



## EVALUATION ABOUT CLINICAL RISK KNOWLEDGE IN ITALIAN MEDICINE STUDENTS: HOW TO IMPLEMENT THE CONCEPT OF HEALTHCARE QUALITY AMONG FUTURE DOCTORS.

### Medicine

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### ABSTRACT

The aim of the study is to offer to all the future health providers an opportunity of education in the specific field of patients' safety and clinical risk management.

The study develops a complete picture of the knowledge of a whole class of future physicians about clinical risk theme, involved 1228 students of a medicine course.

We elaborated a survey (18 explorative questions) that evaluated the levels about basic concepts in clinical risk management and investigated the future doctors' opinion about the use of these instruments. The results emphasize a deep delay compared to international standards about basic notions.

We propose as future target both monitoring the notional trend about investigated themes of the survey and sensitizing the future health operators and decision makers about basic clinical risk concepts. Moreover, we try to give the timing of fundamental steps to improve the awareness and the management of Clinical Risk.

### KEYWORDS

clinical risk management; health care students training; clinical risk knowledge.

### INTRODUCTION

Errors are fundamentally unavoidable aspects in our life. In every health system the birth of circumstances that make mistakes easier are possible. As a consequence, it is fundamental to create the conditions that reduce both the possibility of mistake and the consequences of a mistake when it occurs.<sup>1</sup>

Surely, the so-called Clinical Risk Management, which means the probability that a patient may suffer from discomfort or damage that came from medical care during hospitalization,<sup>2</sup> represents, nowadays, the first means in preventing errors in health systems, characterizing the quality of care and becoming the aim of the sanitary organizations. It is a shared opinion that training health personnel, and especially the future decision makers of sanitary systems, in Management of Clinical Risk, may reduce problems.<sup>3</sup>

For many years, we have tried to apply common safety programs to the health field, but it is now clear that in this field, human factor prevails. It is necessary to think of specific models to control the clinical risk, with the aim of preventing errors and of reducing its consequences, when it happens, thus characterizing the risk, identifying the needs and integrating collection and evaluation of facts.<sup>4</sup> These models must always consider the human behavior, which may be modified by improving knowledge and training, and above all by creating a new approach to the concept of mistake. Disclosure and communication in the sanitary field must be considered as a source of learning.<sup>5</sup> With this as a target, it is necessary to promote the culture of learning from error and granting a systemic and systematic approach to Manage the risk, as an instrument to assure the patient's safety and, indirectly, reduce the costs.

This requires the adoption of appropriate instruments for the revelation and analysis of risks, which are monitored through time, with the aim of creating organizational solutions, based on health operators' insights and competences.<sup>6</sup>

Control instruments of clinical risk management try to reduce to a minimum the risks for the patient by creating theoretical-practical competencies which derive from a continuous, individual and collective learning which is useful to reach a balance between provided health services and costs.<sup>7</sup>

In this survey, we tried to create an instrument which would improve the training of future health providers and decision makers, taking a

picture of the levels of knowledge among medicine students about sanitary risk. At the same time, we have promote the theme of "good health", responding to one of the main aims of growth of "Europe 2020 - Europe's Growth Strategy".<sup>8</sup>

Unfortunately, as for all the fields subjected to methodological and conceptual innovation, the management and the study of clinical risk is surrounded by skepticism from health operators, too. However, nowadays, the awareness of the importance of clinical risk management is growing also in the sanitary field, and decisional processes are supported and made easier by specific educational programs.<sup>9</sup>

Enforcing professional competences is an essential value, as education is an essential instrument to assure efficiency and safety in health care. A number of studies have already proved the importance of these educational trainings addressed to future health providers. It has also shown that these educational trainings improve the participants' confidence in their ability to perform in specific clinical rules.<sup>10</sup>

The aim of this study is to offer to all the future health providers, independently from their role, their assistential field and their setting, an opportunity of education in the specific field of patients' safety and clinical risk management.

A number of authors suggested to identify the strengths and weakness of the sanitary organization, evaluating the effects of organizational changes, improving the staff communication, establishing the development targets and the coherent interventions.<sup>11</sup> Coherently with these theories, in this study we have tried to understand the knowledge level and the essential elements of the clinical risk, among the students of medicine; monitor trends in knowledge; teach future health providers about the signaling, controlling and using preventive instruments, which are present but not widely used and exploited. We also tried to create a synergic notional feedback among the students and to improve the culture according to which error is also a source of based evidence education.

### MATERIAL AND METHODS

As there are deep failings in literature about both students of medicine's educational extra-curricular experience and the direct educational experience in the hospitals,<sup>12</sup> the Apulian Unit for Clinical risk Management thought up a survey, useful as an investigation instrument, to invert this notional and cultural trend.

This survey was given to all students of the classes of the courses of Medicine and Surgery of the University of Bari, Italy.

18 explorative questions (appendix) were elaborated, grouped in a single survey and given to the students, that voluntarily answered our survey, in an anonymous form. The first part of this survey (from question 1 to question 11) evaluated the levels about basic concepts in clinical risk management; on the contrary, the second part of the survey (12-18 questions) investigated the future doctors' opinion about the use of these instruments. Questions were elaborated concerning the definitions of clinical risk terms available in literature and provided from the Italian health department.

## RESULTS

The sample was made by 1228 students of Medicine and Surgery course of the University of Bari, that means 62,02% of all students.

At first, students were asked about their knowledge of the concept of "patient safety" and to explain what they knew about it.

Patient safety is a factor determining the quality of the cares, as a consequence it represents an absolute priority for National Health Systems that are developing effective interventions, helped by meta-analyses for an overall improvement of care quality with the final target of providing effective and safe cares,<sup>13</sup> through the adoption of medical procedures addressed to patients protection of patients.<sup>14</sup>

Surprisingly it emerged that 74,27% of the sample doesn't know this concept.

Among 25,73% of students who thought they knew, 6,35% indicated wrong, and not coherent to the concept of patient safety, answers. Only 19,38% indicated answers which could be considered coherent to this concept.

After that, we investigated the students' knowledge about theoretical and practical definition of "clinical risk". We used the Health minister definition of "clinical risk" as a parameter: that means the probability that a patient suffers an involuntary damage or discomfort, linked to health care, which provokes an extension of hospitalization, a worsening of health or even death.<sup>15,16</sup>

Among 12,70% of students who thought to be informed about the meaning of "clinical risk", 8,14% indicated wrong options, not coherent to the Health Minister definition. Only 4,56% of the sample was really informed about this issue. Investigating the knowledge about the definition of clinical risk, 87,30% did not know what it is.

The third investigated aspect was about the knowledge of the students about the concept of "error in medicine", asking them what they thought about.

We sadly observed that 47,56% of the sample did not answer to this simple question. Differently from previous questions, only 0,81% of students who gave an answer (52,44%) was wrong. 51,63% of students gave a correct answer. Analyzing the answer, we saw that 41,77% indicated some active errors, while 9,86% indicated types of latent errors.

After studying the level of knowledge about these general concepts, we tried to evaluate the notions about clinical risk sectorial concepts. We investigated the acquaintance with three types of frequent events in the analyses of corrective processes of clinical risk management: "adverse event", "sentinel event" and "near miss".

The survey revealed that 76,38% of students in Medicine never heard about "adverse event" in medicine. We asked the source of information to those (23,62%) who had heard talking about this. 9,04% of 1228 students heard about it through television, 8,31% learned this concept from Physicians, 3,91% studied this concept during some courses, 0,90% met the concept on the internet and 0,73% heard the definition from nurses and other students.

As far as the definition of "sentinel event" is concerned, the picture is merciless. Only 1,95% knows this concept, 9,12 answered wrongly and 88,93% stated they did not know what a sentinel event is.

The answers about the definition of "Near miss" were a little bit more

comforting. 22,72% answered correctly, 3,18% answered wrongly and 74,10% did not know this concept.

Afterwards we investigated the importance given to the concept of "patients safety" from future physicians, asking them if most errors with a damage for the patient, were linked to human or planning errors. It is almost evident that the patient centrality and the positive culture of the error must represent a starting point for a new idea of "safe hospital" and a number of sources in literature supported the idea that safety levels in the organization may be improved by errors; but two key factors prevent this educational process: difficulty in receiving and analyzing information and the "guilty culture".<sup>17,18</sup> In punitive organizations, the presence of a blame culture is a quite insurmountable obstacle because it helps errors concealment and prevent reporting anomalies.<sup>19</sup>

Monitoring the importance of patients' safety with a scale from 1 to 10, students gave a very high middle-score of 9,44 to this element.

Surprisingly, 814 students out of 1228 (66,29% of the sample) blamed organizational causes, such as structural shortcomings and planification\organizational deficits, for most mistakes. Instead, 414 students (33,71% of the sample) blamed human errors, such as low ability, oversights, practical execution, as main cause of errors in medicine.

We also tried to understand if the future physicians class would accept the introduction of an "anonymous report system" of adverse event, as prevention system for possible future events. Moreover, we tried to understand if anonymity could cause a greater use compared to a "non anonymous report system". The spread of a report about a structured system of incident is based on the awareness of professionals and organization that reporting an event may produce an opportunity of improvement.<sup>20</sup>

This requires the respect of some fundamental requirements: first of all, health professionals must be sure that data wouldn't be used with the aim of blaming human error, but of improving care quality. Secondly, the error analyses must focus on the organizational and management factors which might contribute to the event, without emphasizing only professional behaviors.

The major part of the sample (90,15%), would use an anonymous report system in order to register adverse events, to prevent them in the future. This percentage would be lower if this system were not anonymous. We also asked the students if, in their opinion, "safe hospitals" (hospitals with a low rate of errors\accidents\adverse events) exist. Moreover, we evaluated the impact and the consequent "importance" that five common causes of error, with consequences for the patient, have.

Finally, we tried to understand which were the most common causes of error made by health operators, in the opinion of students of medicine.

More than the half part (66,37%) of interviewed students think that "safe hospitals" exist, whereas only 33,63% thinks that structures with a low rate of errors, accidents, adverse events do not exist.

Using a scale of values from 1 to 10, it emerged that future physicians look at the creation of a positive learning environment as a main key factor for patient safety (average value of 8,63), and after this, with an average value of 8,54%, at promoting staff work and anticipating sudden events. Also the respect for human limits is seen as an important element for patient safety with an average value of 8,10%. Finally, an average score of 7,71 was attributed to the leadership responsibility.

As far as the most frequent causes of error in medicine, 55,13% indicated the presence of inadequate buildings\instruments as a cause of error; 52,77% linked errors to inadequate communication, while 626 students, that means 50,98% of the sample, identified the reason of errors in an overworking. Among other causes, there are economic limits (37,95%), inadequate supervision (36,40%), absent\inadequate guide lines\procedures\recommendations (32%).

Luckly, only 388 students (31,60%) pointed out stressing working environment as an error cause, whereas 30,37% indicated inadequate competence and experience, followed by frequent changes in working organization according to 19,38% of the sample.

## DISCUSSION

Our study, the first in scientific literature which develops a complete picture of the knowledge of a whole class of future physicians about clinical risk theme, involved 1228 students of a medicine and surgery course.

The results, which are not reassuring, emphasize a deep delay compared to international standards about basic notions. Only 19,38% of the sample correctly answered to the explorative questions about the concept of "patient safety".

Only 56 out of 1228 students (4,56%) know the theoretical-practical definition of clinical risk and 51,63% correctly answered to the question about the comprehension of the concept of "error in medicine".

Analyzing the knowledge of some fundamental concepts of Clinical Risk, we detected that only 23,62% of the sample had already heard about "adverse event" (only 3,91% during its studies). 24 future physicians know what a sentinel event is, while 22,72% knows the concept of "near miss".

After quantifying the importance of patient safety for future health providers which were interviewed, we found that 66,29% of students identify in planification errors the main cause of errors causing a damage to patients; 33,71% to human errors. However, 815 students (66,37%) think that law rate error hospitals, seen as "safer hospitals", exist.

Moreover, from the interviews, it comes out that a serene learning working environment, not characterized by guilty attitude, could represent an important factor with a good relapse on patient safety, whereas overworking, communication problems, inadequate structures and instruments would be the most frequent causes of errors with a damage to the patients.

Finally, evaluating the importance and the possible adoption of an adverse event report system, we saw that 1107 students (90,15%) would use an anonymous report system, while the percentage would be lower (68,89%) if anonymity were not granted.

## CONCLUSIONS

Medicine's Faculty might and should bridge the notional gaps in medical students' learning programs, providing them with the medical principles which would determine the reduction of the health disparity in communities making it necessary to assimilate these concepts,<sup>21</sup> which are in strong expansion in the modern health, throughout the period of study by future physicians. Thereby, they would arrive in the working field with an appreciable notional background in Clinical Risk theme.

Though this survey which was carried out in an Italian College with a very high number of students, we propose as future target both monitoring the notional trend about investigated themes of the survey and sensitizing the future health operators and decision makers about basic clinical risk concepts.

Being aware that this "innovative" matter surely needs time to be perceived and assimilated in Italy as a fundamental step of the educational program of every future physician, it is necessary to create an effective training plan addressed to both present and future health operators, thus avoiding that these themes be confined to the spontaneous interest of some willing and passionate cultist of the matter.

Medicine graduate and Specialization programs in medicine should consider the clinical risk management among the matters which must be taught and studied. Only in this way, we will be able to distance ourselves from a political-administrative management of roles about Clinical Risk, going toward the development of competences addressed to the whole health staff that, thanks to this attitude, might adequately work for patient care and safety.

After this step, we could think about the figures, the timing and the way to teach this matter and only at the end, focus on the political-economical administration of the Clinical Risk Management Units.

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