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The attitudes of nursing students and clinical instructors towards reporting irregular incidents in the medical clinic

Ofra Halperin*, Olga Bronshtein

Max Stern Academic College of Emek-Yezreel, Israel

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ABSTRACT

Despite efforts to increase patient safety, medical incidents and near misses occur daily. Much is still unknown about this phenomenon, especially due to underreporting. This study examined why nursing students and clinical instructors underreport medical events, and whether they believe that changes within their institutions could increase reporting. 103 third- and fourth-year nursing students and 55 clinical instructors completed a validated questionnaire. The results showed that about one-third of the instructors and one-half of the nursing students believed that circumstances and lack of awareness, and fear of consequences, lead to underreporting. Both nursing students and clinical instructors ranked "fear of consequences" as the main reason for not reporting, yet students ranked this higher than their instructors. Moreover, both groups believed that incident reporting could be increased following changes in the clinical field, mainly by increasing awareness and knowledge. A large percentage of participants also wrote that they do not report errors that are the result of circumstances and lack of awareness, mainly fear of consequences. Therefore, hospitals and academic institutions may need to create a more accepting organizational climate. Moreover, institutions that allow incident reports to be submitted anonymously and that take educational (not disciplinary) action, may increase incident reporting.

1. Introduction

Although hospitals aim at providing excellent medical care, research shows that they are a dangerous place (Elon, 2003). The literature demonstrates that one cause of decreased safety and increased hazards in hospitals is the phenomenon of medical errors and near misses made by staff members. Therefore, in order to improve the quality of medical care, hospitals and teaching colleges must analyze and learn from these incidents. However, as not all incidents are reported, institutions are not able to analyze them fully and implement the necessary corrective actions. In other words, medical care may not be optimal because of medical errors and near incidents that occur but are not reported.

2. Literature review

2.1. Scope of medical errors

Research shows that hospitals are a dangerous place (Elon, 2003). A study conducted in children's cardiac surgery units found that 91% of staff encountered a medical error, with 41% of them occurring on a daily basis (Bognar et al., 2008). Kagan and Barnoy (2008) reported that only 5% of the nurses that participated in their study had never encountered a medical error, while half reported that they had frequently encountered errors. A later study found that about 65% of the nurses witnessed medical errors on a daily to weekly basis (Kagan and Barnoy, 2013). Makeham et al. (2002) examined the frequency of patient safety incidents in ten medical institutions. The results showed that for every 1,000 medical treatments, about 400 errors were reported – 32% of which included prescription errors, 23% communication errors, 12% equipment errors, and 2% clinical errors. Rubin et al. (2003) cataloged safety incidents as errors of process (administration, investigation, communication, etc.) and errors of knowledge and skills (diagnosis, course of treatment, etc.). Fleischmann and Tabak, 2010 wrote that human error incidents do not happen by chance, but are a result of failures in the system's planning process.

2.2. Safe treatment

In 2000, Reason emphasized the importance of conveying error-related information to the management, and defined this as the "reporting culture" – a prerequisite for the "safety culture". In his opinion, a reporting culture could influence the management's ability to obtain data and knowledge about environmental, organizational and personal

* Corresponding author. Emek Yezreel, 19300, Israel.
E-mail addresses: ofrah@yvc.ac.il (O. Halperin), olga.bronshtein@moh.gov.il (O. Bronshtein).

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factors that determine the safety of the system as a whole. Safe treatment is a main value of health organizations (Mathews and Pronovost, 2012) and there is a general understanding that the organizational culture regarding safety of treatment is closely related to the reporting of incidents by medical teams (Singla et al., 2006).

Wakefield et al. (2010) found that the reporting of incidents and near incidents predicts the level of commitment towards safe treatment. Kagan and Barnoy (2013) also found a significant positive correlation between reporting and the culture of treatment safety at an organizational, departmental and individual level. Chen et al. (2012) support these findings and found that a positive correlation between the culture regarding safety of treatment and behavior promoted safe treatment in 42 hospitals across Taiwan.

2.3. Reporting barriers

The reporting of errors by staff is influenced by personal perceptions, organizational climates and organizational cultures. In their study, Zohar et al. (2007) found a correlation between the organizational safety climate and medication-related incidents. They also concluded that a positive patient safety climate within a unit or department could compensate for the harmful effect of a negative climate within the hospital. Waters et al. (2012) found a correlation between nurses' team work, group dynamics and inter-team communications, and the reporting of dangerous incidents. These researchers concluded that impaired group dynamics, ineffective communications between team members, and certain disagreements, made nurses less like to report adverse events.

Sanghera et al. (2007) explained that barriers that lead to underreporting include unawareness, complex reporting processes (such as too detailed forms), no point in reporting (the perception that nothing will be done with the reporting anyway), and personal factors (such as fear of losing license to practice). The major barrier in self-reporting, however, is the personal "risk". Studies have shown that 50–96% of incidents are not reported due to the nurses' fear of negative consequences regarding their status in the department and their employment in general (Classen et al., 2011; Potylycki et al., 2006; Uribe et al., 2002).

Fear is one of the main personal barriers that stand in the way of nurses' reporting. This includes the fear of being reprimanded by superiors, disciplinary action (Walker and Lowe, 1998), potential reprisal (Karadeniz and Ckmakci, 2002), the responses of managers and colleagues and the fear of being blamed and sued (Uribe et al., 2002). In their research, Karadeniz and Ckmakci (2002) found that 63–84% of nurses did not report incidents for fear of the reactions of their colleagues and superiors.

Among nursing students, the reasons for non-reporting could be related to organizational factors and procedures, and to the personal factors of students and their instructors (Uribe et al., 2002; Holden and Karsh, 2007; Koohestani and Baghchegli, 2008).

Wolf et al. (2006) examined the differences between errors made by students and those made by experienced and certified colleagues, and found that both groups may be influenced by their environment, which can be misleading, distorting and distracting, and could affect the reliability of personal processes. Moreover, environmental factors that could influence errors can be divided into internal environmental factors (personal stress, exhaustion, etc.) and external environmental factors (human engineering, unexpected, threatening environmental changes, etc.).

Mistakes are usually combined with feelings of guilt, self-disappointment, anger, frustration, and personal and professional distress (Guttmann, 2001). These reactions indicate how errors are perceived as forbidden and unacceptable in nursing. However, it is this approach that makes it difficult for people to deal with their errors, as emotional reactions increase people's desire to protect themselves and prevent the necessary honesty that is needed to carry out a purposeful, conscious enquiry and prevent escalation (Koren, 2003). Wagner et al. (2013) write that in order to increase error-reporting, members of hospital management and staff must support colleagues after an error occurs. Increasing support and communication and decreasing guilt will turn errors into a learning opportunity, and in turn will improve the quality of medical care provided.

Based on the literature that depicts the extent of medical errors and near misses, and the worrisome phenomenon of underreporting, the purpose of this study was to examine factors that contribute to the underreporting of incidents by nursing students during their clinical practicum, and by their clinical instructors. The study also aimed at examining the attitudes of the participants towards the possible improvement of reporting if certain policy and strategy changes were introduced within their academic or clinical institution.

3. Method

3.1. Participants

A quantitative questionnaire was administered to 103 third- and fourth-year nursing students and 55 clinical instructors from an academic college in Israel. All students had completed their third-year clinical experience. The nursing students were administered the questionnaire by their clinical unit coordinators during their final week of clinical practicum, while the clinical instructors were administered the questionnaire during their meetings with the coordinators. Anonymity was ensured to all participants, and neither the researchers nor the coordinators were involved in grading the students on their practical experience or in evaluating the instructors. Moreover, details of the participants were not disclosed to the researchers during or following the study.

Participants were, however, asked to state their gender, age and family status. Nursing students were asked to state their year of study (3rd or 4th year), and instructors were asked to state how long they had been working in nursing, in the department in general, and as clinical instructors in particular.

3.2. Tool

A questionnaire for examining factors that contribute to underreporting was administered after being translated from English into Hebrew using the back-translation method (Uribe et al., 2002). The study was approved by the Ethics Committee in the academic institution approved where the researchers lecture. The first part of the questionnaire examined the respondents' attitudes towards 17 factors that could lead to underreporting, and participants were asked to rank each factor on a scale of 1–4, from "I completely disagree" (1) to "I completely agree (4). Factors included "fear of being sued" and "lack of information about reporting process", etc. The second part of the questionnaire examined the respondents' attitude towards changeability of the factors, following institutional changes in policy and strategy, including the implementation of a dedicated study program regarding incident reporting. The participants were asked to rank each factor on a scale of 1–4, from "cannot be changed at all" (1) to "can be changed to a large degree" (4).

3.3. Data analysis

Factor analysis was performed twice for the 17 contributing factors. The factors were first analyzed regarding their *contribution to underreporting*, and were then analyzed regarding their perceived *changeability of the factors, following institutional changes in policy and strategy*. Both analyses were performed using principal components, with a varimax rotation and the eigenvalue-greater-than-one rule. Both analyses resulted in two factors: (1) *Circumstances or lack of awareness* leading to underreporting, which included 11 items such as "lack of

information regarding what should be reported" and "a suitable computer or software for reporting was not available"; (2) *Fear of consequences due to reporting*, which included 6 items such as "fear of being sued" and "fear of failing the practicum".

The first factor analysis presented the following results: For *Circumstances or lack of awareness*, results showed an eigenvalue greater than one (7.66), explained variance = 45.09%, loading = 0.40–0.76, and internal consistency α = 0.89. For *Fear of consequences due to reporting*, results showed an eigenvalue greater than one (1.88), explained variance = 10.63%, loading = 0.55–0.88, and internal consistency α = 0.89.

The second factor analysis presented the following results: For *Circumstances or lack of awareness*, results showed an eigenvalue greater than one = 8.50, explained variance = 49.99%, loading = 0.47–0.88, and internal consistency α = 0.93. For *Fear of consequences due to reporting*, results showed an eigenvalue greater than one (1.52), explained variance = 8.92%, loading = 0.44–0.86, and internal consistency α = 0.83.

In both analyses, the overall scores for the two parts of the factor analysis were also defined on a scale of 1–4 (*contribution to underreporting*, α = 0.92, and *changeability of the factors, following institutional changes in policy and strategy*, α = 0.93).

4. Results

Table 1 presents background information about the nursing students and their instructors who participated in this study. Most participants were female. Most nursing students were single, had an average age of 26, and were fourth-year students. Most clinical instructors were married and had an average age of 37. All instructors had undergone a clinical instruction course (over a period of 7 months), 40% held an MA. About half the instructors had trained to become clinical instructors after completing their BA. Participating in such a training courses provided the nurses with a higher rank and salary from the hospital.

The instructors had been working in the nursing profession for about 13 years on average, with a maximum of 31 years of work experience. They had been working in their current department for about 10 years on average, with a maximum of 28 years. They had been instructing students for about 2 years on average, with a maximum of 20 years. At the time of the study, 58% of the instructors were first-time clinical instructors.

Table 1
Background information about the participants (N = 158).

		Students		Clinical instructors	
		N	%	*N*	%
Gender	Male	19	18.4	15	27.3
	Female	84	81.6	40	72.7
Family status	Married	34	33.0	49	89.0
	Single	64	62.1	3	5.5
	Divorced/ widowed	5	4.9	3	5.5
Year of study	Third-year	41	39.8		
	Fourth-year	62	60.2		
Education	B.A.			38	69.1
	M.A.			17	30.9
Additional Training Course	Yes			28	50.9
	Range	*M*	*SD*	*M*	*SD*
Age	Students: 21–42 Instructors: 24–53	26.24	4.59	37.45	6.84
No. of years in profession	1–31			13.16	7.91
No. of years in department	1–28			9.78	7.35
No. of years instructing	0–20			2.16	4.21

A 2-way univariate repeated ANOVA was conducted to examine the differences in the factors that contribute to underreporting incidents (for the overall score of circumstances or lack of awareness, and fear of consequences). Significant differences were found between the participants' attitudes towards factors that contribute to underreporting and factors that could be changed, and between students and instructors (2 × 2; see Table 2). For the overall score, factors were ranked higher for their changeability than for their contribution to underreporting. Further analysis of the significant interaction between the two groups of participants showed that students ranked the frequency of factors that contribute to underreporting higher than their instructors [$F_{(1, 156)} = 7.75$, $p = .006$, $\eta^2 = 0.047$], but no significant difference was found between the two groups of participants (students and instructors) in their attitude towards the changeability of the factors [$F_{(1, 156)} = 0.62$, $p = .431$, $\eta^2 = 0.004$].

Similarly, for *circumstances or lack of awareness*, and for *fear of consequences*, the changeability of the factors was ranked higher than their frequency for both groups. Further analysis of the significant interaction showed that students ranked the frequency of factors that contribute to underreporting higher than their instructors (*circumstances or lack of awareness*: $F_{(1, 156)} = 4.12$, $p = .044$, $\eta^2 = 0.026$; *fear of consequences*: $F_{(1, 156)} = 10.69$, $p = .001$, $\eta^2 = 0.064$], but no significant difference was found between the 2 groups of participants regarding their changeability (*circumstances or lack of awareness*: $F_{(1, 156)} = 1.93$, $p = .166$, $\eta^2 = 0.012$; *fear of consequences*: $F_{(1, 156)} = 0.20$, $p = .652$, $\eta^2 = 0.001$).

With regards to factors that contribute to underreporting, analysis was also conducted to investigate the differences between factor frequency and factor changeability, and between attitudes of students and instructors (see Table 3). This analysis covered all 17 factors presented in the questionnaire. Scores for underreporting included overall score, *circumstances or lack of awareness* and *fear of consequences*. Frequency and changeability of factors were defined as either zero or 1, with zero referring to "I disagree that this factor contributes to underreporting" or "I disagree that this factor can be changed", and 1 referring to "I agree that this factor contributes to underreporting" or "I agree that this factor can be changed". The results in Table 3 are presented in percentages. The differences between students and instructors were calculated using z-tests to examine the difference between independent relations. The results show that 23–39% of students believe that *circumstances or lack of awareness* contribute to underreporting, and 36–52% believe that *fear of consequences* contribute to underreporting.

Factors that received high rankings included "no option for reporting anonymously" and "fear of being blamed", while factors that received low rankings included "lack of knowledge regarding who is in charge of reporting" and "lack of awareness about benefits of reporting". Up to 27% of the instructors believed that "circumstances or lack of awareness" leads to underreporting, and 22–33% of them believed that "fear of consequences" leads to underreporting. Among the instructors, the factors that received high rankings included "no option for reporting anonymously", and "fear of disciplinary action". The factor that received the lowest ranking was "reporting is unnecessary as no harm was caused". For a number of factors, especially *fear of consequences*, significant differences were found between the students and their instructors, whereby a higher percentage of students than instructors ranked the factors are reasons for underreporting.

Among students, 71–83% believed that the *Circumstances or lack of awareness* factor is changeable, and 54–76% believed that *fear of consequences* is changeable. Factors that received high rankings included "lack of knowledge about what needs to be reported" and "reporting has little impact on improving the quality of care". Factors that received low rankings included "fear of telling on others" and "fear of being

Table 2
Averages, standard deviations and F values for factors that contribute to underreporting and their changeability according to group (N = 158).

	Factor Frequency		Factor Changeability		Difference		
	Students (n = 103)	Instructors (n = 55)	Students (n = 103)	Instructors (n = 55)	Frequency vs. Changeability	Students vs. Instructors	Interaction
	M (SD)	M (SD)	M (SD)	M (SD)	$F_{(1, 156)}$ (η^2)	$F_{(1, 156)}$ (η^2)	8.09** (.049)
Overall Score	2.14 (0.66)	1.85 (0.50)	2.97 (0.66)	3.05 (0.44)	252.20*** (.618)	1.73 (.011)	8.09** (.049)
Circumstances or lack of awareness	2.02 (0.67)	1.80 (0.52)	3.03 (0.71)	3.17 (0.48)	289.49*** (.650)	0.16 (.001)	.63* (.041)
Fear of consequences	2.35 (0.82)	1.94 (0.65)	2.86 (0.71)	2.82 (0.51)	87.79*** (.360)	6.32* (.039)	6.26* (.039)

*$p < .05$, **$p < .01$, ***$p < .001$.

sued".

Among instructors, 75–93% believed that the *Circumstances or lack of awareness* factor is changeable, and 56–78% believed that *fear of consequences* is changeable. The factor that received the highest ranking was "lack of awareness about benefits of reporting", while the factors that received the lowest rankings included "fear of being blamed" and "fear of telling on others" and "fear of being sued". No significant differences were found between students and instructors regarding changeability of factors.

A number of correlations were found between background data and the research variables, yet they should be regarded with caution due to multiple bivariate tests and the inflation of α. **Among the students**, results showed a difference in the ranking of *circumstances or lack of awareness* between men and women ($t_{(101)} = 2.97$, $p = .004$), whereby men ranked this factor higher than women ($M = 2.42$, $SD = 0.64$; $M = 1.93$, $SD = 0.65$, respectively). A difference between the genders was also found in the overall score for factors that contribute to underreporting ($t_{(101)} = 2.39$, $p = .019$), whereby the men's overall score was higher than the women's ($M = 2.46$, $SD = 0.58$; $M = 2.07$, $SD = 0.66$, respectively).

Among the instructors, significant negative correlations were found between fear of consequences and number of years working in nursing ($r = -0.28$, $p = .045$) and number of years working on the ward ($r = -0.31$, $p = .022$), whereby the less the number of years, the greater the fear of consequences. In addition, a significant difference was found according to level of education with regards to the changeability of the factors that are a result of circumstances or lack of awareness ($t_{(53)} = 2.28$, $p = .027$), whereby instructors who hold an M.A. ranked the changeability of these factors higher than instructors who only hold a B.A. ($M = 3.38$, $SD = 0.42$; $M = 3.08$, $SD = 0.48$, respectively). No additional differences were found.

5. Discussion

The study depicts the scope of underreporting patient care incidents and near misses among nursing students and clinical instructors. The clinical instructors mainly included senior professionals in the department, with the highest academic and professional education of the nursing team. However, the study showed that among the instructors, 11–27% would not report incidents or near misses due to *circumstances or lack of awareness* (such as "reporting is unnecessary as no harm was caused"), and 22–33% would not report them due to *fear of consequences* (such as "cannot report anonymously" and "fear of disciplinary action"). In addition, students ranked the factors for not reporting significantly higher than their clinical instructors. 23–39% of students believed that *circumstances or lack of awareness* contribute to underreporting, and 36–52 believed that *Fear of consequences* contributes. Fear was found to be one of the major personal barriers that prevents nurses and students from reporting incidents: Fear of being reprimanded, disciplinary action (Walker and Lowe, 1998), potential reprisal such as terminating studies (Karadeniz and Ckmakci, 2002), reactions of colleagues and managers and being accused or sued (Uribe

Table 3
Distribution of factors that contribute to the underreporting of incidents by frequency and changeability.

	Factor Frequency			Factor Changeability		
	Students (n = 103)	Instructors (n = 55)	Z	Students (n = 103)	Instructors (n = 55)	Z
	Agreement %	Agreement %		Agreement %	Agreement %	
Circumstance or lack of awareness						
No suitable computer or software for reporting	30.1	20.0	1.36	71.8	74.5	0.36
Lack of awareness that an incident had occurred	38.8	21.8	2.16*	82.5	89.1	1.09
Document incidents is time consuming	27.2	21.8	0.74	70.9	83.6	1.77
Lack of information regarding what should be reported	34.0	14.5	2.61**	83.5	89.1	0.95
Lack of information of motivation to report	25.2	18.2	1.00	72.8	81.8	1.26
Lack of awareness about benefits of reporting	24.3	21.8	0.35	81.6	81.6	1.89
Extra work is required in order to report	25.2	27.3	0.28	74.8	74.8	0.03
Lack of information about who is in charge of reporting	23.3	14.5	1.30	79.6	79.6	1.20
Lack of information about the reporting process	28.2	16.4	1.65	81.6	81.6	1.56
Reporting is unnecessary as no harm was caused	30.1	10.9	2.70**	79.6	79.6	1.82
Reporting incidents has little contribution to improving patient care	26.2	14.5	1.68	83.5	83.5	0.95
Fear of Consequences						
Fear of being sued	35.9	21.8	1.82	65.0	65.0	0.28
Fear of telling on others	43.7	25.5	2.25*	54.4	54.4	0.68
Fear of failing the practicum/Being fired	44.7	23.6	2.59**	75.7	75.7	1.13
Fear of disciplinary action	44.7	30.9	1.68	75.7	75.7	1.13
No option for reporting anonymously	52.4	32.7	2.36*	73.8	73.8	0.61
Fear of being blamed	50.5	25.5	3.03**	70.9	70.9	1.83

*$p < .05$, **$p < .01$, ***$p < .001$.

et al., 2002).

Students view their instructors as role models (Leeuw et al., 2013), and are influenced by the departmental climate, internalizing the customary conduct regarding incident reporting (Waters et al., 2012). Seeking someone to blame and administering punishment have been found to be ineffective, and does not ensure safety and quality improvement and the decrease of incidents in the future (Koren, 2003; Benner et al., 2002). In 2013, the Israel Ministry of Health issued guidelines regarding investigations into incidents and unusual events within medical institutions, using the "understand and learn" approach. However, although the study was conducted two years after these guidelines were introduced, the results show that changes regarding underreporting were not complete.

Kagan and Barnoy (2013) found a significant, positive correlation between the patient safety culture (at 3 levels: the individual, the department and the organization), and reporting incidents and unusual events. A positive safety culture within the organization or department was found to contribute to the increase in reporting, while a negative one decreases reporting.

The results of the present study show that about 71–83% of nursing students and 75–93% of clinical instructors believed that policy changes within the clinical unit, and a dedicated training program for clinical instructors and nursing students about patient safety – combined with policy changes within the medical institution where they are employed or being trained – could enhance reporting by impacting the "circumstances of lack of awareness" factors. A smaller percentage of students (56–76%) and instructors (56–78%) believed that the "fear of consequences" factor is changeable. No significant differences were found between students and instructors regarding attitudes towards factor changeability.

In addition, among the instructors, significant negative correlations were found between fear of consequences and years working in nursing and years working on the ward. The less the number of years, the greater the fear of consequences. Perhaps, working on the ward for less years is characterized by a feeling of insecurity that in turn leads to increased fear among these instructors, who also had to act as role models for nursing students who had even less experience than they did.

Moreover, a significant difference was found among clinical instructors according to their academic degree but only with regards to changeability (not with regards to frequency of factors), whereby M.A. holders believed in factor changeability more than B.A. holders. Kagan and Barnoy (2013) examined correlations between levels of education and levels or reporting among nurses who held a diploma and nurses who held an academic degree. In their research not having an academic nursing degree was significant predictor of error reporting, explaining, together with place of birth, error incidence and patient safety culture, 28% of variance. Nursing instructors play a key role in developing skilled and accountable nurses. Cheraghi et al. (2008) indicated that instructors should have access to continuing education to maintain their scientific and practical qualifications and perform an effective role in clinical education. In line with these findings, the results of this study emphasize the importance of providing continuing education courses, in order to maintain and promote scientific and professional competence of instructors and which in turn could decrease underreporting of incidents and near misses.

5.1. Limitations

This study included a relatively small sample size, and the difference in size between the two groups of participants was relatively large. Moreover, most of the students were studying at the same academic institution.

5.2. Summary

This research was conducted two years after the Israel Ministry of Health published guidelines regarding investigation. The findings have shown that an accepting and supportive approach that promotes learning has not become integrated among nursing students and among clinical instructors.

In order to achieve such integration, a dedicated training program for clinical instructors and nursing students should be developed for enhancing cooperation between these groups and the management in medical institutions. The objective of such a program would be to increase awareness regarding patient safety, expose the students and clinical instructors to the approaches and attitudes of the teaching institutions and the healthcare organizations – in order to improve patient safety. The findings of this study can be used to promote such a training program, which would lead to improved reporting of medical errors and near misses and increased quality of care.

5.3. Recommendations

Further research should examine the influence of such training programs on the reporting culture of students and clinical instructors. In addition, it is important to study the influence of additional sociodemographic factors and cultural background on attitudes towards patient safety, in order to enhance the training program and implement relevant guidelines as defined by the Ministry of Health.

Conflict of interest

There is no conflict of interest.

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Ethical approval

The study was approved by the Ethics Committee in the academic institution approved where the researchers lecture.

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