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Research Article

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What Ibero-American hospitals do when things go wrong? A cross-sectional international study

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Abstract

Objective: To know what hospital managers and safety leaders in Ibero-American countries are doing to respond effectively to the occurrence of adverse events (AEs) with serious consequences for patients.
Design: Cross-sectional international study.
Setting: Public and private hospitals in Ibero-American countries (Argentina, Brazil, Chile, Colombia, Mexico, Peru, Portugal and Spain).
Participants: A convenience sample of hospital managers and safety leaders from eight Ibero-American countries. A minimum of 25 managers/leaders from each country were surveyed.
Interventions: A selection of 37 actions for the effective management of AEs was explored. These were related to the safety culture, existence of a crisis plan, communication and transparency processes with the patients and their families, attention to second victims and institutional communication.

Main Outcome Measure: Degree of implementation of the actions studied.
Results: A total of 190 managers/leaders from 126 (66.3%) public hospitals and 64 (33.7%) private hospitals participated. Reporting systems, in-depth analysis of incidents and non-punitive approaches were the most implemented interventions, while patient information and care for second victims after an AE were the least frequent interventions.
Conclusions: The majority of these hospitals have not protocolized how to act after an AE. For this reason, it is urgent to develop and apply a strategic action plan to respond to this imperative safety challenge. This is the first study to identify areas of work and future research questions in Ibero-American countries.

Key words: patient safety, adverse event, open disclosure, second victims, hospital

Introduction

System failures and human errors occur in all health systems and at all levels of care [1, 2]. Reducing their numbers and their social and economic impacts are some of the challenges faced by the management teams of healthcare institutions [3]. Results are better when managers are involved in the achievement of safety objectives [4].

Resilience ability

Improving the reliability of professionals, procedures and equipment is one of the objectives of actions to enhance patient safety. Efforts to achieve the correct implementation of safe practices are essential, but they are insufficient. For this reason, we have sought, firstly, to learn from failures and errors, thanks to the analysis of reported safety incidents. Secondly, to carry out an adequate management of the risks inherent to health intervention involving both events those that cause harm to patients (AEs), and those that have been on the verge of causing it (quasi-errors) [5]. However, these safety policies cannot succeed in environments where there is a fear of talking about one's own mistakes.

Aftermatch of safety events

In these environments, faults and errors are hidden and concealed, and consequently, patient safety is put at risk. It is more difficult for patients suffering from AEs to receive information about what happened and for their right to fair compensation to be respected. On the other hand, professionals involved in safety incidents suffered by patients (and their families) often find it difficult to discuss what happened with their colleagues and middle-managers, question their own professional capacity and ultimately make wrong decisions more easily [6].

Managers role

Since no hospital escapes from the occurrence of safety incidents, it seems reasonable to be prepared to act after an incident, particularly in the most serious cases. The role of managers is crucial in putting in place actions to ensure an adequate response when a severe AE occurs [7]. Different national agencies and institutions and international agencies have developed guidelines on the approach to severe AEs in order to provide guidance and support to health organizations [8–13]. However, the availability of these tools does not imply their effective implementation and operation.

In this study, hospital managers and safety leaders from Ibero-American countries described what they were doing to respond effectively after the occurrence of an AE with severe consequences for patients.

Methods

A cross-sectional, multicentre, observational study was conducted in a non-random selection of public and private hospitals in Argentina, Brazil, Colombia, Chile, Mexico, Peru, Portugal and Spain.

A severe AE was defined [14] as an unexpected incident that causes (or is a risk for causing) the death of the patient or a serious physical or psychological injury (loss of limb or function), which requires a surgical reintervention or a new invasive treatment or that unnecessarily prolongs the patient's stay in the hospital.

The Research Commission of the Department of Health of Alicante-Sant Joan considered this study, concluding that the object of the study and the methodology applied did not require an adequacy assessment.

Participants

Medical doctors, nurses and healthcare managers who were performing as senior management representatives (CEO, head of medical or nursing board), head of quality and patient-safety departments, or leaders of hospital safety committees were invited to respond.

The appropriate sample size to estimate the total score mean value for each dimension with a maximum tolerable error margin of 0.17 points and a 95% confidence level was determined in 200 subjects. This involved inviting a minimum of 25 managers per country.

Each country sought to respect the proportion of hospitals in the public and private systems. We intentionally sought to include hospitals of different sizes, considering three categories: less than 300 beds, between 300 and 500 beds, and more than 500 beds. Up to four reminders were made to complete the sample. There was no compensation for this voluntary, anonymous participation.

Materials

Participants answered a survey of 37 items. This survey was grouped into five dimensions (safety culture, crisis plan, open disclosure, support for second victim and public communication). Moreover, it explored safety culture and institutional policy, patient care, proactive attitude to avoid the recurrence of AEs, support to the professional and care team, activation of resources to give an adequate response, communication of what happened to the patient or his/her family, detailed analysis of the incident, and protection of the reputation of professionals and institutions. This survey was based on the one used by Mira *et al*. [15]. Each item asked about the degree of implementation of certain interventions that have been identified in the literature as appropriate. A Likert-type response scale of five levels (from 1 to 5) was used to assess the level of implementation of each intervention: "Does not exist", "Scarce", "Medium", "High" and "Very high". An intervention was considered implanted when it

was assessed with four or more points and not implanted with two points or less. The score for each dimension was calculated as the sum of the scores for each of the items in that dimension. The percentage that this score supposed on the maximum score in each dimension was calculated to allow comparisons between dimensions in the level of achievement reached. Four sociodemographic variables were also included: professional profile, years in the position, size of the hospital and the health sector in which it worked. In the elaboration of the items, a uniform cultural adaptation was sought, eliminating any expression that could lead to misinterpretations. We reviewed the wording of the questions, one by one, and their possible semantic implications in each of the countries participating in the study. Sixteen professionals (five Spanish, five Chilean, five Argentinean and one Peruvian) participated in this pilot comprehension test. They assessed the degree of comprehension of each question on a Likert scale of 5 points and, depending on the case, specified alternative wording. They were also asked if they identified any other intervention that should be included in the questionnaire. In the case of Brazil and Portugal, the translation–retranslation procedure was applied to ensure the equivalence of the Spanish and Portuguese versions.

Field study

Each country had a reference researcher who coordinated the study schedule with the other researchers. This researcher was responsible for issuing invitations to respond to participants and sending reminder messages to encourage response. A website was available for replying (http://calite-revista.umh.es/delphis/) between July 2018 and October 2019. During the study, an e-mail address was available to resolve the incidents and doubts of the participants.

Statistical analysis

Frequencies and descriptive statistics were calculated for each item and dimension. The implementation percentage of each dimension was obtained from the global direct average score and the maximum possible score in each dimension according to the number of items that integrated it. Non-parametric tests for independent samples were used to identify possible differences in the degree of implementation of the interventions, specifically the U-Mann–Whitney test was used for comparisons by continent and Kruskal–Wallis H-test for comparisons by country and hospital size. Responses were dichotomized by grouping values below and above 3 to identify interventions with a lower and higher degree of implementation, respectively.

Results

A total of 190 managers and patient-safety leaders from the eight countries responded. Four countries had less than 25 participants: Peru, Chile, Colombia and Mexico. A total number of 126 (66.3%) participants belonged to public hospitals and 102 (53.7%) to hospitals with 300 or more beds (Table 1).

The set of interventions grouped around building a proactive safety culture (52.3 out of 80, 65.4% over the maximum score that could be obtained (MS)) or having a plan on what to do after a severe AE (13.3 out of 20, 66.4% MS) obtained higher scores compared to the set of interventions grouped in dimensions related to the protocol of what information and care the patient who has been a victim of a severe AE should receive (29.2 out of 50, 58.5% MS), how to carry out care for the professionals involved in these AEs (second victims) (10.4 out of 20, 51.9% MS) and how to carry out institutional communication after a severe AE (7.9 out of 15, 52.7% MS). Results in each dimension and in each country are presented in Supplementary Table S1). Supplementary Tables S2–S6 show the detail of response frequencies in each item for each of the five dimensions.

Table 1 Description of the sample

Descriptive and categories	$N = 190$	%
Country		
Argentina	29	15.3
Brazil	25	13.2
Chile	20	10.5
Colombia	22	11.6
Mexico	21	11.1
Peru	10	5.3
Portugal	37	19.5
Spain	26	13.7
Hospital		
Public	126	66.3
Private	64	33.7
Professional profile		
Management	54	28.4
Member of the Safety Commission, responsible for Safety	136	71.6
Job experience		
Less than 2 years	33	17.4
Between 2 and 5 years	57	30.0
More than 5 years	100	52.6
Hospital size		
Less than 300 beds	88	46.3
Between 300 and 500 beds	56	29.5
More than 500 beds	46	24.2

American vs. Iberian countries

The degree of implementation of these interventions grouped by dimensions differed among hospitals grouped by participating countries (Supplementary Table S1). European countries scored higher in the dimensions analyzed (Table 2).

Hospital size

The participants from the hospitals with the largest number of beds reflected a higher level of implementation of the interventions identified in the guidelines and recommendations with their assessments (Table 3). However, this effect differed among countries. For example, while the largest hospitals in Argentina and Mexico scored highest in the "safety culture" dimension, in Spain and Chile, the highest scores corresponded to the smallest hospitals ($P = 0.001$). In the "Crisis plan" dimension, the largest Mexican hospitals scored the best ($P < 0.001$). In the "Open disclosure" dimension, the largest Argentinean and Mexican hospitals achieved the best scores, while in Chile and Spain, they were the smallest hospitals ($P = 0.046$). In the "support for second victims" dimension, the largest Argentinean and Mexican hospitals again obtained the highest scores, although in all cases, the implementation of these measures was low ($P = 0.007$).

Public vs. private hospitals

No differences in scores were identified between public and private sector hospitals. It was also not based on years of experience in the informant's job.

Table 2 Questionnaire scores grouped by American vs. Iberian countries

Dimension	Continent	*N*	Mean	SD	*P*-value
Safety culture (maximum score 80)	America	127	49.4	13.4	<0.001
	Europe	63	58.4	10.7	
Crisis plan (maximum score 20)	America	127	12.4	4.2	<0.001
	Europe	63	15.1	3.3	
Open disclosure (maximum score 50)	America	127	27.8	10.8	0.003
	Europe	63	32.1	8.8	
Support for second victims (maximum score 20)	America	127	9.6	4.4	<0.001
	Europe	63	12.1	4.1	
Public communication (maximum score 15)	America	127	7.5	3.2	0.013
	Europe	63	8.7	3.0	

The U Mann–Whitney test was used.

Table 3 Scores based on hospital size

Dimension	Number of beds	*N*	Mean	SD	95% CI		*P*-value
Safety culture (maximum score 80)	<300	88	49.1	13.2	46.4	51.9	0.001
	300–500	56	52.9	13.0	49.5	56.4	
	>500	46	57.8	12.1	54.2	61.4	
Crisis plan (maximum score 20)	<300	88	12.1	4.0	11.3	13.0	0.000
	300–500	56	13.4	4.6	12.3	14.6	
	>500	46	15.3	3.2	14.3	16.2	
Open disclosure (maximum score 50)	<300	88	27.6	10.0	25.5	29.7	0.046
	300–500	56	29.4	11.2	26.4	32.4	
	>500	46	32.2	9.6	29.4	35.1	
Support for second victims (maximum score 20)	<300	88	9.4	4.0	8.6	10.3	0.007
	300–500	56	10.6	4.8	9.3	11.9	
	>500	46	11.9	4.5	10.6	13.3	
Public communication (maximum score 15)	<300	88	7.4	3.0	6.7	8.0	0.52
	300–500	56	8.0	3.6	7.1	9.0	
	>500	46	8.8	3.1	7.9	9.7	

The Kruskal-Wallis H test was used.

Implanted interventions

Supplementary Table S7 shows the number of interventions of each dimension implemented, according to the information provided by managers and security officers, and the number of those other interventions that were considered far from being implemented. The interventions that were considered implemented (scores ≥4) according to the information provided by the participants were (Supplementary Table S8): implementation and promotion of incident reporting systems, fostering a non-punitive culture, and root cause or equivalent technical analysis carried out when a serious AE occurs. Conversely, non-implemented interventions (scores ≤2) included actions to help the professionals most directly involved in severe AEs who are emotionally affected by these incidents and having incident information that can be provided by the patient who has suffered a severe AE. Other actions rarely implemented were to have a procedure to assign the patient fair compensation after suffering a serious AE and to have identified what training the professionals of the centre may need in order to be able to face (with guarantees) the information on the patients who have suffered a serious AE.

The most frequently implanted interventions from each country were to promote a non-punitive culture (hospitals from Chile, Portugal and Spain), conduct route cause analyses after serious incidents (hospitals from Argentina, Colombia, Portugal and Spain) and report systems (hospitals from Portugal and Spain). In contrast, the interventions that have not been implanted in a majority of hospitals from each country were as follows: patient can participate in RCA (hospitals from Argentina, Colombia, Mexico, Portugal and Spain), fair compensation system in case of serious AE (hospitals from Argentina, Colombia, Chile and Peru), absence of professional training to inform the patient after an AE (hospitals from Argentina, Brazil and Chile), absence of second victim protocols (hospitals from Argentina and Peru) and safety culture analysis (hospitals from Peru) (Supplementary Table S9).

Discussion

As far as we know, this is the first study in the region that addresses the analysis of the safety incidents as part of the quality culture, information and fair compensation to patients who have suffered a

serious AE or how to address the problems of second victims. The results have highlighted that there is huge room for improvement regarding second and third victims in these countries.

These results suggest that interventions related to respect for patients' rights, support for second victims and those aimed at preserving the hospital's reputation following the occurrence of severe AEs have a low level of implementation. Additionally, in the Ibero-American region, interventions have been implemented more systematically to encourage the reporting of safety incidents and the analysis of incidents with the most serious consequences, in line with international recommendations on patient safety [16].

Compared to other studies in the region [14], the results follow a similar trend. While interventions to promote a proactive culture of safety are more consolidated, those referring to the informational and emotional care of patients who have suffered a severe AE, to the emotional needs of the professionals involved in the incidents, or to the care of the content and channels for disseminating information about what happened in the institution continue to be underdeveloped. The results indicate that European hospitals have a higher degree of implementation of interventions considered appropriate to address the challenge of patient safety, with the exception of interventions grouped under the public communication dimension. However, differences in hospital size should be considered when interpreting these findings. It has not been possible to establish a pattern between American and European hospitals, and depending on which intervention we analyze, the degree of implementation may be greater in one country or another, which probably reflects the diversity of the safety culture of existing hospitals. These findings also suggest that the main intervention to prevent potential risks is based on the implementation of reporting systems, although a greater effort should be made to introduce a productive risk policy in most hospitals, mainly in a majority of the American hospitals involved in this study.

These results draw a scenario in which while promoting incident reporting and in-deep analysis to avoid future occurrences, patients are not encouraged to be informed so that they have the opportunity to receive fair compensation after suffering a severe AE. Additionally, if we consider the results of other studies that have shown that, at some point in their professional careers, most professionals will have made a medical error [17–20]. It means that, in most of these hospitals, this reality is ignored and no action is planned to alleviate the consequences that failures and errors have on the quality of care, despite having proposals on how to deal with this phenomenon for some time [21–23].

These data contrast with those found in other countries that have made a greater effort to replace the punitive culture after the error. For example, the number of hospitals that do have support programs for second victims is notably higher in the USA [24] (74%) and the Netherlands [6] (30%). However, they tend to coincide with the results of the study carried out in Spain in which around 70% of patients who suffered an AE did not receive adequate information about the incident or to obtain fair compensation. Additionally, more than 80% of the professionals involved in these incidents did not receive any type of attention (neither psychological nor legal). Although in all cases there are opportunities for improvement (in the 2008 study by White *et al*. [21], only 30% of managers were committed to support programs for second victims, and in van Gerven *et al*. [6], 12% did not know how to identify the reference person for the aid programme), in the countries analyzed, the road ahead is greater.

Probably, for the same reason, it is no coincidence that the hospitals in this study are located in countries where there are no no-fault compensation policies. However, sorry laws [25] seem to contribute to a greater involvement of professionals in safety [26, 27]. This fact probably justifies some of the results obtained and represents one of the challenges that should probably be addressed as a priority. In this direction, it is likely that changes will be required not only at the attitudinal level but also at the legislative level, to break the current circle between error and guilt, introducing organizational and legislative changes that favour learning from mistakes and mistakes, while respecting patients' rights [28].

Limitations

The scores were obtained from the voluntary response of managers and safety officers of a non-random selection of hospitals. The number of participants from Peru was lower than expected, and the number of participants and the recruitment method did not guarantee the representativeness of the results for the Ibero-American countries as a whole. This is a first study that explores what initiatives have been carried out. There has been no verification of the degree of implementation of each of the interventions described. Although this is an exploratory study, it provides a description of the challenges faced by the health authorities and the top management of hospitals in these countries in order to transform the culture of safety and increase patient safety. Based on this approach, new studies can be proposed on more specific aspects of interest for patient-safety policies in these countries.

Although the general trend is that larger hospitals have achieved a wider implementation of the interventions analyzed, the number of hospitals that have participated in this study in each country should therefore be interpreted with caution, modulating these results. These results could overestimate the implementation of the interventions, since they could have been answered only by those hospital managers who have already specified actions to be carried out.

Implications

As we know from other studies [29–34], the frequency with which safety incidents occur in these countries, we now know that the interventions carried out do not include attending to the emotional and information needs of patients who have suffered an AE or the attention to the emotional needs of the first-line professionals involved in such incidents. It seems advisable that national safety plans in Ibero-America be revised to include intervention lines and organizational and legal changes to facilitate normalization of speaking of one's own failures and errors as a necessary step to increase patient safety. The search for those responsible in a punitive environment makes it difficult to prevent new AEs, because there is a tendency to hide what is happening. At the same time, it is necessary to advance in the establishment of a culture of fair compensation for patients who have suffered a serious AE, compensation that should be accompanied by greater transparency about safety incidents and measures to avoid them in the future.

Supplementary material

Supplementary material is available at *INTQHC Journal* online.

Conflict of interest

None declared.

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