

The approval to conduct the study was obtained from the Institutional Review Board (IRB) at King Saud medical city. Data were collected between July ,2 to Oct, 26/ 2017. The researcher visited the assigned hospitals with nursing administrators in each setting, explained the purposes and the outcomes of the study, and provided them with the questionnaire along with a cover letter, who in turn distributed to the nurses who are working in the hospital according to the inclusion criteria. Each nurse received a cover letter that described the purposes and aims of the study along with the study questionnaire. Completing and returning the questionnaires implied the participants' consent to participate in the study.

Meeting with all nurses during different shifts was difficult; therefore, the researcher left the questionnaire with the head nurses for distribution among nurses on different shifts. The researcher gave the head nurses envelopes for the nurses to keep the questionnaire in

and close it. One week later, the researcher returned to the head nurses at each setting to collect the questionnaires.

-Data Analysis:

Data were analyzed using Statistical Package for Social Sciences (SPSS) for windows version 17. Descriptive statistics (mean-frequency, SD) were used to describe the sample characteristics and answer the first 4th research questions. Moreover, logistic regression was used to assess the association between demographical characteristics and mammography utilization.

- Statistical Considerations

Data will be analyzed by the statistical package for social sciences (SPSS version 21.0). Descriptive analysis of demographics will be done; in addition. Mean, standard deviation and frequencies will be calculated and compared to each demographic variable.

Result

- Description of Study Population
  - Sample characteristics

Two hundred twenty seven nurses received the questionnaire. Two nurses refused to participate. Both of nurses were afraid from the idea of talking about their involvements with adverse events, the remaining were 225 nurses. Only 214 questionnaires were returned to the researcher with response rate (95.1%). sixteen questionnaires were excluded because they were incomplete. Therefore, the total number of participant was 198. Table 1 shows the sociodemographic characteristics of the study participants. The participants' age ranged of 20 and above, the majority of the participants age (n= 129, 65,1%) ranged between 26 to 35 and only 13.1% (n=21) of the participants aged 40 and above and 93.4% (n= 185) of the participants were

female nurses. Most of the participants (n = 140, 470%) were staff nurses and 23.5 %(n=46) were nurse leader (charge nurse, head nurse, nurse manager and director of nursing). The majority of the participants (66.7%, 132) had BSN and high diploma, and only 3% (n = 6) had MSN and higher degree.

Furthermore, 46.9% (n=93) of Nurses has working experiences of 7 years and above in various clinical field, and few of them (3.5%, n=7) had working experience less than a year. Moreover, the majority of the participants (74.8%, n = 148) were working in general hospital compared with 19.7 %(n=39) were working in maternity hospital and only (5.6%, n=11) were working in pediatric hospital. Only 19.2 %(n=38) of the participants were Saudi nationality compared with (80.8%, n=160) of them were not Saudi nationality.

Characteristics	*Frequency*	*percentage*
AGE :		
20-25	22	11.1
26-30	68	34.3
31-35	61	30.8
26-40	26	13.1
above 40	21	10.6
GENDER		
Male	13	6.6
Female	185	93.4
MARITAL STATUS		
SINGLE	90	45.5
MARRIED	102	51.5
DIVORCED	4	2.0
WIDOW	2	1.0
JOB TITLE		
NURSING AIDS	2	1.0
HCA	8	4.0

STAFF NURSE	140	70.7
MIDWIFE	2	1.0
CHARGE NURSE	30	15.2
NURSE MANAGER	6	3.0
HEAD NURSE	5	2.5
OTHER	5	2.5
NATIONALITY		
Saudi	38	19.2
Non-Saudi	160	80.8
EDUCATION LEVEL		
DIPLOMA	42	21.2
HIGH DIPLOMA	18	9.1
BSN	132	66.7
MSN OR HIGHER	6	3.0
YEARS OF EXPERIENCE		
LESS THAN ONE YEAR	7	3.5
1-3 YEARS	36	18.2
4-6 YEARS	62	31.3
7-10 YEARS	46	23.2
MORE THAN 10 YEARS	47	23.7

-Involvement in Adverse Events

Table 2 shows nurses involvement in adverse event in their carrier. 33.8% (*n*=67) of the participants were involved in adverse event in their career, and more than half of the nurses (64.2%, n=43) were involved in adverse event with no patient harm, while 16.4%(n=11) of the participants were involved in the adverse event with permanent functional loss or fetal harm/death, less than half of

the participants (46%, n=31) were involved in the adverse events before one year ago. 65.5 %(n=44) of the participants reported their involvement in 1 to 3 adverse events in their carrier, while 3%(n=2) of them were involved in more than 10 adverse events in their carrier.

Table.2 involvement in adverse events in nurses' career.

Statements	*Frequency*	*Percentage*
Not involved	131	21.7
Involved in adverse event with no patient harm	43	6.6
Involved in adverse event with temporary harm	13	2.5
Involved in adverse event with permanent harm	5	3.0
Involved in adverse event with fetal harm/death	6	21.7

N=67

- Feeling/symptoms followed the adverse events

Table 3 shows nurses' physical and psychological feeling/symptom followed adverse events. The majority of the participants 82 %(n=55) experienced several physical and psychological feelings /symptoms followed the adverse events. Most of the psychological feelings/symptoms reported by the participants that they were Reliving the event (flashback) (74.6%, n=50), returned to work anxiety (40.2%, n=27), difficult concentration (46.2%, n=31), grief (42%, n=28), feeling afraid (31, 9%, n=21) and expressed depression (35.8%, n=24). On the other hand, the majority of physical feelings and symptoms reported by the participants that they had Sleep disturbances (44.7%,n=30), unable to relax (28.3, n=19), and Sweaty palms (23.8%, n=16).

Table 3. Physical and physiological symptoms followed adverse events.

SYMPTOMS	Frequency	%	SYMPTOMS	Frequency	%
Frustration	13	19.4	Frequent bouts of crying	11	16.4
Return to work anxiety	27	40.2	Attempts to avoid reminders of the event	23	18
Difficult concentration	31	46.2	Extreme fatigue	8	12
Decrease job satisfaction	10	15	Self-doubt	26	25.4
Reliving the event (flashbacks)	50	74.6	Avoidance of patient care area	8	12
Smells, sounds, places, people, etc. that trigger anxiety related to the event	5	7.4	Changes in sleep patterns	14	21
Feelings of helplessness	16	23.8	Changes in energy level	6	9
Loss of confident	11	15.4	Sleep disturbances	30	44.7

Grief	28	42	Rapid heart rate	11	16.4
Depression	24	35.8	Inability to relax	19	28.3
Desire to reigned	12	18	Muscle tension	5	6
Feeling afraid	22	32	Increase blood pressure	4	9
Feelings of guilt	25	37.3	Sweaty palms	16	23.8
Suicide attempt	1	1.5	Changes in appetite	6	9
Drug abuse	2	3			

N= 67

Furthermore, 42.3% (22) of the participants reported that they spent between one to three weeks to rid all physical and physiological symptoms. And only 13.4 (n=7) of them described one month to rid them. Table 4 shows time period that the participants were spent to rid all physical and psychological symptoms.

Table.4 When the participants rid all the physical and physiological symptoms.

Statements	*Frequency*	*Percentage*
Immediately	4	7.7%
1-2 days after I made adverse event	16	30.7%
3-5 days after I made adverse event	3	5.7%
One week after I made adverse event	12	23%
2-3 weeks after I made adverse event	10	19.2%
one month after I made adverse events	7	13.4%
More than a month after I made adverse events	0	0%

N=52

- Support System

Although 55.2% (n=37) of the participants were received psychological and no psychological supports after they involved in adverse event. Table 5 shows who were provided support to the nurses.

Moreover, 21.6% (n=8) of the participants received emotional support from Head Nurse, 18.9% (n=7) from Nurse Manager, only 8% (n=3) from Director of Nursing and 51.4% (n=19), from others (e.g. friends, family, spouse).

On the other hand, only 13% (n=9) of the participants have an opportunity to discuss any ethical concerns that they had relating to the event or the processes that were followed subsequently with their heads. 62% (n=42) of the participants believed that supports system is important to those who were involved in adverse event. One of the participants stated that "*I do believe that support system is important, because it will help who are involved in events to minimize or eradicate the consequences of event on them and institutions*". Another participants stated that *"I do believed that support system is important because it will give mental support to cope up with*

situation and to bring back to normal and mental as well as physical status". One more participants stated that*" it is important because it will help to coping with the emotional distress.*

Table 5. Who are supporting nurses after the adverse events.

Statements	*Frequency*	*Percentage*
Head Nurse	8	21.6
Nurse Manager	7	18.9
Director of nursing	3	8.0
Others	19	51.0

N=37

- Experience after Adverse Events

The Cronbach alpha coefficient measure was found sufficient. It was 0.90.

Regarding to nurse's experience followed adverse events, table 6 shows the participants level of agreement or disagreement with their experiences following the adverse event.

The participants worried a lot about what their clinical peers would think about them after the events (59.7%, n=40, M=1.16, SD=1.72, R=1-5). Although 67.1% (n=45) they don't knew how to access confidential emotion support within the organization if they needed. However, 59.7% (n=40, M=0.75, SD=1.2, R=1-5) of the participants agreed that the hospital had a clear process though which they could report any concern about patient safety without fear of retribution or punitive action.

Furthermore, 59.7% (n=40, M=1.14, SD=1.72, R=1-5) of the participants agreed that they found it difficult to continue to practice effectively after the event, and more than half of the participants

(53.7%, n=36, M=1.13, SD=1.71, R=1-5) were felt embarrassed about seeking psychological support after the event. However . 49.7% (n=38, M=1.16, SD=1.72, R=1-5) of the participants revealed that they totally agreed that first line manager provided meaningful and sustained support after the event, and 61.3% (n=41, M=1.2, SD=1.8, R=1-5) from clinical colleagues and 71.2% (n=48, M=1.2, SD=1.8, R=1-5) from family and friends.

Furthermore, 77.6% (n=52, M=0.68, SD=1.1, R=1-5) of the participants didn't adequately supported by the organization and associated structures and they don't know if the organization learned from the event and took appropriate steps to reduce the chance of it happening again (56.7%, n=38, M=1.0, SD=1.5, R=1-5). Whereas, 71.7% (n=48, M=1.13, SD=1.71, R=1-5) of the participants disagreed or don't know that there was a designated member of the organization who did a good job guiding me through the processes that are followed after a serious adverse event.

Also 55.2% (n=37, M=1.18, SD=1.77, R=1-5) had extreme anxiety about disclosing to the patient and/or family few of the participants. However, 14.9% (n=10) of them were supported/trained in how to disclose to the patient and/or family, and. More than half of the participants (56.7%, n=38, M=0.8, SD=1.3, R=1-5) disagreed that the organization ensured that the needs of the patient and/or family after the event were appropriately met.

Table 6. Frequencies, Percentages, Mean, Standard Deviation values for nurses level of agreement or disagreement with their experiences following the adverse event.

Table 6. Frequencies, Percentages, Mean, Standard Deviation values for nurses level of agreement or disagreement with their experiences following the adverse event.

Statements	[a] Disagree		I don't know		[b] Agree		*M*	*SD*
	Freq.	%	Freq.	%	Freq.	%		
I was always clearly briefed about the 'next steps' in the hospital's processes for following up after serious adverse events	47	70.3	16	23.8	4	5.9	0.58	1.01
Memories of what happened to the patient kept troubling me for a long time after the event	16	23.9	8	11.9	43	64.2	1.15	1.72
I worried a lot about what my clinical peers would think about me after the event	12	17.9	15	22.4	40	59.7	1.16	1.72
I knew how to access confidential emotional support within the institution if I needed it	45	67.1	15	22.4	7	10.5	0.74	1.2
The hospital had a clear process through which I could report any concerns I had about patient safety without fear of retribution or punitive action	9	13.5	18	26.8	40	59.7	1.2	1.77
I found it difficult to continue to practice effectively after the event	16	23.8	11	16.5	40	59.7	1.14	1.72
I worried a lot about a lawsuit (or the possibility of one)	14	20.9	11	16.4	42	62.6	1.1	1.75
I felt (or would have felt) embarrassed about seeking psychological support after the event	18	26.8	13	19.5	36	53.7	1.13	1.71
My clinical colleagues provided meaningful and sustained support after the event	11.9	22.3	18	26.8	41	61.3	1.2	1.8
There were times when I felt less able to work safely and effectively because of what happened	12	17.9	17	25.4	38	56.7	1.16	1.74
My clinical line manager provided meaningful and sustained support after the event	10	15	19	28.3	38	56.7	1.16	1.72
For a while after the event I felt shunned by some of my clinical colleagues	33	49.2	17	25.4	17	25.4	1.1	1.6
My family and friends were the mainstay of my support after the event	16	23.8	3	4.4	48	71.6	1.2	1.8
I moved or seriously considered moving to another institution because of the event or what happened afterwards	24	35.8	16	23.8	27	40.4	1.0	1.6
I left or seriously considered leaving my profession because of the event or what happened afterwards	48	71.7	14	20.8	5	7.5	0.7	1.16
I was enabled to communicate appropriately with the patient and/or family after the event	16	23.8	12	17.9	39	58.2	1.1	1.75
There was a designated member of the organization who did a good job guiding me through the processes that are followed after a serious adverse event	48	71.7	15	22.4	4	5.9	1.13	1.71
I felt adequately supported by the organization and associated structures	52	77.6	9	13.4	6	8.9	0.68	1.1
I think that the organization learned from the event and took appropriate steps to reduce the chance of it happening again	15	22.4	38	56.7	14	20.9	1.0	1.5
I feared having to speak to the patient and/ or family	19	28.3	13	19.5	35	52.2	1.1	1.6
I had the opportunity to speak with the patient and/or family	15	22.4	13	19.5	39	58.2	1.18	1.77
I wanted to speak to the patient and/or family but was told not to do so	19	28.3	14	20.9	34	50.7	1.13	1.71
I was supported/trained in how to disclose to the patient and/or family	39	28.2	18	26.8	10	14.9	0.84	1.32
I had extreme anxiety about disclosing to the patient and/or family	12	17.9	18	26.9	37	55.2	1.18	1.77
The organization ensured that the needs of the patient and/or family after the event were appropriately met	38	56.7	19	28.3	11	16.4	0.8	1.3

Discussion

Although there is no study conducted among nursing previously. However, results of this study were consistence with of previous researches related to prevalence of second victim involved in adverse events number nurses who involved in adverse events. [13, 16, 20, 25]

In this study second victims were troubled about the impact of the incidents on the first victim, after they were being involved in event, they were experienced various of physical and psychological feelings /symptoms that did not differ by sex, nationality or area of specialty. One of the major feelings was that the participants were remembered the event frequency (flashbacks), and they usually memorized of what happened to the patient and it was kept troubling them for a long time after the event. This result found consistence with previous research. [21, 22, 29]

Moreover, 2nd major findings was second victims had difficult concentration during their duties time, in the Previous studies conducted among healthcare workers includes nurses reported similar findings. [21, 22, 29]

On the other hand, feeling of guilt, return to work anxiety , felt afraid , grief, depressed, difficult to sleep and unable to relax were the most common feelings/symptoms reported by the participants. The results were in a way of confirms with previous results conducted among heath care workers in different cultures, [7,11, 21, 22, 27] However, theses impacts may lead to low self confident, poor performance and disturb the relationship and trust with first victim.

One significant result showed that nurses were extreme feel anxiety to disclosing to the patient and/or family and they feared

having to speak to the patient and/ or family after they made the adverse event. [7, 13]

On the other hand, second victim in this study were felt of guilt followed the adverse and blaming themselves of their individual response to the events, this result was in line with the finding of other similar study conducted among different populations.[18, 27, 28] These symptoms may lead the organization to pay more attention to initiate support system in order to avoid negative consequences for the nurses and the organizational.

Furthermore, the participants revealed that they paid a long time to rid all physical and psychological symptoms. This finding was well-matched the result of previous researches. [5, 11, 17, 28, 29] Prolonged period of disability the second victim to coping after the event in addition lack of support system can add to emotional burdens, and lead to undesirable impacts for personal , professional and organizational domains. Personal's impacts may lead to decline their performance, effectiveness, quality of care and increase the risk of future adverse events. As for professional impacts, it may lead to disturb their relationship with first victim, colleagues and the organization and risk to make more adverse event. Last for organizational impact, it may pay high cost of lack the support second victims by increase cost of care, turnover, poor quality of care and increase length of stay.

More than half of the participants agreed that they worried a lot about what they clinical peers would think about them after the event. This result was consistent with previous studies conducted among different population. [3, 7,17, 28, 29] Furthermore, the participants in this study were agreed that they need education and trained in how to disclose to the patient and/or family and they expressed that they had extreme anxiety about disclosing to the patient and/or family. This

result showed similar to the result of previous studies conducted among healthcare processional. [7, 9, 28, 29] Indeed, nurses need help to disclosing with patient and family because they embarrassed and afraid some time to disclosing themselves to patient after the adverse events. [4, 7] Support second victim can be provided by their peers, families, friends. But, organizational support have unique value, effects, and positive outcome.[11, 16, 19, 21, 22, 31, 29] However, the result in this study showed that none of the participants received appropriate or effective, formal support from their organization, and don't knew if there is support system or not and how to access confidential emotional support within the institution if I needed, in addition they were disagreed with the statement (There was a designated member of the organization who did a good job guiding me through the processes that are followed after a serious adverse event). This result was inconsistent with other studies. [11, 22, 31, 29] Nevertheless, most of the participants were received informal support from first line manager, colleagues, family and friends. This result was consistent with previous study. [5, 11, 16, 22,]

In the study the participants disagreed with the statement (for a while after the event I felt shunned by some of my clinical colleagues. Usually second victim need someone to talk with him/her to express their feelings after the event. [11, 22]

The participants were agreed that they received meaningful support from their colleagues and first line manager. Generally, colleagues or peers are unique person can understand and compassionate with what second victim's feels, when nurses made an adverse events, his/her peers don't hesitated to provide emotional support.

Recommendation

Healthcare institution can also be third victim of the adverse events, so to minimize the impact both of personal and organizational, healthcare institution needs to establish support system includes but not limited to policies, procedures, coping strategies, and training and education to support healthcare workers followed the adverse events, and builds full trust, respect and compassionate culture among them in order to eliminate negative consequences for second victim. Furthermore, organizational leader have significant role for support second victim through establishing contact person or list of person to meet the second victim needs and approved support system.

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