The perception of health care risk: patients, health care staff and society

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Introduction: The Nuovo Zingarelli, dictionary of the Italian language, defines risk as "the possibility of harmful or negative consequences following not always predictable circumstances"¹. A statistical-epidemiological type of definition is far removed from the social and psychological conception that the population attributes to the risk of harm, which is related to interior processes and emotional reactions. Information on risks interacts with knowledge, personal values and beliefs to produce a subjective expression that is perception.

Materials and methods. Two years after instituting the Hospital Quality and Risk Management Unit at S. Giovanni Battista Molinette Hospital (Turin, Italy) it became clear that it was necessary to determine the perception of health care risk among nursing staff. Therefore, nursing teams from eight sub-departmental units in six departments were invited to participate in an assessment project.

Results. The project was undertaken by four nursing teams composed of four head nurses (project representatives) and 45 professional nurses. The aims of the project were understood by all four groups; three participated with interest, one only in part. Three groups considered that it would be useful to continue the project, while the other group did not discuss this point.

Conclusions. The project on the perception of health care risk by nursing staff revealed that mistaken identification of the patient, errors during the administration of treatment and poor communication among colleagues and with doctors and patients were the risks of error perceived as most important by nurses. Heavy work loads, staff shortages, technical and structural problems, and gaps in professional knowledge were identified as the factors related to the occurrence of adverse events. These data differed from management's perception because no incident report forms had ever been received from these nursing teams.

Keywords: risk management, risk assessment, hospital incident reporting.

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The statistical-epidemiological definition is far removed from the social and psychological conception that the community attributes to the risk of harm. This starts from the moment that the possibility of a negative event is discussed, before the experts can process its statistics and epidemiology, and is related to internal processes and emotional reactions. Information on risk interacts with knowledge, personal values and beliefs to produce a subjective expression that is nothing other than perception.

The patient must be made an active and knowledgeable part of the health care process: he or she must be informed about what is happening, what has been done, what is being done and what it is intended will be done, all supported by the background and reasons for the choices. The health care staff must ensure productive communication with the patient before any diagnostic or therapeutic act. This must be based on clear, transparent and consistent messages in order to enable the calmest evaluation of the problem. Once an adverse event of a certain severity occurs, any lack of information will be filled by the media, which tend to privilege a narrative aspect of the news. The media’s presentation of risk is based on dichotomies that are hard to reconcile: the conflict between skills and emotions, and the difference between technical/scientific language and general language. The presentation of risk in daily life is also endowed with social and political relevance. Indeed, in the process of communication it is difficult, and often impossible, to distinguish between observations, facts and opinion.

Although iatrogenic adverse events are a significant risk for hospitalised patients, it is difficult and expensive to discover them. The risks that are of the greatest concern to patients are clinical errors, of diagnosis and treatment, by doctors and nurses. There is less concern about identification of the patient, the correct site of surgery and compliance with ordinary measures of hygiene. These minor concerns are, however, perceived as the most serious risks by the nursing and medical staff.

**Materials and Methods**

Two years after the establishment of the Hospital Quality and Risk Management (HQRM) unit of S. Giovanni Battista Molinette Hospital of Turin, it became clear that a greater spread of the culture of clinical risk was needed at a working level, with direct involvement of the nurses engaged every day in health care activities. In fact, although the literature reports that nurses are sensitive to the issue of clinical risk, in our hospital only 23% of the notifications made using the incident reporting system (a method of spontaneous and anonymous reporting introduced in 2003) came from the nursing staff.

It was, therefore, decided to set up a specific project to determine the perception of clinical-health care risk among nursing staff. The aims of the project and the related working definitions are listed in table I.

**Table I - Aims and working definitions of the project**

<table>
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<tr>
<th>Aim</th>
<th>Definition</th>
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<tr>
<td>Inform – educate</td>
<td>Inform all staff about the possibility of reporting adverse events by using the incident reporting form; spread the concept of health care risk starting from actual work situations</td>
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<tr>
<td>Participation from the base to the apex</td>
<td>Foster participation in the management and prevention of risk by all people active in the processes of assisting and caring for patients</td>
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<tr>
<td>Know the risks perceived by the staff in the hospital, rather than those emerging from Management’s data</td>
<td>The main risks in the health care setting are described in the literature. This study is intended to determine the particular risks present in hospital, as perceived by the staff</td>
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<tr>
<td>Produce a project that can be put into act in the individual working contexts to reduce health care risks</td>
<td>Having identified a priority risk (adverse event) within the sub-departmental unit, the causal factors must be identified and targeted, feasible, corrective actions must be defined</td>
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<tr>
<td>Identify professional figures within the sub-departmental unit who are sensitive to the problem and willing to collaborate.</td>
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<tr>
<td>Evaluate the congruency between the perceived and reported risks</td>
<td>Compare health care risks perceived by the workers with data collected by General and Medical Direction and the HQRM unit (notifications, legal and financial reports, incident reporting).</td>
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The project, which was carried out in the period from January to July 2007 was divided into the following phases:

1) Analysis of the data in the hands of the General and Medical Direction, HQRM unit and the Public Relations Office.
2) Design of the project by the HQRM unit.
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3) Identification of the sub-departmental units – Appointment of the project's representatives.
4) Definition of the methods and working instruments.
5) Training - education of the representatives - illustration of the task.
6) Creation of working groups in the sub-departmental units by the project's representatives.
7) Conduction of the task.
8) Consignment of the work with proposed corrective actions.
9) Analysis of the data by the HQRM unit.
10) Introduction of corrective actions aimed at reducing the clinical risk.

Six Departments were invited to participate in the project. Within these Departments there were four nursing teams in medical sub-departmental units (three wards and one day hospital) and four in surgical sub-departmental units (three wards and one operating theatre); eight head nurses were appointed as representatives of the project.

The head nurses were informed about the project and received the necessary documentation (Table II). They acted as facilitators, organising two or more meetings with the nurses in their sub-departmental unit to illustrate the aims and contents of the project and setting up the working groups. This initial stage was followed by an operative phase in which the working groups filled in a specific form (Form A, Table III) in order to:

1) identify the moments potentially at risk in the daily nursing activities;
2) identify errors or near misses considered important by the nursing staff because of their frequency and/or severity;
3) identify organisational, technical, structural, human and professional factors that have contributed to the occurrence of adverse events or near miss errors;
4) identify instruments that already exist and are in use to limit the risk (procedures, protocols, guidelines...);
5) detail corrective actions that could be used in the working reality and develop an improvement project;

From among the unfavourable events identified, the groups were asked to choose the one they considered most significant and fill in the hospital incident reporting form. The forms were delivered by the representatives of the project to the person in charge of the HQRM unit for analysis and subsequent collegiate presentation.

Results

Of the representatives of the eight nursing teams invited to participate in the project, one declined because involved in other initiatives; two representatives participated in the preparatory phase but did not complete the project because of lack of collaboration by the nursing team. One representative and his group carried out the project but asked for an extension of the deadline for delivering the forms.

The project was completed by four nursing teams working in the medical field: three in sub-departmental units and one in the Day Hospital. Collectively, the teams comprised four head nurses (project representatives), 45 professional nurses and 27 ancillary healthcare staff. The working groups were composed of four professional nurses in three cases and by nine nurses in the other case. The aims of the task were understood by all four groups; three participated with interest, one only in part. Three groups considered it useful to continue the project, while one group did not discuss this point. Incident reporting forms had not previously been compiled by any of the groups.

The responses to form A are presented in tables IV and V.

Discussion

Various studies have reported how the risks of adverse events in hospitalised patients are perceived by both doctors and the patients themselves. The risks that cause most concern to patients are diagnostic and therapeutic errors by doctors and nurses related to wrong tests or procedures; however, the perception of poor communication among staff and between staff and patients, structural and equipment problems and the possibility of accidental falls are also considered harmful. Less concern is expressed about the correct identification of the
Table III - Form A

Sub-departmental Unit __________________________________

Members of the working group

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<tr>
<th>Surname/Name</th>
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What are the moments of greatest risk of error in your daily nursing activities?

What errors or near misses are considered important by the nursing staff because of their frequency and/or severity?

What organisational, technical, structural, human or professional factors have contributed to the occurrence of errors or near misses?

What instruments to reduce the risk of errors (procedures – protocols – guidelines…) are already in use?

Identify an error or nearly missed error and describe the corrective actions that could be applied in your work setting

Comments

patient, the right site of a surgical intervention, and the observance of standard measures of hygiene, such as hand-washing. It is, however, these minor concerns that are considered to be the most serious risks by the medical and nursing staff.

Although iatrogenic adverse events are a significant risk for hospitalised patients, discovering such events is difficult and expensive. An anonymous system of incident reporting by clinicians was found to be a promising method for identifying medical errors and lowered standards of quality of care. Inpatients can themselves contribute to identifying adverse events, including those not picked up.
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Table IV - Replies to form A

What are the moments of greatest risk of error in your daily nursing activities?

**Group 1** Identification of the patient (patient confused or unconscious)
- Transcription of treatments (doses and times)
- Continuous interruptions during the handover

**Group 2** Preparation of treatments, because of lack of written medical prescription
- Preparation of test-tubes for collecting blood samples (identification of the patient, incorrect labelling, wrong test-tube)

**Group 3** Before, during and after the administration of oral or intravenous treatment
- Handover between the shifts
- Illegible medical prescription
- Nursing history and care plan not defined

**Group 4** The administration of treatment because of mistaken identification of patients (extra beds added to the ward)

What errors or near misses are considered important by the nursing staff because of their frequency and/or severity?

**Group 1** Error in filling in the data for blood grouping

**Group 2** Technique of taking samples (identification of the patient, incorrect labelling, wrong test-tube)

**Group 3** Poor knowledge of drugs
- Disturbances and interruptions during the administration of treatment
- Treatment not given because treatment plan not updated
- Disturbances from external events, with loss of information
- Insufficient evaluation of the patient's clinical evolution

**Group 4** Drugs administered incorrectly

What organisational, technical, structural, human or professional factors have contributed to the occurrence of errors or near misses?

**Group 1** Staff shortages
- Increased working hours and stress
- Too many medical teams in the same ward (six directors)
- Difficulty in the handover
- Irregular shifts (on-call, mutual assistance)
- Excessive and poorly organised turnover

**Group 2** Patient missing appointment
- Doctor's forgetfulness (relational malpractice)
- Increase of working activity in certain periods of the day
- Continuous shut-downs of the computer because of technical problems
- Considerable delay of the patient

**Group 3** Heavy work load concentrated in some periods of the day
- Lack of appropriate exchange of information between medical and nursing teams
- Insufficient human resources
- Some protocols missing or not updated

**Group 4** Staff shortages
- Overcrowding of the wards
- Inexperience
- Obsolete equipment
- Structural inadequacies
- Lack of communication and transcription
As far as concerns the transfusion of blood derivatives, significant progress has been made in reducing the risk of transmitting viral infections. The greatest risk now comes from unexpected adverse reactions and transfusion errors. Nevertheless, media exposure and more or less conscious fears, lead patients to think that the most frequent risk of a transfusion is a viral infection (above all, HIV), which is actually very much rarer than acute or delayed complications such as non-haemolytic febrile reactions (frequent), anaphylactic reactions (rare, but potentially fatal), delayed haemolytic reactions, transfusion-associated graft-vs-host disease or bacterial contamination, which is one of the most important causes of transfusion-related morbidity and mortality.

Methods of communication between the doctor and patient with regards to consent to treatments, interventions or procedures and transfusion of blood-derivatives have been extensively studied. The communication seems to have different effects depending on the patients' age, gender, social and cultural background and the procedure in question. Information in which aspects of the risk of a procedure/therapy predominate stimulates a negative reaction in the patient. On the other hand, expressing only the favourable aspects, besides being unethical and legally dangerous, can create perplexity and diffidence because the information is assimilated with contrasting knowledge previously acquired by the patient. Balanced information, with a positive "framing" is probably the best strategy.

An experimental treatment is accepted more readily if the outcomes are presented as reduction of relative risk, rather than as reduction in absolute risk or as number of patients needed to treat to prevent an event (NNT). A surgical intervention is better accepted if the outcomes are presented in terms of survival rather than mortality. Less obvious results are obtained when discussing life-styles or vaccinations.

However, with regards to the side effects of drugs and complications of surgical interventions, it is better to use not only qualitative concepts (favourable/unfavourable, acceptable/unacceptable, etc.), but also the harm/benefit ratio of the treatment expressed as a numerical value. In general, the most methodologically "correct" measures are the "number of patients to treat to observe a favourable effect" (NNT) or, as proposed by Sackett, the "number of patients to treat to observe an adverse event" (number needed to harm – NNH).

The sensation that patients have of being poorly involved in the management of their disease is an important problem. Even when satisfied with the quality of care received during an admission, the sensation that there have been "gaps" in information leads patients to review their experience in the light of what they were not told and how
much this omission could have affected their state of health. A swift and unplanned discharge can be perceived as a risk when insufficient time is given to therapeutic education” and when the ways to contact the health care staff in the case of doubts or need are not defined. Good communication during the admission, providing the patient with detailed information (also in written form), and the creation of a bridge between the hospital and the community with regards to post-discharge care, can reduce problems and help the patient's empowerment.

In 2006 a study was carried out in S. Giovanni Battista Hospital in Turin to verify the completeness of information given by health care staff to patients being discharged home who needed to continue with treatment; this appraisal was conducted through semi-structured telephone interviews. It was found that the ‘practical’ indications (booking post-discharge appointments and examinations, telephone numbers to use in the case of needs, discharge letters) were provided correctly and fully; in contrast, the patients' involvement in care management and their therapeutic education still appeared to be unsatisfactory. The consequence was that patients felt uncertain both during the time spent in hospital and after discharge home.

Two solutions were proposed to overcome the problems highlighted by the research: therapeutic education for the patients (given by the more senior and expert nurses) and the establishment of connections with the general practitioners and community services (sending e-mails when patients are admitted to hospital, frequent telephone contacts with the ward doctors and general practitioner visits to the ward itself).

In a survey conducted in 2006 (Rapellino, unpublished data) in which general practitioners were interviewed about the adverse events they feared most, first place was given to error/delay in diagnosis, in particular acute vascular accidents and neoplasms; this was followed by allergies, drug interactions and the fear of poor valid communication with the patient.

The project on the perception of clinical and health care risks by nursing staff showed that mistaken identification of the patient, errors during the administration of therapy and poor communication between colleagues and with doctors and patients were the risks of errors perceived as a priority by the nurses. Heavy work loads, staff shortages, technical and structural problems and gaps in professional knowledge were identified as factors related to the occurrence of adverse events. These findings were unexpected with respect to the Management's perception, in part because these nursing teams had never previously filled in incident reporting forms.

Conclusions
This project, aimed at raising awareness of the risk of errors in nursing staff, had three results. The initial self-analysis conducted by the working groups led to proactive behaviour with regards to the management of risk connected with professional activities. The project stimulated proposals on ways to identify and prevent errors within specific contexts. Finally, it promoted the use of hospital instruments aimed at limiting errors (adverse event report forms, clinical audits).

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