

Accidental falls in hospitalized children: an analysis of the vulnerabilities linked to the presence of caregivers

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Key words

Falls in hospitalized children • Parent distraction • Information • Education

Summary

Introduction. This study stemmed from the data gathered by a research conducted by the coordinator of the Department of Healthcare Services and a group of nurses involved in a research on accidental falls in hospitalized children at the "G. Gaslini" Children's Hospital and Scientific Research Institute in Genoa, Italy. The first retrospective study evaluated the accidental falls in hospitalized children referred to the three-year period 2003-2006, while the second perspective study, referred to the trimester March-May 2007, found that the main cause of falls in children was parent's distraction.

Methods. The method adopted in the first phase of our study was a proactive risk analysis (The Basics of Healthcare Failure Mode and Effect Analysis), identified in the first place by the VA National Centre for Patient Safety and applied to the "Child and

parent hospital admission process". This proactive risk analysis has proven to be very effective in preventing the risk of accidental falls in hospitalized children through effective communication and educational interventions. The second phase of our study consisted of two Focus Groups for accidental traumatic events.

Results. The analysis of the results of the study showed how effective communication is instrumental, not only to have a better awareness of the children and their parents during their stay in hospital, but also to implement educational sessions on prevention to reduce the risk of accidental traumatic events.

Conclusions. The present study contributes to improve safety and the quality of care by motivating nurses to keep their attention high on falls in hospitalized children, by monitoring and the development of new risk assessment tools.

Introduction

This paper is the result of two previous studies conducted at the Scientific Research and Children's Hospital (IRCCS) "G. Gaslini" by the coordinator of the Department for Healthcare Services and a group of nurses involved in the research. The first retrospective study evaluated the accidental falls in hospitalized children referred to the three-year period 2003-2006, while the second perspective study, referred to the trimester March-May 2007, found that the main cause of falls in children was parent's distraction.

The above-mentioned studies showed that the risk assessment of accidental falls at the "G. Gaslini" Hospital, on a scale measuring the rate of probability (expressed in number of errors/events per 100 admissions) was equal to 0.3%-7%, which meant that falls occurred "occasionally".

To test the relationship between the dependent variable "fall of a child in the hospital", and the independent variable "parent's stress", we chose the "Inverted-U Theory" [1] as our conceptual model that looks at the impact of an individual's positive and negative stress on his/her level of performance. According to the "Inverted-U Theory" an optimal level of performance is achieved when individuals are able to effectively and positively

cope with the stressful events they experience, but if these events increase, individuals reduce their level of performance. In our study, the individual's level of performance was represented by the parents' level of attention, that if reduced would lead to distraction [2, 3].

Similarly Sandi et al. [4], whose study was also based on the Inverted-U Theory, measured the impact of stress on the ability to acquire and remember new information, and they confirmed that a certain grade of stress can have a positive effect on the level of attention and concentration and on the ability to acquire and remember new information, but they declared that if stress persists over time the level of performance decreases. Therefore the information on how to prevent the risk of falls provided to parents during the admission could prove to be ineffective due to the parent's emotional stress linked to this phase, and consequently increase the chances that their children may accidentally fall during hospitalisation.

On the basis of the data collected through our Focus Groups, the parent's level of physiological activity was characterized by the following emotional stimuli: worry, fear, anxiety linked to the uncertainty of the prognosis of the child, the perception of helplessness, the degree of adaptation to the new environment, situations imposed and different from those found within the family and parting from the beloved. The persistence of these

stimuli could deteriorate performance and therefore the ability to concentrate and ultimately diminish the level of attention.

In this case, the provision of patient and family centred care – with a special focus on the relational issues and effective communication strategies – could help parents cope with their emotional stimuli, improve their well being and consequently also their level of attention and ability to identify and avoid accidents.

The review of the literature that informed the conduction of the present study, was also based on the retrieval of a paper [5] – resulting from a research conducted on a representative sample of hospitalized children (aged 3 to 5 years) and visitors coming to hospital – showing that in 82.8% of the cases “falls” occurred in the presence of parents and the location where the fall most frequently occurred was in the ward bedroom.

The same paper showed that the risk measurement scales for falls in adults (The Morse Fall Scale) were not effective in paediatrics. Therefore, the paper proposed a tool for the assessment of falls in children, including not just indicators of the mental state, histories of previous falls, age, compromised ambulation, but also the codification and implementation of informative and educational interventions for hospitalised children and their parents.

This is why, in the current study, we tested out a method that allowed to analyse the parent’s need for information and education.

The review of the literature [6] also guided our attention on caregivers, not just as “causes” of falls in children, but also as a valid resource to counter this phenomenon.

Materials and methods

The purpose of our study was identified by starting from the issue of “parent distraction” and became concrete through the needs analysis and measuring the parent’s perception of the risk of traumatic events in hospital.

The review of the literature, illustrated in the background, showed on one hand the possible vulnerabilities of the parent, consequential to emotional stimuli that could be considered to be the cause of their distraction; and on the other hand, the need and the importance of involving the parent by means of informative and educational interventions, so that parents can become a resource in the prevention of falls in hospitalised children.

The present study, conducted between February and October 2008, therefore aimed at analysing the welcoming process of children and their parents to the hospital, judged as the most significant moment for the needs assessment.

The most appropriate and consistent methods to achieve this aim were: a proactive analysis of all the various steps of the welcoming process of the children and their parents and two Focus Groups conducted in parallel sessions, one for the parents and one for the nurses.

The proactive analysis showed how effective communication, upon admission, can positively influence the prevention of accidental traumatic events. The Focus

Groups allowed the hospitalised children’s parents to express their needs, sensations, emotions and vulnerabilities, as well as their perceptions of the risks of falling. The Focus Groups also allowed nurses to improve the available communication tools and methods, to minimize or reduce risks.

In brief, the method presented in our study consisted of two phases:

- A proactive analysis of the risks that could be linked to the admission stage involving the emotional activation of the caregiver: “The stage of the child’s and the parent’s admission to the paediatric hospital”.
- Analysis of the perception of the “parent’s distraction”.

The tool that allowed to identify the contents and the activities specifically required for each sub-process of the hospital admission phase of both the child and the parent was the “admission and nursing assessment card”, which is still used today at the “G. Gaslini” Hospital to document this process.

THE STUDY PHASES

First phase

The “Admission process of the child and the parent to the G. Gaslini Hospital” was identified as the moment when nurses collected data on the child, his/her family conditions, their necessities, their healthcare needs, including the risk assessment of accidental falls [7].

Afterwards, the main process was divided into seven sub-processes, as illustrated in the flowchart (Fig. 1).

METHODS USED TO ANALYSE THE DATA

The method adopted in the first phase of our study to collect and analyse data (The Basics of Healthcare Failure Mode and Effect Analysis) was identified in the first place by the VA National Centre for Patient Safety [8].

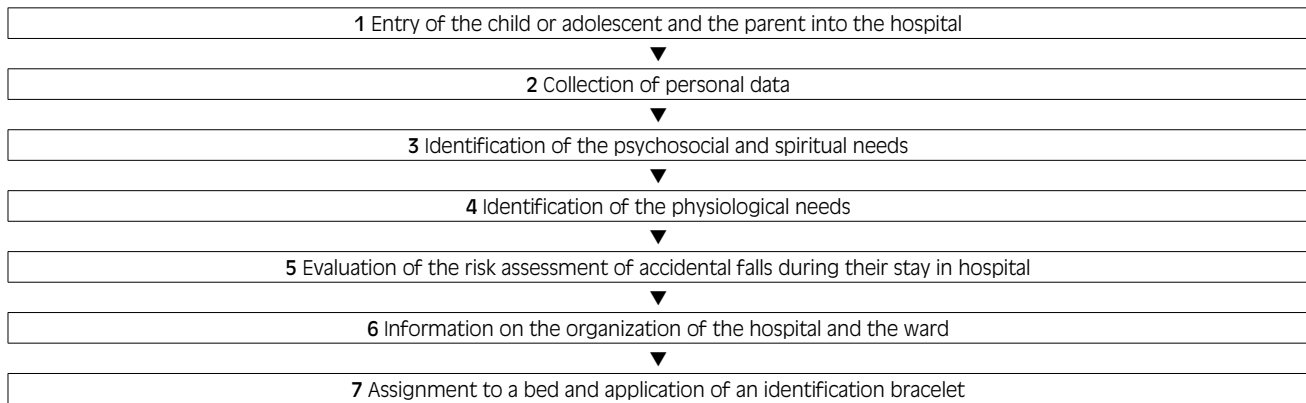
Results

The method and the tools we used allowed to accurately analyse each of the seven subprocesses, thus showing how effective oral and written communication can reduce or avoid potential risks of accidents in hospitalised children.

In particular, of the seven subprocesses, four (the ones codified with the numbers 3, 5, 6 and 7 commented below) highlight the modalities, the causes and the consequential effects or harm linked to the risk of accidental traumatic events.

Sub-process n. 3 identified the children’s psychosocial and spiritual needs and allowed to obtain and analyse information on the possible inadequacy of the family or alteration of the parent’s role.

Sub-process n. 5 focused on the assessment and prevention of the risk of accidental falls. In this phase, nurses assess risk on the basis of the following criteria: child’s pathology, age, level of ambulatory autonomy and drug therapy. Nurses also prevented this risk by giving parents a leaflet with colour illustrations on the most common risks for children during

Tab. I. Flowchart of the "Admission process of the child and the caregiver to the G. Gaslini Hospital".

their stay in hospital. If a nurse did not make a correct assessment of the risk or did not give the parent the leaflet this would have increased the level of risk.

Sub-process n. 6 stressed the importance of having nurses provide patients with clear and complete information, so that if necessary they can correctly and immediately identify the health professionals and the services required. In fact, incomplete or omission of information could oblige parents to leave their child alone in order to seek what they need.

Sub-process n. 7 showed how the provision of effective information to the parent whilst assigning the of the bed was determining to avoid the risk of accidental falls. In this phase, nurses provide parents information on how to properly store their baggage in the wardrobe and avoid untidiness because this could cause falls. Nurses also explained to parents how to use the call bell when necessary, so that they would not leave the child alone during critical moments. Incomplete or omission of information would increase the likelihood of accidental falls in hospitalised children.

Dedicating more time to dialogue in a relaxing setting, so that the health professionals could communicate more effectively with the caregiver parents, facilitated clarification and support, and favoured an active listening experience that increased the level of attention and the quality of communication.

The critical analysis of the outcomes led to the implementation of a pilot study, which through the Focus Group method caregiver parents and nurses got involved in making the most of the resources available and thus benefitted from suggestions and solutions to prevent accidents for hospitalized children.

This highlighted the nurses' level of responsibility while both the child and his/her parent were hospitalised, by being able to choose key information that would allow to take the best decisions when planning the healthcare process, care continuum and prevention.

SECOND PHASE

A qualitative analysis allowed to investigate the specific activities of the "Admission process of the child and the caregiver to the hospital", and identify any risks, potential errors and consequent harm with the view of avoid-

ing the risk of accidental falls [5, 8, 9]. Moreover, the analysis allowed to focus on the parent's role as a significant resource for the hospitalized child.

In order to involve the parties concerned – not only to value their contribution, but also to obtain the best solutions or suggestions from this research on the "distraction" phenomenon – a qualitative experimental research was conducted, in the form of a pilot study, that adopted the Focus Group method involving caregivers and nurses.

THE SIZE OF THE SAMPLES USED IN THE FOCUS GROUPS

The size of the sample was chosen according to our institutional guidelines and the Joint Commission International (JCI) standards [4], which ensure high quality care based on treatment safety and efficacy, as well as priority monitoring of the healthcare areas that expose patients to higher risks.

Two Focus Groups were conducted in parallel sessions of two hours each. Each Focus Group involved six health professionals and six parents from the medical wards, because a previous study conducted in our hospital between March-May 2007 had found that 70.6% of the accidents occurred precisely in this area.

INCLUSION CRITERIA FOR THE PARENTS

In our study we included only parents staying in hospital for at least 3 days to assist their children in the medical ward and willing to participate in the study. Parents who had no previous experience of admission to hospital jointly with their children were excluded from the study.

INCLUSION CRITERIA FOR THE HEALTH PROFESSIONALS (NURSES)

In our study we included the head nurses of medical wards, who had a working experience of at least five years and willing to take part in the study on accidental falls in hospitalised children.

SURVEY TOOLS

In order to collect our data we used the following tools:

- an anonymous data card to collect data on the purpose of the Focus Group and on the caregiver parents, such as their gender, age and education, the

names of their family members, the age and gender of the hospitalized child and any previous admissions to hospital;

- an anonymous data card was filled in by the nurses themselves to collect data on their age and their years and areas of working experience;
- a survey card, for each Focus Group, consisting of closed-ended questionnaire outlined the structure of the interview and facilitated discussion among participants;
- Audio recording allowed to remember exactly what the participants said at the Focus Groups.

METHODS USED TO ANALYSE THE DATA

At the end of the Focus Groups the cards were counted, transcribed and sorted out into categories according to the topics, observations and suggestions stemming from the participants’ discussions and according to the way the survey was conducted. The notes were then cross-checked with the audio recordings (Tab. I).

After analysing the data we had gathered from the Focus Group involving parents, we found that the qualitative aspect of the nurse’s communication with the parent was considered to be positive and effective for its timeliness and competence. Also nurses found that communication with the children and their parents was effective because of its clarity, simplicity, completeness, timeliness, feedback, transparency and documentary evidence. According to the nurses’ opinion, the abovementioned communicative characteristics could have a positive impact on the level of the parents attention and consequently on the prevention of accidental falls in hospitalised children. Independently from the efficacy of communication, it was significant and instrumental to discover that parents reduced their level of attention because they perceived the hospital as being a safe and protected place and by showing a great deal of trust in nurses.

Both the nurses and the parents declared that psychophysical health could have a strong impact on the state of well being and on the level of attention. With regard to this, from the Focus Group with the nurses it emerged that the parents’ emotional burden, worrying for their child’s health and often also being away from their beloved ones (husband, children, relatives, friends) could have a negative impact on the level of attention and consequently also on the risk of accidents.

Also the Focus Groups with the parents showed how uncertainty around their children’s disease, the need to adapt to unusual fixed situations that undermined their parenting role, staying away from their beloved ones and worrying for the children who remain at home, are all elements that produce strong emotional stimuli which generate anxiousness, fear and therefore stress.

When parents were asked to express their needs, they tended to put themselves aside and shift their attention onto the needs of their sick children. In general, the need to receive the best cure and care, being close to their children and monitoring the course of the disease represented their priority needs. From the insight gained through the Focus Groups, we came to the conclusion that caregiver parents were extremely vulnerable.

Conclusion

The results obtained from the analysis of the *Hospital Admission Process for Children and their Parents* allowed to have a general overview of the phenomenon of falls in hospitalised children in relation to the parent’s performance, underlining the needs of both the hospitalised children and their parents.

The active involvement of the parents upon admission and during nursing assessment, as well as generating satisfaction, facilitated the recognition of the citizen’s right to be empowered to play an active role in improving the quality of care, and actively influence changed from an organisational and procedural point of view.

The first phase of the study, including the analysis of the process, offered the opportunity to show how useful it was to identify the needs of both the children and their parents, not only to plan customised care, but also for an effective prevention of falls. In particular, we found that inadequacy and uneasiness of the family, and therefore the alteration of the parenting role, diminished the efficacy of communication, lowered the level of attention with a negative impact on the safety of the hospitalised child.

This showed how a timely request for support was necessary (i.e. by involving the social services) to ensure a more effective communication, which was found to be instrumental to better understand the needs of both the children and their parents, and to implement educational interventions on prevention.

Tab. II. A comparison of the key findings between the two Focus Groups (Parent/Nurse).

<p>Needs met. Trust in the hospital and health workers. Perception of the hospital as a safe and protected place with subsequent reduction of the level of attention. Willingness to meet the caregivers’ needs. Qualitatively effective communication with nurses. Effective communication with the caregivers, but little time is available and the location is not always suitable. There is the awareness that effective communication with caregivers can reduce their level of distraction. Possible causes of distraction: worries, anxiety, stress, necessity to adapt to a new situation. Possible causes of distraction: worries, caregivers’ lack of awareness of the risk of accidental falls. Awareness of the consequences of the caregiver’s psychophysical condition and distraction on the hospitalized child.</p>
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The second phase of the study, when the Focus Groups were conducted, provided more insight into the factors and the stress-generating emotional stimuli that could interfere with risk prevention or negatively influence the level of parents' attention. The analysis of the results obtained from both of the Focus Groups underlined the importance of effective communication, in terms of meeting the needs and preventing risks and also helped to identify concrete proposals to improve the safety of care also by considering the parent's emotional stress.

Our findings allowed us to draw the conclusion that falls represented a constant threat for hospitalised children, therefore as well as supporting and monitoring effective communication, it could be useful to put up posters illustrating the risk factors not just in the wards, where they were already found, but also in other places, such as in the rooms where the patients stayed and in the living rooms.

Moreover, since the number of hospitalised foreign children is constantly growing, it would be useful to translate the information booklets on risk prevention into different languages. This would not just increase the level of safety, but also facilitate social integration.

As well as allowing us to collect data on the possible causes that lower the level of attention and suggestions on how to improve and provide safer care, the Focus Groups gave parents the opportunity to play an active

role in dealing with an issue that involved them directly, and therefore feel appreciated and satisfied. On the other hand, Focus Groups gave nurses the opportunity to enhance and integrate teamwork and feel more motivated in improving the quality of care.

The limits of our study were the difficulty in enrolling a statistically significant number of parents and nurses in the Focus Groups. In addition to this there are not many studies about parents' stress in the context of a paediatric hospital, both in Italy and internationally. So, it would be interesting if other nursing researchers could monitor falls in hospitalised children and their causes and compare their findings with the ones we obtained. This would allow to draw up guidelines and design interventions aiming at improving the humanisation of admission and care, with a special focus on the parent's needs and therefore reduce the emotional stress linked to admission.

This study, could help improve healthcare, so that nurses may:

- maintain a high level of attention on the risk indicators of falls and monitor them;
- pay attention to the parents' needs and emotional status;
- effectively communicate and relate with the parents to increase performance in terms of enhanced levels of attention.

References

- [1] Hardy L, Fazey J. *The inverted-U hypothesis: a catastrophe for sport psychology*. Paper presented at the meeting of the North American Society for the Psychology of Sport and Physical Activity, Vancouver, BC, 1987.
- [2] Razmus I, Wilson D, Smith R, et al. *Falls in hospitalized children*. *Pediatr Nurs* 2006;32:568-72.
- [3] Agran PF, Anderson C, Winn D, et al. *Rates of pediatric injuries by 3-month intervals for children 0 to 3 years of age*. *Pediatrics* 2003;111:e683-92.
- [4] Sandi C, Pinelo-Nava MT. *Stress and memory: behavioral effects and neurobiological mechanisms*. *Neural Plast* 2007;2007:78970.
- [5] Morse JM, Prowse MD, Morrow N, et al. *A retrospective analysis of patient falls*. *Can J Public Health* 1985;76:116-8.
- [6] Jeske L, Kolmer W, Muth M, et al. *Partnering with patients and families in designing visual cues to prevent falls in hospitalized elders*. *J Nurs Care Qual* 2006;21:236-41.
- [7] *Manuale Joint Commission International Accreditation, Standard Joint Commission International per l'accreditamento degli ospedali, terza edizione, traduzione ufficiale a cura di Pro.ge.a S.r.l., Edizioni Libreria Bocca, in vigore da gennaio 2008.*
- [8] *The basic of healthcare failure mode and effect analysis*. NCPS VA National Center for Patient Safety, August 2001.

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