

Fear of making errors in young and old Italian nurses

Donatella Camerino¹, Paul Maurice Conway¹,
Madeleine Estryn-Béhar²

¹Department of Occupational Health, University of Milan, Milan, Italy
IRCCS Maggiore Hospital, Mangiagalli and Regina Elena Foundation, Milan, Italy

²Service central de Médecine du travail de l'AP-HP, Hôtel-Dieu, France

Keywords: fear of making errors, psychosocial factors, ageing, healthcare sector, Nurses' Early Exit Study

1. Introduction

In healthcare settings, age is a factor worth considering in relation to error prevention. The younger usually make mistakes for being less rule-conscious and more socially bold, while the older for being excessively reliant upon their previously acquired knowledge and also for their lower reaction times to contingent demands. Ilmarinen (1999) suggested that fear of making errors may increase with ageing, as the older workers may become less prompt to adapt to new demands, mostly in case they lack or loose control over their work tasks. However, also the opposite may be true, since job seniority (a factor highly correlated with age and experience) may serve as a protective factor against fear of making errors (Estryn-Béhar 2005).

Error incidence in healthcare is usually high even if not a broadly mentioned problem. Italy is considered as one of the best-behaving countries for efficiency of healthcare delivery (Avery 2002). However, a study conducted in 2002 by the University Consortium for Engineering in the Insurances (CINEAS, 2002), in collaboration with different me-

dical and nursing associations (FIASO, ANA-AO, ASSOMED and FIMMG), revealed that in Italy, among 8 million persons hospitalized each year, 320.000 (4%) are subjected to severe harms and consequences due to errors, with additional costs due to legal or insurance-related expenses and to increased length of stay, amounting to about 260 million euro expended by the healthcare system. Among errors, those exiting in death are between 14.000 and 50.000, with an estimated cost of about further 2.5 billion euro. There are also indirect costs such as impaired institution's social image, staff demotivation and worsened work organization, which may result in lower productivity and decreased quality of care. Insurance prizes are being continuously increased, though these are not sufficient to cover compensation costs. Patients become more and more aware and suspicious also because errors are amplified by media. In order to not only gather data on errors but also to provide support for effective intervention, risk management is intended to reduce the likelihood of errors or their negative impact (Reason 2000).

A nursing error, as distinct for example from a medical one, may be defined as a

Address for correspondence:

Donatella Camerino, Department of Occupational Health of University of Milan, Clinica del Lavoro "Luigi Devoto", via San Barnaba 8, 20122, Milan, Italy
e-mail: donatella.camerino@unimi.it

discipline-specific term that encompasses an unintended 'mishap' (e.g. involving slips, lapses, misjudgements, etc.) made by a nurse and where a nurse (as opposed to some other healthcare professional) is the one who is situated at the 'sharp end' of an event that adversely affected – or could have adversely affected – a patient's safety and quality of care or also caused an accident for the worker him/herself (Hemingway, Smith 1999). Most errors occurring in healthcare refer to failures related to medication errors (drug prescription and its transcription on the drug sheet, calculation of drug dilutions and dosages to be administered, fragmentation of tasks, i.e. drugs prepared and administered by different professionals), mistreatment, lack of adequate patient's surveillance, inappropriate clinical judgements, lack of intervention on the patient's behalf, failure to advocate for the patient's best interests or to question a doctor's inappropriate directives, lack of prevention and documentation errors (Benner et al. 2002). As nurse engages in providing nursing care, she/he runs the risk of 'doing something wrong'. This is because clinical judgment is 'acting as if' but without complete certainty. Most clinicians are technically competent and knowledgeable, but this is always circumscribed by uncertainty and emerging, sometimes unpredictable events. It is highly probable that all practising nurses had made at least one mistake during their career and had suffered both error-related distress and subsequent loss of confidence (Newsletter, 1996). Lack of adequate coping with errors may result in anxiety, depression and withdrawal reactions.

Latent errors may be defined as those errors lying dormant until the right set of circumstances occurs provoking the mistake. Latent errors are related to blaming check-up procedures operating at the workplace or to inadequate management decisions. Yet, cultural conceptions of errors persist that relate sources of errors to individuals' faults. The consequences of such a 'Perfectibility Model' and its errorless expectations may be both higher fear

of making mistakes and higher moral distress for the nurse perceiving him/herself as being responsible for the error. Moral distress resulting from self-attributing the cause of a compromised situation may increase individual sensitivity, that may prove helpful or harmful in future circumstances depending upon the presence of an effective error preventive system.

There is an emerging international consensus today that most human errors are resulting from a series of events or 'upstream' system processes, rather than of individuals 'at the sharp end' (the practice edge) doing the wrong things (Reason 2000). A 'system approach' (which takes as its basic premise that 'humans are fallible and errors are to be expected, even in the best organisations') does not seek to name, blame and shame. Rather it seeks to 'discern and learn' and to treat 'every defect as a treasure' because each one presents us with an opportunity to improve. Reason's position on this point is unequivocal: 'when an adverse event occurs, the important issue is not who blundered, but how and why the system defences failed' (Reason 2000). Among workplace conditions associated with error occurrence reported in the literature, the main are high workload, lacking or inadequate communication, unfavourable working time and emergency care settings.

Different tools have been devised to face error-related problems (such as 'adverse events reporting systems'). Some of them are aimed at detecting annual costs of medical malpractice while others are intended to continuously improve quality of care. However, these tools may bear some weaknesses. First of all, they are intended to report only errors which have already occurred and cannot be concealed, instead of detecting latent errors before they occur. Secondly, most of the times those reporting the errors are not given any feedback to boost prevention procedures. Lastly, it is widely known that the data reported represent a 'very modest estimate of the magnitude of the problem' (Kohn et al. 2000) and are more likely to be a 'gross underestimation' of the actual incidence of

preventable adverse events (Clark 2004), in particular when incidents are perceived to be 'not serious', unintentional and have not had any adverse outcome (Lawton, Parker 2002). Underreporting of errors may be related to the fact that nurses, like other workers, are often reluctant to report practice errors because of their 'fear of reprimand from those in authority' and the 'unwillingness to accept responsibility for errors in which they may merely have been a final player in a complex series of events' (Walker, Lowe 1998). Moreover, the nurse-patient fiduciary/trust relationship and also the good standing and reputation of the nursing profession as a whole may be seriously undermined (notably on account of the agreed ethical and professional practice standards of the profession). In addition, those who are the subject of a report are likely to find themselves vulnerable to increased surveillance, complaints, negligence claims, disciplinary action and a loss of respect among colleagues (Mulcahy, Rosenthal 1999). In cases where a practice error has resulted in a patient's death, practitioners may also be subjected to criminal prosecution for their mistake (Smetzer 1998). Likewise, those reporting the errors of others might be more liable to disapproval from colleagues and possibly exposed to bullying (Johnstone 2004). At the same time, organisations may find themselves being brought into disrepute and their services shunned (even by people needing emergency life-saving treatment) as a result of adverse media publicity surrounding practice error cases (Johnstone 2004).

While the literature focused more on fear of disciplinary actions, legal ramifications, and workplace discrimination as barriers to error reporting, fear of making mistake at work and its consequences are underresearched topics. Owing to the relevant incidence of errors in healthcare and the number of suits brought against nurses for malpractice, fear of making mistakes by nurses is to be expected and may be considered as a reliable parameter for detecting the existence of a potential risk for errors. Yet, a high inter-individual va-

riability may be expected due to both cultural and genetic reasons in the disposition towards the expectation of adverse outcomes (Furedi 1997).

2. Methods

This contribution is part of the wider European Nurses' Early Exit Study (NEXT), which investigated reasons and circumstances of premature exit from the nursing profession. Preliminary analyses showed that Italy was one of the countries under investigation bearing the highest fear of making errors at baseline after Poland and France (Tab. 1).

Accordingly, it was decided to delve into the causes and the consequences of fear of making errors in the Italian sample of registered nurses and also to take age-related differences into account. For the present study, a two wave one-year longitudinal design was used. Out of the initial 5504 valid cases, a total of 3329 Italian registered nurses were included in the analyses (attrition rate = 35%). In table 2, scales and variables adopted as predictors and outcomes are shown along with their definition, source and score range. Two kinds of analysis were performed. In the first, the one-year incidence of accidents, absenteeism, health and intent to leave the profession was evaluated in relation to fear of making errors at baseline. In the second analysis, a stepwise multiple linear regression model using the backward method was employed to identify those organizational and working conditions predicting fear of making errors in the ≤ 45 and >45 age groups.

3. Results

Prevalence of fear of making errors (Table 3) was found to be relevant among Italian nursing staff, particularly in female nurses under 45 years old employed in hospitals (38.8%) and male nurses over 45 years old employed in home care (38.9%). After adjustment for gender and age, higher fear of making errors was related to higher incidence of

Table 1. Means of fear of making errors (range 1–5) by NEXT countries.

Country	Baseline assessment			Follow-up assessment		
	N	mean	SD	N	mean	SD
Belgium	1492	2.86	0.81	1493	2.76	0.87
Germany	1572	2.72	0.87	1554	2.69	0.91
Finland	2564	2.68	0.83	2546	2.71	0.85
France	1177	3.29	1.03	1172	3.02	0.84
Italy	3273	3.18	1.06	3235	3.15	0.99
Poland	1731	3.31	1.11	1735	3.30	1.10
Slovakia	633	2.68	0.81	613	2.77	0.90
The Netherlands	1176	2.63	0.76	1170	2.56	0.75
All Group	13618	2.95	0.98	13518	2.91	0.96

self-diagnosed mental disorders one-year later (adjusted RR=1.86; 95% CI=1.42–2.43) and intention to leave nursing (adjusted RR=1.72; 95% CI=1.26–2.34). Multiple linear regressions revealed that, after controlling for gender, occupational position, type of institution and possibility to find another job as a nurse in the same region of employment, higher emotional demands and lower career reward in the younger ($\beta = 0.04$; $p < .05$ and $\beta = -0.10$; $p < .001$ respectively), and higher time pressure ($\beta = 0.10$; $p < .05$) in the older nurses were predictive of higher fear of making errors twelve months later.

4. Discussion

Those dealing with risk management are well aware that early identification of risk is key to preventing patient injuries, and it depends on maintaining a culture of trust, honesty, integrity, and open communication among patients and care providers. Also the International Council of Nurses strongly supports a system-wide approach, based on a philosophy of transparency and reporting – not on blaming and shaming the individual care provider – and incorporating measures addressing human and system factors in adverse events (ICN 2002). In a similar vein, in Italy the Health Ministry has included clinic risk management among the actions to be undertaken to support quality of care. Within such a context, the ministerial directorate of healthcare planning has set up the healthcare essential levels, the system ethical principles,

and the technical Commission on clinical risk, with the aim of studying prevalence and causes of clinical care errors, formulating general indications and identifying techniques for reducing and managing the problem.

Fear of making errors is not meant as a construct to replace the main research focus on those errors which have already occurred, yet it can be considered as a useful indicator for preventive assessment and promotion of supportive procedures against potential errors and malpractice leading to injuries, accidents, job strain and also to lowered quality of care provision.

Aging is not independent of other problems in the work environments. Even if implementing a specific aging prevention program is deemed unnecessary within a specific context, the implications that different organizational choices entail for aging staff are always worth considering, with attention paid also on whether these may prove more or less useful and effective contingent upon workers' characteristics. This study showed that fear of making errors may occur in contexts where the nurse feels that risks may develop into harm without at the same time being regularly supported by a team able to avoid and/or solve the problem. Fear of making error could also be considered predictive of mental discomfort and intention to leave the profession and may be triggered by inexperience and low support in career orientation in the younger, and by high time pressure in the older.

Extrinsic motivators such as career rewards may sustain the process of professional introjections, identification and integra-

Table 2. Scales and items used in the present study (from Hasselhorn H-M, Tackenberg, P, Mueller B, 2003, Working conditions and intent to leave the profession among nursing staff in Europe. Working Life Research Report 7. Stockholm: National Institute for Working Life).

Scale or item	Scale or item definition	Source	Range
Fear of making errors	The frequency with which a nurse feel worried about making a mistake during her/his job	NEXT	1=min fear of making errors 5=max fear of making errors
Predictors			
Time pressure	The extent to which a nurse lack time to accomplish task or has to work with high work paces	COPSOQ (Kristensen 2000)	1=max time pressure 5=min time pressure
Emotional demands	The extent to which a nurse has to deal with patients and human suffering	De Jonge et al. (1999)	1=max emot demands 5=min emot demands
Role conflict and ambiguity	The extent to which a nurse lacks sufficient information about tasks to be accomplished or has to do things not matched with professional role	NEXT	1=max role conf and amb 5=min role conf and amb
Decision latitude	The extent to which a nurse has autonomy in decision-making at work	NEXT	1=max dec lat 5=min dec lat
Interpersonal relationships	The extent to which a nurse have friendly and relaxed relations at his/her work place	NEXT	1=hostile and tense 5 = friendly and relaxed
Career reward	The extent to which a nurse has opportunity for advancement within an organization	ERI (Siegrist 1996)	1=max career rew 5=min career rew
Work/Family conflict	The extent to which work requests may cause difficulties in a nurse's management of family obligations	Netemeyer (1996)	1=max W/F conf 5=min W/F conf
Outcomes			
Thinking of quitting nursing	The frequency with which a nurse considers to leave his/her profession	NEXT	1=max think quit 5=min think quit
Health	Perceived health	COPSOQ (Kristensen 2000)	0=min health 100=max health
Absenteeism	Number of days absent from work during the past 12 months	WAI (Tuomi et al., 1998)	
Accidents	Whether a disease caused by an accident has been diagnosed and treated by oneself or by a physician.	WAI (Tuomi et al., 1998)	0=no 1=own diagnosis 2= yes, physician's diagnosis

tion of the younger nurses, whereas a reduction in time pressure can support older nurses' ability to be in control of their own job. Accordingly, age-related differences should be considered in designing workplace interventions aimed at preventing fear of making errors and their aftermath among nurses.

Acknowledgments

The NEXT Study was initiated by SALTSA (Swedish Joint Programme for Working Life Research in Europe) and financed by European Union within the 5th Framework Program (QLK6-CT-2001-00475).

Table 3. Prevalence of fear of making errors in the study sample.

Type of institution	Sex	Age	High fear	Low fear
Hospital	Female	≤ 45	38.8%	61.2%
		≥ 45	35.5%	64.5%
	Male	≤ 45	29.7%	70.3%
		≥ 45	32.5%	67.5%
Nursing home	Female	≤ 45	17.5%	82.5%
		≥ 45	23.1%	76.9%
	Male	≤ 45	25.0%	75.0%
		≥ 45	11.1%	88.9%
Home care	Female	≤ 45	25.0%	75.0%
		≥ 45	19.6%	80.4%
	Male	≤ 45	20.5%	79.5%
		≥ 45	38.9%	61.1%

References

- Avery G, 2002, Comparative efficiency of national health systems. *British Medical Journal*, 324, 7328, 5, 324–348.
- Benner P, Sheets V, Uris P, Malloch K, Schwed K, Jamison D, 2002, Individual, practice, and system causes of errors in nursing: a taxonomy. *Journal of Nursing Administration*, 32, 10, 509–523.
- Carayon P, Hundt A, Ayoub P, Gurses A, Alvarado C, 2003, Performance obstacles of health care providers. *Proceeding of the Eighth European Conference on Organizational Psychology and Health Care, October 8–11, Vienna, Austria*.
- Carayon, P, Gurses AP, Hundt AS, Ayoub P, & Alvarado CJ, 2005. Performance obstacles and facilitators of healthcare providers. Korunka C, Hoffmann P (eds.), *Change and Quality in Human Service Work*, 4. Publishers, Munchen.
- CINEAS, Zurich Consulting, 2002, Quando l'errore entra in ospedale. Risk management: perché sbagliando s'impari. *Le mappe del rischio, i costi, le soluzioni. Report*, 1–.
- Clark R, 2004, *Health care and notions of Risk*. Therapeutic Guidelines Ltd. Melbourne.
- DeMoss C, McGrail M, Haus E, Crain L, Asche SE, 2004, Health and Performance Factors in Health Care Shift Workers. *Journal of Occupational and Environmental Medicine*, 46, 1278–1281.
- Estryn-Béhar M, Le Nézet O, van der Heijden BMIJ, van der Schoot E, Ben-Brik E, Caillard JF, Hasselhorn H-M, & the NEXT-Study Group, 2005, Interaction between quality and human factors in health care. Factors linked to nurses' fears of making errors. Tartaglia R, Bagnara S, Bellandi T, Abolino S (eds.) *Healthcare Systems Ergonomics and Patient Safety. Proceedings of the International Conference HEPS, March 30–April 2, Florence, Italy*. Taylor & Francis, London, 31–35.

- Furedi F, 1997, *Culture of fear: Risk-taking and the morality of law expectation*. Cassel, London and Washington.
- Gaba DM, Howard SK, 2002, Fatigue among clinicians and the safety of patients. *The New England Journal of Medicine*, 347, 16, 1249–1255.
- Gurses A P, and Carayon P, 2004, Work obstacles and facilitators, workload, quality of working life, and quality of care among intensive care nurses. *Wisconsin Quality and Safety Forum*, October 18-19, Eau Claire, Wisconsin.
- Gurses AP, 2005, Performance obstacles and facilitators, workload, quality of working life and quality and safety of care among intensive care nurses. *Dissertation*. University of Wisconsin-Madison, Madison.
- Hemingway MA, Smith CS, 1999, Organizational climate and occupational stressors as predictors of withdrawal behaviours and injuries in nurses. *Journal of Occupational and Organizational Psychology*, 72, 285–299.
- Ilmarinen J, 1999, *Ageing workers in the European Union*. Finnish Institute of Occupational Health, Helsinki.
- International Council of Nurses, 2002, *Position Statement: Patient Safety*. ICN, Geneva.
- Johnstone M, 2004, Patient safety, ethics and whistle blowing: a nursing response to the events at the Campbelltown and Camden Hospitals. *Australian Health Review*, 28, 1, 13–19.
- Lawton R, Parker D, 2002, Barriers to incident reporting in a health care system. *Quality & Safety in Health Care*, 11, 1, 15–18.
- Mulcahy L, Rosenthal M, 1999, Beyond blaming and perfection: a multi-dimensional approach to medical mishaps. [in:] Rosenthal M, Mulcahy L, Lloyd-Bostock S (eds.) *Medical Mishaps: Pieces of the Puzzle*. Open University Press, Buckingham, 3–19.
- Newsletter, 1996, Hearings: Nurse F, Nurse G and Nurse H. *Nexus*, 2,2, 6.
- Reason J, 2000, Human error: models and management. *British Medical Journal*, 320, 7237, 768–770.
- Rosenthal M, Mulcahy L, Lloyd-Bostock S (eds.), *Medical Mishaps: Pieces of the Puzzle*. Open University Press, Buckingham, 59–73.
- Sexton A, Chan Connie, Elliot M, Stuart J, Jayasuriya, Crookes P, 2004, Nursing Handovers: do we really need them? *Journal of Nursing Management*, 12, 37–42.
- Smetzer J, 1998, Lesson from Colorado: beyond blaming individuals. *Nursing Management*, 29, 6, 49–51.
- Walker S, Lowe M, 1998, Nurses' views on reporting medication incidents. *International Journal of Nursing Practice*, 4, 2, 97–102.