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Experience of healthcare professionals at the Makiso General Reference Hospital on nursing-related accidents

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Abstract

Introduction: In our hospitals, nursing-related accidents are frequent. It is not uncommon for minor incidents and near misses to occur before a serious accident occurs. The main aims of this study are to explore the experience of healthcare professionals of nursing-related accidents; to determine what to do about nursing-related accidents; and to analyze the attitudes of healthcare professionals to nursing-related accidents.

Methods: We conducted a qualitative, phenomenological study based on free, face-to-face interviews. It involved 3 care providers working at the Makiso General Referral Hospital from March 2 to 31, 2024.

Results: In terms of experience, respondents identified risk factors, managing emotions during the accident and the consequences of a nursing-related accident. In terms of what to do in the event of a care-related accident, the subjects identified teamwork to prevent care-related accidents, taking precautions before administering care and ensuring patient safety. Finally, with regard to the attitude of nursing staff to accidents attributable to care, respondents expressed their views on reassuring patients that their health would be restored in the event of an accident attributable to nursing care, identifying problems linked to the accident and ways of preventing accidents attributable to care.

Conclusion: To prevent nursing-related accidents, it is necessary to put into practice preventive measures that should be taken to reduce the frequency and severity of accidents attributable to nursing care. Nurses should regularly undergo medical training to prevent nursing-related accidents

Keywords: Experience; Nursing personnel; Accidents; Nursing care

1. Introduction

Patient safety is a major priority for all professionals. Nurses around the world have a major role to play in improving patient safety. If each professional has a duty to ensure that their practice does not cause harm, care is therefore increasingly provided by teams [1].

Every step of patient care carries some potential for errors and patient safety risks. In most studies investigating prescribing errors, it is shown that the most common factors associated with errors relate to the administration of the medication. Three types of errors are reported: error by omission (a prescribed medication is not administered), the incorrect dosage (unit dose, dilution, methods and route of administration), finally errors of nature, the medication administered is not that prescribed [2,3].

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According to Saintoyant et al [4], when it comes to care-related risks, it is estimated that only 5% of care-related accidents reported correspond to technical failures, 10% of risks are linked to the performance of care procedures, and the remaining 85% are linked to the organization of processes. For Lazzari et al [5], safety is an essential component of quality in healthcare, requiring commitment at both individual and team level. Individuals and processes are rarely the only causes of errors. Rather, they are a number of distinct factors which, when combined, create high-risk situations. Information on errors and so-called near misses is needed to understand risk in the complex processes of health and medical care. This data enables us to close safety gaps, reduce morbidity and mortality and improve the quality of care [6].

The literature reports fatal observations secondary to inadequate administration of high-risk drugs (quinine, infusion of potassium, electrolyte-free glucose, anti-arrhythmic, insulin, antimitotic or anticoagulants). Among hospital risks, accidents and hospital-acquired illnesses are the most significant, despite studies showing that around 50% of them are avoidable. Human and financial costs of these accidents are even more disturbing [7].

According to Di Paulo et al [8], person-centered care is becoming more complex and more specialized. We must therefore pay more attention to perfect cohesion of teamwork in health. A truly collaborative practice requires a high level of communication, precise delivery of tasks and results, and clearly defined roles and responsibilities. To achieve a realistic understanding of the risks inherent in modern medicine, all healthcare professionals must be able to cooperate with all parties involved, adopt a proactive systems approach to safety and assume the individual responsibility that requires their profession. This involves, first and foremost, engaging with our patients and respecting their needs, expectations, fears and hopes [9].

According to the World Health Organization [10], medical errors can occur at all levels, and are attributable to systemic or human factors. The most frequent adverse events in terms of safety concern surgical procedures (27%), medication errors (18.3%) and nosocomial infections (12.2%). Yet in many countries, the fear of reporting errors, driven by cultural habits in health care, prevents progress and lessons learned to improve and prevent errors. In France we do not have precise data, the figure of accidents linked to hospital care would be minimized: 1,153 cases of serious accidents linked to care were reported in 2017 by health professionals, while 60,000 people would lose their lives each year in France following a medical accident. But this last figure results from an extrapolation of a report from the World Health Organization and is seriously doubted by doctors [11].

In Australia, errors result in 18,000 unnecessary deaths and more than 50,000 disabled patients. In the United States, healthcare-related accidents result in at least 44,000 (and possibly as many as 98,000) unnecessary deaths per year as well as a million additional injuries. Every year, an unacceptable number of patients suffer from medication failure or lose their lives due to unsafe and poor quality care. Most of these events could be avoided. The burden of at-risk care shows the scale of the problem. It is generally considered that one in 10 hospitalized patients suffers damage, and that at least 50% of this damage can be avoided [12, 13].

According to Zaidi et al [14], the prevalence of healthcare-associated infections estimated in several countries in Africa ranges between 10 and 60%. This prevalence is estimated at 10.9% in Senegal, 12% in Ivory Coast, 10% in Benin and 14% in Mali. In Burkina Faso, a study carried out in a health district in 2012 revealed a prevalence of isolated germs of 71.8% among the samples taken [15].

A study carried out in Kinshasa reports that of the 820 victims of healthcare-related accidents in 2018, the vital prognosis was at stake in 33% of cases, and 17% suffered from a “probable permanent functional deficit”. This concerns, for example, an eye infection contracted during ophthalmological surgery which leads to blindness or an error on the operated side during prosthetic surgery. Finally, half of the 820 patients died. These accidents occur more frequently during “periods of vulnerabilities”. Thus, 39% of cases occurred during the night, on a weekend or during a shift change [16].

Preventive measures make it possible to significantly reduce all of these risks, such as: personal hygiene (wearing personal protective equipment, hand hygiene, etc.), appropriate conduct to follow in the event of an exposure accident to blood (AES), the use of safety equipment (syringes, etc.), the proper use and disposal of sharp or sharp devices and waste, training in gestures and postures and training courses to develop the ability to deal with violence and suffering and reinforced medical surveillance and vaccination of healthcare personnel, etc. [17].

Accidents in healthcare are generally perceived as isolated events, certainly deplorable, and serious in certain cases - sometimes even tragic - but in some way inevitable. To err is human and accidents are always possible. Should we therefore resign ourselves to it?

The main goal of this study is to contribute to the reduction of the mortality rate of the population in hospitals in the prevention of accidents attributable to care.

Specifically, the present study essentially aims to explore the experience of healthcare workers with regard to accidents attributable to care; determine the course of action to be taken in the face of accidents attributable to care; analyze the attitude of healthcare workers towards accidents attributable to care.

2. Methods and techniques

2.1. Study plan (quote)

Any scientific study requires a work plan adapted to the research subject. This plan first provides rigor, then directs the research towards achieving the research objectives, and finally highlights the results obtained.

As part of our study, with a view to understanding the experience of healthcare workers at the Makiso General Reference Hospital on accidents attributable to care. We therefore conducted qualitative research of the phenomenological type.

This study was preferred because it attempts to reveal through it the meaning of certain human experiences through the analysis of descriptions made by the people who have experienced them [18]. Furthermore, Depelteau [19] affirms that in qualitative research, one should not have any preconceptions about the object of the study. It is about understanding, from the point of view of the actors who lived. What is essential here are the meanings that people attribute to phenomena in their experiences.

This is a cross-sectional descriptive study given that we collected data once at a given time in a population, with the target group being healthcare workers with experience in accidents attributable to care. We opted for the interview as a data collection technique, the interview guide and the dictaphone as an instrument for data collection and storage.

2.2. Description of the research area

Also called Provincial Hospital, the Makiso General Reference Hospital which served as our research field is located in the commune of Makiso, in the city of Kisangani, Province of Tshopo in the Democratic Republic of Congo.

Considering the geographical location, this hospital shares its limits to the East by the Higher Institute of Commerce of Kisangani and a little further by the Administrative Building of the University of Kisangani; to the West by the Simisimi military airport; to the North by the Cemetery of the victims of the 6-day war and to the South by the Provincial Health Division and a little further we find the University Clinics of Kisangani and with the Congo River.

2.3. Study population and sample

2.3.1. Study population

As part of this research, the study population is made up of all healthcare workers in service at the Makiso General Reference Hospital during the period of our study. We thus recorded a total workforce of 97 care providers.

2.3.2. Sample

To carry out this study, we used the non-probability sampling plan of the type of convenience or convenience, taken from the selection according to which each element of the population does not have an equal probability or chance of being chosen to form a sample.

According to Côté and Turgeon [20], non-probability sampling of convenience (convenience or even accidental), is made up of units which are made available to the researcher. Many clinical studies are based on convenience samples. We therefore opted for the network or cumulative or "snowball" sample. The network sample consists of asking individuals initially recruited to suggest the names of other people who seem suitable for participating in the study.

Indeed, Omanyondo [18] emphasizes that in qualitative studies, the sample is not representative, despite this, its small size is not synonymous with a limited study. She insists that of course this sample is not representative in statistical terms, but it is representative of all the daily experiences of the participants. In relation to our study, the sample is made up of 3 healthcare workers with experience in accidents attributable to care.

In the qualitative approach, the number of participants is not determined a priori. It is usually dictated by data saturation (redundancy) and the search for different points of view or negative cases, that is to say a saturation in which the data from the interview and even from the questionnaire analyzed no longer gave new information because this is done gradually at the same time as the data collection was carried out.

2.3.3. Selection criteria

We have highlighted a certain number of criteria for selecting respondents for this study.

Inclusion criteria

They are defined according to the characteristics to be taken into account when constituting the sample. Indeed, to be part of our study, the subject had to meet the following conditions:

- have experience with accidents attributable to care;
- be present at the time of the investigation;
- have voluntarily agreed to participate in the survey;
- be able to express oneself either in French or Lingala or even in Swahili.

2.3.4. Non-inclusion criteria

Any person who does not meet one of the inclusion criteria mentioned above.

2.4. Method and techniques

2.4.1. Method

We used the qualitative study method of the phenomenological type. The choice of this method is justified by the fact that our study is based on subjective knowledge, we study the meaning, the meaning of certain human experiences through the descriptive analysis made by the people who have experienced them. The study was in fact carried out during the period from March 2 to 31, 2024.

2.4.2. Data collection technique

The technique of choice for collecting data for this study is the individual face-to-face unstructured interview. It makes it possible to collect data relating to the experience of healthcare workers regarding accidents attributable to care.

Following the course of the study, we carried out the undirected interview which is the preferred tool in qualitative research which according to the same source, the formulation and order of the questions are not determined directly. advance, but left entirely to the discretion of the interviewee, and, the questions were of open type which do not impose response categories and the respondent is free to answer as he wants, to collect the data subject of this study.

2.4.3. Data collection instruments

In order to reconcile the technique with the instrument of this study, in order to allow us to collect and store the information necessary to carry out analyses, the interview guide and recorder (Dictaphone) served as a framework.

This interview guide includes two essential parts: the first concerns information on the socio-demographic characteristics of the respondents, and the second is devoted to questions related to the experience lived by the healthcare workers at the Makiso General Reference Hospital on nursing-related accidents. The instrument was designed first in French, then translated into the language of expression and communication of the respondent in order to facilitate data collection with respondents who do not speak French.

2.5. Conduct of the investigation

2.5.1. Preliminary approach

Starting from the preliminary process leading to our research, we received authorization from the authorities of the Makiso General Reference Hospital to be able to be in contact with the subjects under study, that is to say the bodies caregivers with experience in accidents attributable to care.

2.5.2. Investigation itself

The actual data collection took place at the Makiso General Reference Hospital, our field of investigation. Using the phenomenological method linked to its weakness which is the small size of the sample, our survey was carried out among the healthcare workers of the said hospital during the period from March 2 to 31, 2024 and the workforce was constituted at as data collection evolved.

Before each interview, the investigator presented himself to the healthcare team by stating his full identity, the purpose of the study and the data collection procedure. Then the investigator should check whether the respondent met the inclusion criteria of the study. It was finally after this that the latter proceeded to collect the data, starting with socio-demographic data, before moving on to recording information on the experience of healthcare workers in the face of accidents attributable to care.

We therefore used humility, kindness and respect towards the respondents to collect the information. The duration of the interview was approximately 30 to 45 minutes for one respondent. During the interview, the researcher noted information concerning socio-demographic characteristics and everything related to accidents attributable to care was recorded using a Dictaphone. As we progressed through the questions mentioned in the interview guide, sub-questions were also addressed to clarify the situation, and were recorded systematically.

The saturation of the sample, known as theoretical saturation, is reached when the researcher no longer obtains new data. The data collection procedure was the same as for the interview.

2.6. Ethical aspect

Ethically, the approach consisted of requesting the free and informed consent of healthcare workers to be able to voluntarily participate in the survey. For this purpose, the consent form was read to them for some or submitted to them for others, depending on whether they could read for the latter or not read for the former. During the collection, to explain the goals and objectives of the work, to define what was expected of the respondent, to answer the questions that the respondent might ask, to explain the methods of collecting the data and to choose a quiet place, sheltered from noise, in collaboration with the respondent.

To ensure the confidentiality of the information collected and thus guarantee the anonymity of the subjects, each was identified without their name being mentioned in the recorder containing information from the investigation and analysis of the data which will be erased for security reasons. Finally, the interviewee had the right to refuse to answer any question deemed sensitive and to interrupt our interview at any time.

2.7. Data analysis plan

The analysis is carried out as the data is collected, in particular due to the theoretical sampling procedure. We indeed carried out a floating reading of the materials (interviews), then the application of codes qualified as in vivo code. The in vivo codes are named using the respondent's language, so that it is as close as possible to the raw data.

Also the analysis of the data collected during this study is carried out in a systematic manner, called phenomenological reduction, which aims to bring out the hidden meanings inherent in the descriptions that the subjects surveyed have of the phenomenon studied.

From the themes retained, we identified the sub-themes, finally the categories and we supported them with verbatim statements. The truth, here, must be put in quotation marks, because the understanding we have of a phenomenon is only valid in the context in which this phenomenon took place [20].

Once the information was collected in the field, the data was manually analyzed taking into account the variables studied transformed into subthemes.

- In our approach, we carried out the categorical analysis for which the following procedure was adopted:
- Listen to the integrity of the recording;
- Transcribe the interviews in verbatim form;
- Read each of the descriptions carefully in order to develop a “feel” of this data;
- Identify the interviews under significant statements and expressions that directly relate to the experience of healthcare workers,
- Formulate meanings for each of the statements or expressions retained

- Eliminate repetitions for each of the statements or expressions retained;
- Eliminate repetitions of words (when there is redundancy) and formulate themes and subthemes;
- Group all meanings into themes;
- Analyze the central themes according to the specific objectives of the research;
- Integrate the results of the analysis into an exhaustive description of the phenomenon;
- Corroborate the results with theoretical elements from the literature review..

Thematic analysis means breaking down elements in an intellectual and abstract way, criticizing and then reasoning about them: highlighting the overall meaning of the text; identifying the units of meaning and synthesizing all the units of meaning.

2.8. Reliability and validity of results

2.8.1. Reliability of results

In qualitative research, the reliability of the results depends in part on the quality of the sample chosen and the rigour of the data analysis. In our study, we ensured the reliability of our results by using the theoretical sample technique. Given that the researcher must have control over the composition of the sample, we opted for primary selection of participants.

To increase the reliability of the results, we had part of the raw data analyzed by two experts with experience in phenomenological analysis to ensure that the method produced the same results. And they came to the same conclusions.

2.8.2. Validity of the results

We ensured the validity of the results by confirming the interpretation of the data by the study participants through the group towards the end of the analysis. In fact, we had the participants listen to the recordings of the data collected after analysis to check certain interpretations, and whether our descriptions accurately conveyed the essence of the experience for the participants in the study.

3. Results

There are two types of modalities which focus this presentation. On the one hand, our results are presented in the form of tables, with reference to the identification elements, and on the other, the use of boxes for the data relating to the respondents' emotions, according to the standards provided by the analysis in a qualitative approach. In this respect, the use of a code for each interview guide seems to us to be essential for identifying the opinions in one of its redundancies.

3.1. Presentation of identification elements

Table 1 Distribution of respondents according to elements of identification

Identification / Respondents	Age	Sex	Education level	Function	Seniority
1st Respondent	48 years	Male	Superior	Head nurse	12 years
2nd Respondent	38 years	Female	Superior	Attending nurse	7 years
3rd Respondent	42 years	Male	Superior	Attending nurse	10 years
Total	48years =1 42years =2 38years = 3	M=1 F=2	Superior = 3	Nurse = 3	12 years = 1 7 years = 2 10 years = 3

We coded the respondents on the basis of their identification details. Thus, for the first respondent we assigned the code R1MSI1, R2FSI2 for the second respondent and R3MSI3 for the third respondent. Where R1 = respondent 1, M = male, S = higher level, I = nurse, 1 = 12 years seniority.

This table shows that respondents were generally under 50 years of age, the oldest being 48 and the youngest 38. The predominant sex was male, with 2 subjects in the study, and the level of education was interesting, as all the subjects in

the study had a degree. There were no doctors, but all the respondents were nurses with no more than 12 years' professional experience.

3.2. Comparison of variables with the objectives of the study

The main theme related to this study is: "Experience of Healthcare Professionals at the Makiso General Reference Hospital on Nursing-related Accidents".

Based on the thematic analysis, this central theme brought out 3 sub-themes, namely:

- Sub-theme 1: Experience of healthcare professionals with nursing-related accidents;
- Sub-theme 2: What to do when faced with nursing-related accidents;
- Subtheme 3: Attitude towards nursing-related accidents.

It emerges from these sub-themes, the categories according to which the verbatim are derived. It is:

- Sub-theme 1: Experience of Healthcare Professionals on Nursing-related Accidents:
  - Category 1: Risk factor of nursing-related Accident
  - Category 2: Management of emotions by the caregiver
  - Category 3: Patient reaction during the nursing-related accident
  - Category 4: Consequences of nursing-related accidents.
- Sub-theme 2: What to do when faced with nursing-related accidents
  - Category 1: Working as a team to prevent nursing -related accidents
  - Category 2: Taking precautions before administering nursing
  - Category 2: Ensuring patient safety
- Subtheme 3: Attitude towards nursing-related accidents
  - Category 1: Reassure the patient that his health is restored
  - Category 2: Identification of problems linked to the accident
  - Category 3: Means of preventing nursing-related accidents

The analysis of data linked to the experience of healthcare professionals on nursing-related accidents is presented in the verbatim.

3.2.1. Experience of healthcare professionals regarding nursing-related accidents

We present the respondents' points of view on the risk factors for an nursing-related accident, the feeling felt by the caregiver, the patient's reaction during the nursing-related accident and the consequences of nursing-related accidents.

Table 2 Experience of healthcare professionals regarding nursing-related accidents

Subtheme	Category	Verbatim
Experience of healthcare professionals on nursing-related accidents	Risk factor of nursing-related Accident	"…In my opinion, the accident attributable to care is any adverse reaction that the patient suffers because of poor technique or because of the care we administered to him. The accident linked to care can be favoured by the psychological burden of the nursing staff during the administration of nursing care. I can also cite insufficient hygiene and safety at work, safety and risk management not perceived as important objectives…" R1MSI1
		"…In my opinion, the accident linked to care is any action that we carry out and which has consequences on the health of the patient, apart from the side effects of the technique or the medication. Like for example when, using poor technique, the nurse injects medication into the sciatic nerve in a patient. The pain that this patient will feel and the paralysis that he will suffer is what is called an accident attributable to care…" R2FSI2
		"… As for me, the accident attributable to care refers to any effect that the patient suffers apart from the globally recognized side effects. Accident factors (it would be more accurate to speak of accident risk factors) are the elements which contribute to the occurrence of an accident and its severity. Occurrence factors are composed of triggering factors and contributing factors. Among the triggering

		factors, some may be predominant. These are the causal factors of the accident,…" R3MSI3
	Management of emotions by the caregiver	'... In any case, these accidents arise from a number of situations and circumstances, but generally speaking, it depends on each procedure and each area of care. In surgery, it's all too frequent, and also in paediatrics, because that's where children come in. I can assure you that it's very frightening when it happens. But it's important to stress that making a mistake that causes harm is also a real and sometimes traumatic ordeal for carers...'. R1MSI1
		'... These accidents often depend on the circumstances and, above all, on each medical act performed. As a nurse, when I carry out several procedures at the same time, it can happen that I'm not quite ready to carry out another procedure, and this can cause harm to the patient. When faced with this situation, I have to be aware of the patient's emotions and help them to recover. I also have to listen to them and, perhaps, even help them to find what they need... ' R2FSI2
		'... The occurrence of the accident is an opportunity for profound upheaval, for personal and professional questioning. The fear of a trial and of disciplinary action is mixed with the anxiety of the wrong committed and its consequences. Now that the accident has been committed and identified, the priority is obviously, if there is still time, to take the necessary medical measures to minimise its effects. If these effects are not directly perceptible in the patient's physical state, the mere need for this 'restorative' care will reveal their existence...'. R3MSI3
	Patient reaction during the nursing-related accident	'... It's not easy for the nurse, because the patient may react differently depending on the accident that happened at home. Every patient behaves differently. Of course, being the victim of an error with serious consequences is a tragedy above all for the patient himself and his family. The emotion, incomprehension and anger will be commensurate with the seriousness of the accident, its causes, consequences and treatment...'. R1MSI1
		'... there are acts that can directly kill the patient and others that can only invalidate or cripple him. This is what creates a problem. Coming to terms with one's illness is a sufficiently difficult path to refuse absolutely any additional difficulty from the very people who are supposed to be alleviating the suffering. Reconstructing yourself physically and morally after a mistake that has had consequences can take a lot of time and personal resources... ' R2FSI2
		'... The day I committed the accident while administering care was terrible for me. I'd broken out in a cold sweat because of the fear and the reaction of the patient's family. Fortunately, the patient hadn't noticed it; he simply thought it was the effect of the medication...'. R3MSI3
	Consequences of nursing-related accidents	'... the consequences depend on the type of accident itself. Even with medication, each patient's body reacts differently. For the patient, it depends on the type of accident. For the patient, it depends on the type of accident: it could mean an unexpected death, and for us, the nursing staff, it could mean a drop in our clientele, a loss of confidence and the risk of being imprisoned. I can also mention the risk of infection, the risk of medication and the risk associated with the practice of care...'. R1MSI1
		'... In my opinion, there are many consequences depending on the type of accident and the medical act at the root of the accident attributable to care. Accidents involving exposure to blood (or other biological fluids) are potentially serious because they expose the patient to the possibility of transmitting bacteria or viruses, especially the AIDS virus and viral hepatitis B and C.... ' R2FSI2
		'... I believe that common adverse events that can result in avoidable harm to patients are prescribing errors, unsafe surgical procedures, healthcare associated infections, diagnostic errors, falls, pressure sores, patient identification errors, unsafe blood transfusions and venous thromboembolism, ...' R3MSI3

It emerges from the analysis of this box that the accident attributable to care can be favored by the psychological burden of the nursing staff during the administration of nursing care, insufficient hygiene and safety at work, safety and management of risks not perceived as important goals, poor care technique, etc. Regarding the management of emotions by the caregiver, the respondents spoke of the announcement of the accident and the search for the patient's recovery. Speaking about the patient's reaction during nursing-related accident, we noted the emotion, incomprehension, anger will be commensurate with the seriousness of the accident, its causes, its consequences and its treatment. Finally, regarding the consequences of nursing-related accidents, respondents cited the infectious risk, the drug risk and the risk linked to the practice of care, to the possible transmission of bacteria or viruses, but especially AIDS viruses, and viral hepatitis B and C, but also bedsores.

3.2.2. What to do when faced with accidents attributable to care

Based on this sub-theme, we present what respondents said about working as a team to prevent nursing-related accidents, taking precautions before administering care and ensuring patient safety.

Table 2 What to do when faced with accidents attributable to care

Subtheme	Category	Verbatim
What to do when faced with nursing-related accidents	Working as a team to prevent nursing - related accidents	"… Teamwork consists of doing things together, between members of a broader healthcare community, but it is also about collaborating, explaining, reporting, without the professionals being prepared. I find that teamwork plays an important role in preventing risks linked to nursing care…" R1MSI1
		"…When we have the impression of ignoring the technique of a medical procedure, it is essential to seek the expertise of other members of the healthcare team who can help prevent the accident attributable to the care. Involving the healthcare team is important to share decision-making; it also helps improve the safety and quality of care. I also think that the patient is a valuable source of information, being the only member of the team to be present at all times during the course,…" R2FSI2
		"…In my opinion, when I was faced with an accident related to nursing care, the first thing was to solicit the contribution of other members of the nursing staff. Very often, working in a team has allowed me to find more effective solutions, more quickly. Teamwork promotes the creation of effective problem-solving processes, but also helps set common goals. I noticed that teamwork is essential in the administration of care…" R3MSI3
	Taking precautions before administering nursing	"… generally speaking, it is up to us as healthcare workers to guarantee patient safety. And when we talk about safety, we see everything that cannot cause harm to patients in all of our care that we administer to them. I must ensure traceability in real time (the name of the medication, the form, the dose, the route, the date, the time, the infusion solution, the duration, the stop date if applicable, the identification of the person and the signature I must also clearly note the non-administration and the reason, if applicable…." R2FSI2.
		"…When a patient comes to the hospital, it's so that they can be safe. The trust he gives to the caregiver is so that he feels safe and is healed. I easily understood that the safety of health products (medicines and medical devices) and their conditions of use, the safety of care practices, improving hand hygiene to avoid infections associated with care, are all important precautions that must be taken into account…" R3MSI3
		"…Most errors that result in patient harm do not result from the practices of an individual caregiver or group of caregivers, but rather from system or process failures that lead those caregivers to make errors. It would therefore be relevant to ensure that places of care and

		the medical equipment used are sanitized as best as possible depending on the risk incurred…" R1MSI1
	Ensuring patient safety	"…More simply, everyone can help limit the risks (infections, adverse effects, etc.) by following some simple prevention tips. For example, I must note: better hand hygiene, which must be washed before and after any contact with an area receiving or having been treated, the unique use of injection devices, good identification of patients, attention to clearly specifying medications during transitions in care,…" R2FSI2
		"…Health professionals are required to provide care in accordance with current standards of practice and to put in place the necessary preventive measures to avoid any harm to the patient. In the event of a medical accident, the healthcare provider must immediately take the necessary measures to limit the consequences of the bodily injury,…" R3MSI3
		"…Patient safety is defined as the absence of avoidable harm to a patient and the reduction to an acceptable minimum of the risk of unnecessary harm associated with health care. In the event of an accident linked to care, I believe in my opinion that the healthcare professional must assume his responsibility and put in place the necessary means to prevent this accident from happening again. Health professionals must inform the patient and his family of the medical accident that has occurred and the follow-up to be given, ... » R1MSI1

It appears by analyzing this box that the action to be taken in the face of nursing-related accidents, all the respondents mentioned that teamwork is essential to prevent accidents linked to care. As for taking precautions before administering care, respondents proposed guaranteeing patient safety, ensuring real-time traceability (the name of the medication, the form, the dose, the route, the date, the time, infusion solution, duration, stop date if applicable, identification of the person and signature, etc. Finally, with regard to ensuring patient safety, respondents expressed themselves in favor of limiting risks, better hand hygiene which must be washed before and after any contact with an area being treated or having been the subject of treatment, the single use of devices injection, good identification of patients, attention to specifying medications during transitions in care.

3.2.3. Attitude of healthcare professionals towards nursing-related accidents

On this subject, we present the comments of the respondents on the fact of reassuring the patient of the recovery of his health in the event of an accident linked to nursing care, the identification of the problems linked to the accident and the means of prevention of attributable accidents taking care.

Table 3 Attitude of healthcare professionals towards nursing-related accidents

Subtheme	**Category**	**Verbatim**
Attitude of healthcare professionals towards nursing-related accidents	Reassure the patient that his health is restored	"… The occurrence of the accident attributable to care is an event which is accompanied by emotions and trauma. Although we are afraid when this happens, but the right way to deal with it is to reassure the patient, increase their courage and treat the adverse effects,…" R1MSI1
		"… For me, the only thing that can help the healthcare professional is to reassure the patient, if he or she has already observed the risk event linked to care. Apart from that, you just have to deal with the consequences and above all take responsibility…" R2FSI2
		"… Accidents attributable to nursing care are inherent but can be avoidable if the healthcare professional works in an environment where hand hygiene, materials are sterilized and sanitized, care precautions and appropriate care technique are in place. appointment. Faced with this situation, the caregiver must reassure the patient of his physical, mental and spiritual recovery…" R3MSI3

	Identification of problems linked to the accident	"…Among the problems associated with the accident related to nursing care, I can cite prescription errors. Medication-related harm affects 1 in 30 healthcare patients, with more than a quarter of these harms considered serious or life-threatening. Half of preventable harm in health care is related to medicines…" R1MSI1
		"… The problems linked to healthcare accidents are varied and depend from one patient to another. These include, for example, healthcare-associated infections. Infections can spread, for example, through syringe needles or wounds caused by other sharp medical tools. The risk of transmission of infectious agents concerns all germs carried by the patient's blood or biological fluids. …" R2FSI2
		"… For experienced healthcare personnel, identifying problems linked to the accident attributable to care is an important factor for better patient care. Among the problems, I can cite in particular errors in diagnosis and medical prescription…" R3MSI3
	Means of preventing nursing-related accidents	"… In such circumstances, one must have self-control, otherwise, the panic of the caregiver will also cause the patient to panic. All the same, this is the perfect time to show composure. I must rationally use suitable materials and equipment to prevent risks related to nursing care. Wearing a gown, sterile medical gloves and masks must also be observed during the administration of care,…" R1MSI1
		"… Faced with an accident linked to care, I must observe general hygiene precautions. Hygiene precautions must be applied to all patients, regardless of or their infectious status. In order to control the risks of transmission of infectious agents, it is necessary to respect a set of precautions defined under the term "standard precautions" such as washing hands, cleaning and disinfection of soiled surfaces, transporting linen and materials in closed, waterproof packaging, are subject to rigorous procedures,…" R2FSI2
		"… Preventive measures make it possible to significantly reduce all these risks, such as: personal hygiene (wearing personal protective equipment, hand hygiene, etc.), appropriate conduct to follow in the event of an accident exposure to blood, the use of safety equipment (syringes, etc.), the proper use and disposal of sharps and waste, and suffering, reinforced medical surveillance and vaccination of healthcare personnel, etc. » R3MSI3

Three main points were developed in this box by analyzing the comments of the respondents: with regard to reassuring the patient of the recovery of his health, the respondents were unanimous in saying that the healthcare body must reassure the patient of the rapid recovery of his state of health following treatment. The caregiver must also observe hand hygiene, materials are sterilized and sanitized, care precautions and appropriate care technique are in place. Regarding the identification of problems linked to healthcare accidents, respondents spoke of prescription errors, infections associated with healthcare and errors in diagnosis and medical prescription. Finally, regarding the means of preventing accidents attributable to care, the respondents mentioned the rational use of suitable materials and equipment to prevent risks linked to nursing care, the wearing of gowns, sterile medical gloves and masks, but also the proper use and disposal of sharp or sharp devices and waste, and suffering, reinforced medical surveillance and vaccination of healthcare professionals.

4. Discussion

4.1. Experience of healthcare workers with nursing-related accidents

According to the respondents, nursing-related accident can be favored by the psychological burden of the nursing body during the administration of nursing care, insufficient hygiene and safety at work, safety and risk management not perceived as important goals, poor care technique, etc. As can be seen in the comments recorded during our interview, respondents specified the following:

"… In my opinion, nursing-related accident is any adverse reaction that the patient suffers because of poor technique or because of the care we administered to him. The accident linked to care can be favored by the psychological burden of

the nursing staff during the administration of nursing care. I can also cite insufficient hygiene and safety at work, safety and risk management not perceived as important objectives…" R1MSI1

Regarding the risk factors for accidents linked to the administration of care, Tchicaya et al [16] found in a hospital environment in Abidjan in Ivory Coast that the opinions of nurses were divided: a high score was reported for carelessness in the administration of care (76.0%) and technical error in the administration of care (60.0%), fatigue during the administration of care (36.0%). In Kinshasa, Isaline Greindl [13], found a result slightly lower than that found by Tchicaya, i.e. 69.1% of providers who had mentioned imprudence in the administration of care and technical error, i.e. 54.2%.

But the state of opinion is changing. The echoes in the media are becoming more insistent. The facts reported are disturbing: excessive administration of fluids, overdose of medications, poorly performed tubal ligation, operation on the wrong knee, asphyxia under restraint, undiagnosed fatal melanoma, patient scalded in his bath, delays by ambulance drivers and poor state of health their devices, for example. The worry emerges. Faced with these facts, the common reaction is to attribute accidents to incompetence, negligence, or even the misconduct of a minority of staff. We should crack down [21].

We believe that imprudence and technical error could be attributable to psychological fatigue, which can sometimes go as far as nervous exhaustion and depression, is the consequence of excess compassionate (or vicarious) stress, leading to numerous psychosomatic consequences: sleep disturbances, anxiety attacks, gastrointestinal disorders, behavioral disorders including addictive behaviors (alcoholism, drugs).

Concerning the management of emotions by the caregiver, the respondents spoke of the announcement of the accident and the search for the patient's recovery.

"… These accidents often depend on the circumstances and especially on each medical procedure performed. In my capacity as a nurse, when I perform several procedures at the same time and it may happen that I am not well disposed to perform another procedure and this can cause harm to the patient. Faced with this situation, I must become aware of the patient's emotion and help the latter to recover. I must also listen to him and, perhaps, even help him find his needs,…" R2FSI2

WHO highlights that common adverse events that can lead to preventable harm to patients include prescribing errors, unsafe surgical procedures, healthcare-associated infections, diagnostic errors, falls, pressure sores, patient identification errors, unsafe blood transfusions and venous thromboembolism. Patient harm potentially reduces global economic growth by 0.7% per year. Globally, the indirect cost of harm amounts to several trillion US dollars each year [10].

It is therefore obvious that the occurrence of an accident linked to nursing care can cause harm to victims in a hospital environment. But it must be emphasized how making an error that causes harm is also a real and sometimes traumatic ordeal for caregivers. The increasing complexity and technicality of care puts nurses in particular in a perpetual worry of error; it's a specter that hangs over every day of care. The occurrence of the accident is then the occasion for a profound upheaval, a personal and professional questioning. The fear of trial and disciplinary sanction mixes with the anxiety of the wrong committed and its consequences.

Speaking about the patient's reaction during the accident attributable to care, we noted the emotion, incomprehension, anger will be commensurate with the seriousness of the accident, its causes, its consequences and its treatment.

"…It's not easy for the nurse, because the patient can react differently depending on the accident that happened to them. Each patient behaves differently. Of course, being the victim of an error with serious consequences is a tragedy above all for the patient himself and his family. The emotion, the incomprehension, the anger will be commensurate with the seriousness of the accident, its causes, its consequences and its treatment…" R1MSI1.

The error having been made and identified, the priority is obviously, if there is still time, to take the necessary medical measures to minimize its effects. If these are not directly perceptible in the physical state of the patient, the mere necessity of this "restorative" care will reveal their existence to him. The fact remains that, in medically more favorable cases, the error may go completely unnoticed as long as caregivers do not reveal it or disguise it behind makeshift explanations. Therefore, it is necessary to speak to the patient about it to those around him to avoid any ambiguity.

Bourdeaut [7] in his article entitled “Patients and caregivers faced with medical error”, speaks of an adolescent girl who was transplanted for leukemia. A serious error in the administration of chemotherapy leads to death within a few days. Her mother later testified about the relationship established with the registry service: “The department in which our daughter was treated is a beautiful, competent, honest service. We had complete confidence. From the start, a bond had been created between her and “her” doctor. This link has never been started. »

The medical team's concerted decision to immediately speak out about the error was very positively felt: “We were impressed by the honesty with which we were immediately informed [of the error]. » Even if the consequence of this error was tragic, trust and dialogue were always maintained. On the other hand, despite numerous requests, the parents were never able to speak directly to the nurse who administered the fatal dose, and this remains a nagging lack for them.

It is quite obvious that the patient's reaction during the accident attributable to care, results in emotion, incomprehension, anger will be commensurate with the seriousness of the accident, its causes, its consequences and its treatment. It is therefore up to the healthcare team to transcend the situation for the benefit of the patient who is the victim of the medical procedure in question.

Finally, regarding the consequences of accidents attributable to care, respondents cited the infectious risk, the drug risk and the risk linked to the practice of care, to the possible transmission of bacteria or viruses, but especially AIDS viruses, and viral hepatitis B and C, but also bedsores.

As we can see in the words of a respondent who expressed himself in these terms: “… In my opinion, the consequences are numerous depending on the type of accident and depending on the medical procedure underlying the attributable accident taking care. Accidents of exposure to blood (or other biological fluids) are potentially serious because they expose the patient to possible transmission of bacteria or viruses, but especially AIDS viruses, and viral hepatitis B and C...." R2FSI2

Raoofi et al [22] in their work “Global prevalence of nosocomial infection: a systematic review and meta-analysis” specify that infections associated with health care. Healthcare associated infections, the rate of which is 0.14% globally (and increasing by 0.06% per year), lead to prolonged hospitalization, long-term disability, increased antimicrobial resistance, additional financial burden on patients, families and health systems, and preventable deaths. Likewise, Tchicaya et al [16] found that accidents attributable to care caused the death of patients (76%), physical disability (56.0%) and drug allergy (33.6%). Some errors are likely the result of the negligence or carelessness of a single caregiver, who then bears all responsibility for the accident. The moral condemnation of an obvious failure to show simple benevolence towards others goes without saying; it will not be the subject of further development.

Bourdeaut [7] specifies that it must be emphasized how making an error that causes harm is also a real and sometimes traumatic ordeal for caregivers. The increasing complexity and technicality of care puts nurses in particular in a perpetual worry of error; it’s a specter that hangs over every day of care. The occurrence of the accident is then the occasion for a profound upheaval, a personal and professional questioning. The fear of trial and disciplinary sanction mixes with the anxiety of the wrong committed and its consequences.

The high rate of accident-related deaths attributable to care could be explained in various ways, including drug overdose due to prescription errors and improper administration of drugs to patients, to name but a few. It is essential to ensure that this undesirable event is managed in an appropriate manner. It is in fact likely that the medical risk concerned has been identified in advance and that a procedure exists to combat the consequences on the state of health of the patient and that of those around them.

4.2. What to do when faced with nursing-related accidents

The action to be taken in the face of nursing-related accidents, all respondents mentioned that teamwork is essential to prevent accidents linked to care.

This is reported by a respondent in his surveys as follows: “… Team work consists of doing things together, between members of a broader healthcare community, but it is also a question of collaborating, explaining, reporting, without professionals are prepared. I find that teamwork plays an important role in preventing risks linked to nursing care…” R1MSI1

According to Markwart et al [23], the action to take when faced with an accident linked to nursing care is to take care of one's own safety by avoiding aggravating the situation or being the victim of an accident. It will also immediately provide

medical assistance or security in an emergency, identify victims and injuries, if necessary. It is also necessary to apply first aid to victims, including resuscitation if necessary and document the incident and the preventive measures put in place.

Hygiene precautions must be applied to all patients, regardless of their infection status. In order to control the risks of transmission of infectious agents. Hand washing, cleaning and disinfection of soiled surfaces, transport of linen and materials in sealed, sealed packaging are subject to rigorous procedures. The clothing of nursing staff corresponds to a high level of risk: short sleeves, tunic pants, hair up, short nails without varnish, hands and forearms without jewelry.

Concerning the taking of precautions before the administration of care, the respondents proposed to guarantee patient safety, ensure traceability in real time (the name of the drug, the form, the dose, the route, the date, the time, infusion solution, duration, stop date if applicable, identification of the person and signature, etc.

In these terms, the respondents' comments all converge towards taking precautions before, during and after the administration of nursing care to patients. As the following recording specifies:

"… generally speaking, it is up to us as healthcare workers to guarantee patient safety. And when we talk about safety, we see everything that cannot cause harm to patients in all of our care that we administer to them. I must ensure traceability in real time (the name of the medication, the form, the dose, the route, the date, the time, the infusion solution, the duration, the stop date if applicable, the identification of the person and the signature I must also clearly note the non-administration and the reason, if applicable,…" R2FSI2.

Panagioti et al [24] warn that when an accident has occurred, it is essential to analyze it to find its sources, in order to implement corrective action aimed at preventing it from happening again. As we have seen, any event can be characterized by its frequency and its consequences (its seriousness in the case of an undesirable event such as an accident). As part of a safety approach, we therefore use information concerning the various accidents that have occurred in order to implement or improve measures to prevent these accidents. For every past accident there is a possibility of a future accident; in other words, what has already happened is likely to happen again. The science of risks or "riskology" (neologism) therefore relies on the measured frequency and severity of accidents occurring to estimate the probability and potential seriousness of the corresponding risks. A risk is thus the combination of the probability of an event and its consequences.

The journey of a hospitalized person - like the activity of any healthcare professional - includes a series of events (bleeding, vomiting). Each event has a probability of occurrence; this probability is of course never known precisely in advance, it is only estimated. The probability of occurrence of a (future) event is estimated using statistical data from (past) events, the frequency of which is calculated a posteriori (it is called incidence).

Finally, with regard to ensuring patient safety, respondents expressed themselves in favor of limiting risks, better hand hygiene which must be washed before and after any contact with an area making or having made the object of care, the unique use of injection devices, good identification of patients, attention to clearly specifying medications during transitions in care.

"…More simply, everyone can help limit the risks (infections, adverse effects, etc.) by following some simple prevention tips. For example, I must note: better hand hygiene, which must be washed before and after any contact with an area receiving or having been treated, the unique use of injection devices, good identification of patients, attention to clearly specifying medications during transitions in care,…" R2FSI2

The respondents' comments are affirmed by the literature according to the WHO which states that The removal of concentrated electrolyte solutions, and more particularly potassium chloride, present in care units has significantly contributed to reducing the number of deaths and incapacitating lesions associated with these agents. Several restrictive measures are inherent in the decision to withdraw these agents from care units: in fact, the medication must be prescribed and ordered; it must be properly prepared (diluted), packaged and labeled; finally, it must be carefully administered by competent personnel. If these products are not first found in the care units, it is not possible for the first person to access them to collect and inject them [11].

For Rodziewicz et al [25], it is very essential to plan the availability, accessibility, prescription, preparation, distribution, labeling, control, administration and monitoring of these agents in a manner to avoid and, if possible, eliminate possible accidents. Standardization of dosages, units of measurement and terminology is the sine qua non condition for the safe use of concentrated electrolyte solutions. In addition, care must be taken not to interchange these solutions (for example

by confusing sodium chloride and potassium chloride). These efforts require sustained attention, appropriate knowledge, inter professional collaboration, verification processes and control authorities that ensure safe use.

Healthcare delivery faces a wide range of security challenges globally. Although the traditional motto of medicine "above all, do no harm" is rarely intentionally flouted by doctors, nurses and other healthcare personnel, the fact remains that every day and in all countries patients suffer harm during the treatments they receive, they get. Above all, we must admit this inconvenient truth and reject the idea that the status quo is acceptable. Additionally, and perhaps most importantly, action must be taken to address the problems that contribute to unsafe care.

4.3. Attitude of healthcare professionals towards nursing-related accidents

The attitude of nursing staff towards nursing-related accidents was reported by respondents in three main areas: reassuring the patient that their health will be restored in the event of an accident linked to nursing care, identifying problems linked to the accident and means of preventing accidents attributable to care.

Regarding reassuring the patient of the recovery of his health, the respondents were unanimous in saying that the healthcare body must reassure the patient of the rapid recovery of his state of health following the treatment initiated. The caregiver must also observe hand hygiene, materials are sterilized and sanitized, care precautions and appropriate care technique are in place.

"… Nursing-related accidents are inherent but can be avoidable if the healthcare professional works in an environment where hand hygiene, materials are sterilized and sanitized, care precautions and appropriate care technique are in place. appointment. Faced with this situation, the caregiver must reassure the patient of his physical, mental and spiritual recovery,…" R3MSI3

The safety of the patient during hospitalization must be reassured by the healthcare provider. The World Health Organization [10] reveals that the objective of any solution based on hand hygiene is therefore the establishment or reinforcement of the necessary means so that improvement of hand hygiene is considered as an integral part of and incorporated into an overall health care infection prevention strategy. Patients and their families should be informed about the principles of infection control and the various methods of treatment. Teach patients to observe providers and encourage them to immediately dispose of injection devices properly by disposing of them in containers specially designed to hold needles and other piercing instruments after use.

Regarding the identification of problems linked to healthcare accidents, respondents spoke of prescription errors, infections associated with healthcare and errors in diagnosis and medical prescription.

"… Among the problems associated with the accident related to nursing care, I can cite prescription errors. Medication-related harm affects 1 in 30 healthcare patients, with more than a quarter of these harms considered serious or life-threatening. Half of preventable harm in health care is related to medicines …" R1MSI1

De Rezende et al [15] indicate that the harm caused to the patient can be slight or serious, ranging from simple discomfort to death. It may consist of a problem, a complication, a temporary or permanent incapacity, the loss of a limb or a function, all leading to an "other diagnosis", sometimes hospitalization or, more often, a prolongation of the length of hospital stay. In practice, the accident will appear in the form of an unexpected result, outside the normal. It is only retrospectively, when reviewing the case, that it will be possible to identify the error committed and specify at what stage it occurred. We can then analyze the causes and design measures to prevent recurrence.

Identifying the problems linked to nursing accidents constitutes the first solution to stem this phenomenon before considering other solutions. As we often say: "for great ills, great remedies".

Finally, the means of preventing accidents attributable to care raised by the respondents were the rational use of suitable materials and equipment to prevent risks linked to nursing care, the wearing of gowns, sterile medical gloves and masks, but also the proper use and disposal of sharp or sharp devices and waste, and to suffering, reinforced medical surveillance and vaccination of healthcare personnel.

"… Preventive measures make it possible to significantly reduce all these risks, such as: personal hygiene (wearing personal protective equipment, hand hygiene, etc.), appropriate conduct to follow in the event of an accident exposure to blood, the use of safety equipment (syringes, etc.), the proper use and disposal of sharps and waste, and suffering, reinforced medical surveillance and vaccination of healthcare personnel …" R3MSI3

According to the WHO [10], accident prevention requires the establishment of a control system, as for nosocomial diseases. Awareness of the vulnerability of certain clienteles has led to the application of the concept of "risk management", which comes to us from the world of insurance. In the health sector, this management takes the meaning of a preventive approach using a wide range of means to reduce or eliminate these risks and to limit the undesirable consequences when they occur.

The set of actions which consist of identifying, assessing and treating risks is therefore called risk management. This work can be carried out at the scale of a health establishment and for all the main risks identified. The better risks are managed, the less frequent and serious accidents are, and vice versa. When risks are poorly managed, we move towards insecurity. On the contrary, if they are well managed, we move towards security.

5. Conclusion

In our hospital environments, nursing-related accidents are frequent. It is not uncommon for minor incidents and near misses to occur, before a serious accident occurs. Accidents that only require emergency assistance are a signal that should be heard and used by medical service personnel to guide and implement preventive action.

The harm caused to the patient can be mild or severe, ranging from simple discomfort to death. It may consist of a problem, a complication, a temporary or permanent incapacity, the loss of a limb or a function, all leading to an "other diagnosis", sometimes hospitalization or, more often, a prolongation of the length of hospital stay.

Safety and health training programs for healthcare providers, geared towards the prevention of workplace accidents, should be instituted in hospitals. Preventive measures should be taken to reduce the frequency and severity of nursing-related accidents.

Compliance with ethical standards

Disclosure of conflict of interest

The authors believe that there are no conflicts of interest in the conduct of this study.

Statement of informed consent

Informed consent was obtained from all individual participants included in the study.

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