

Motivações para mudança nas ações dos profissionais de enfermagem após exposição acidental a material biológico

Motivations for changing the actions of nursing professionals after accidental exposure to biological material

Motivos para el cambio en las acciones de profesionales de enfermería después de exposición accidental a material biológico

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How to quote this article:

Pereira EAA; Velasco AR; Hanzelmann RS; et al. Motivations for changing the actions of nursing professionals after accidental exposure to biological material. Rev Fund Care Online. 2018 abr/jun; 10(2):534-541. DOI: <http://dx.doi.org/10.9789/2175-5361.2018.v10i2.534-541>

ABSTRACT

Objectives: The study's purpose has been to identify the motivations for changing the nursing professionals' actions following an occupational accident, as well as to discuss these changes with regards to the work process based on the health worker's viewpoint. **Methods:** It is a descriptive study with a qualitative approach, which has had nursing professionals as participants. The participants have shown a history of work-related accidents with exposure to biological materials. Data analysis was performed through the categorical thematic analysis. **Results:** Experiencing a work-related accident was found as determinant factor for engaging the professionals towards the practice adjustment. The nursing professionals were motivated by fear associated to the risk of post-exposure infection; risk understanding; orientation received after an accident; comprehension of the patient's diagnosis. **Conclusion:** The modifications reported by the professionals showed positive repercussions with regards to the work process, yet, they were motivated by negative feelings experienced after the accident. It is well-defined the need for professional guidance about both health promotion and occupational accident prevention.

Descriptors: Nursing, exposure to biological agents, occupational health.

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RESUMO

Objetivos: Identificar motivações para mudança nas ações dos profissionais, após acidente ocupacional e discutir essas mudanças no processo de trabalho na perspectiva da saúde do trabalhador. **Método:** Estudo descritivo, com abordagem qualitativa, com profissionais de enfermagem com histórico de acidentes de trabalho com exposição a materiais biológicos. Para análise dos dados utilizou-se a análise temático categorial. **Resultados:** A vivência do acidente de trabalho mostrou-se determinante para modificação de práticas profissionais, motivados por medos relacionado ao risco de infecção pós-exposição; entendimento do risco; orientação recebidas pós acidente; conhecimento quanto ao diagnóstico do paciente. **Conclusão:** As modificações relatadas pelos profissionais se mostraram repercussões positivas no processo de trabalho, porém, foram motivadas por sentimentos negativos experimentados após o acidente. Ficando clara a necessidade de orientação dos profissionais sobre promoção a saúde e prevenção dos acidentes de trabalho.

Descritores: Enfermagem, Exposição a agentes biológicos, Saúde Trabalhador.

RESUMEN

Objetivos: Identificar motivaciones para el cambio en las acciones de los profesionales, después de accidente ocupacional y discutir estos cambios en el proceso de trabajo en la perspectiva de la salud del trabajador.

Método: Estudio descriptivo, con abordaje cualitativo, con profesionales de enfermería con historial de accidentes de trabajo con exposición a materiales biológicos. Para el análisis de los datos se utilizó el análisis temático categorial. **Resultados:** La vivencia del accidente de trabajo se mostró determinante para la modificación de prácticas profesionales, motivadas por miedos relacionados con el riesgo de infección post-exposición; Entendimiento del riesgo; Orientación recibida después del accidente; En el diagnóstico del paciente. **Conclusión:** Las modificaciones relatadas por los profesionales se mostraron repercusiones positivas en el proceso de trabajo, pero fueron motivadas por sentimientos negativos experimentados después del accidente. En el caso de los profesionales de la salud, la salud y la prevención de accidentes de trabajo.

Descriptor: Enfermería, Exposición a agentes biológicos, Salud laboral.

INTRODUCTION

The occupational health has been frequently discussed, as well as it has been continuously gaining notoriety in contemporary times due to the influence that the work implies on the lives of the individuals who live under working conditions often unfavorable to perform their functions, and may lead to health risks.¹

Work in health facilities, including the hospital setting, is considered to be typically unhealthy, as it allows the occupational exposure to occupational hazards, and in this case, we will highlight biological hazards.²

Biological hazard is considered as the possibility of contact with biological material, including blood and other body fluids, potentially contaminated by biological agents capable of causing harm to the individual's health.³

The Regulatory Standard (No. 32), Safety and Health at Work in Health Services, establishes guidelines for the elaboration and implementation of a plan for the prevention

of risks of injuries by sharps and with the possibility of exposure to biological agents, annex included in 2011.⁴

The Health Ministry also has a technical manual dealing with exposure to biological materials, an instrument that establishes guidelines for the initial care of professionals who have been exposed to biological material, including the necessary guidelines for follow up, recommendations for chemoprophylaxis, accident reports and, with the establishment of a flow of care and period necessary to follow up these individuals.⁵

In the current literature, it is possible to identify several studies performed among health professionals, with emphasis on nursing team professionals playing an important role in the occurrence of occupational accidents involving the exposure to biological materials during their professional practice.⁶⁻⁷

However, when dealing with issues correlated to work-related accidents with biological material, many approaches are restricted to studies on the perception of occupational risk or the investigation of the occurrence of the type of event; adherence to the use of indicated chemoprophylaxis and the feelings experienced by these professionals.

Nevertheless, it leaves a window on the follow up regarding the physical and psychological well-being of this individual after the experience of the accident and, in the attention to the changes adopted by these professionals once they have passed through the stress of the possibility of contamination/occupational infection to some of the biological agents of greater risk involved in this occurrence.

The safety of health professionals is still a challenge, as many have the belief that this type of accident is inherent to their professional activities and, in doing so, they end up underestimating the occupational risk to which they are exposed, lacking these individuals greater perceptions about the real severity of these accidents.⁷⁻⁸

Studies addressing the feelings experienced by nursing professionals after they experience sharp injuries show different levels of worry, anxiety, anxiety, despair, tension and sadness, all due to fear of HIV infection and hepatitis B and C after the experience traumatic events of this event.¹⁰ Other authors affirm that the psychological stress experienced after the accident can have psychosocial repercussions, leading even to changes in social, family and professional relations.⁷

This study is justified by the importance of giving voice to these nursing professionals, in the context of investigating possible changes in the work process adopted after the accident occurred and the reason that led to such an attitude, and if the changes are positive aspects regarding the adoption of safe practices, the use of personal protective equipment and with this, preventing the occurrence of new accidents.

Based on this background, it is necessary to identify how these professionals react to the experience of the accident with biological material. Did they change their conduct after experiencing a work-related accident?

Given the aforementioned, this study aims to identify the motivations for changing the nursing professionals' actions following an occupational accident.

Furthermore, the objectives were to identify the motivations for changing the nursing professionals' actions following an accidental exposure to biological material; and also, to discuss these changes with regards to the work process based on the health worker's viewpoint.

It is assumed that the study might contribute to identify the difficulties encountered by professionals in adhering to safe practices, with a view to establishing actions to promote effective preventive measures and sensitizing health professionals in the search for information about biosafety, adoption of safe healthcare practices, the use of personal protective equipment and the importance of immunization for hepatitis B, with a view to reducing the risk of accidents as well as minimizing the worker's health damage.

METHODS

With a view to understanding the subjective issues proposed by the study, a descriptive study with a qualitative approach was chosen.¹¹

The study was carried out in a large University Hospital located in *Rio de Janeiro* city, *Rio de Janeiro* State. The same is still a place of teaching and research, with the realization of activities of permanent education and professional training in health, holding undergraduate and postgraduate courses of medical, nursing, nutrition and biomedicine schools, as well as researches in the health field and in the development and evaluation of health technologies.

The subjects studied were the professionals of the nursing team who had notification of work-related accident involving biological material. The inclusion criteria were to be professional of the nursing team and to have suffered a work-related accident involving the exposure to biological material in the year 2013; and, as exclusion criteria, to be away from their work activities during the interview period.

Then, it was performed the search for reports of work-related accident involving the exposure to biological material (*SINAN*) in the *Comissão de Controle de Infecção Hospitalar (CCIH)* [Hospital Infection Control Committee] of the referred hospital. Subsequently, the professionals belonging to the nursing team were identified, who were invited to participate in the second stage of the data collection; and then, the application of a semi-structured interview occurred, aiming certain points in order to meet the study's goals.

Data collection was carried out between July and August 2014. The interviews were conducted in a day and at a time determined by the participants, in a suitable place that respected the secrecy of the information, recorded in MP3 player and later transcribed in its entirety.

The authorization for doing this study was requested from the Directorate and the Nursing Division of aforesaid Hospital. All ethical issues set forth in the Resolution No.

466/2012 from the National Health Council were respected and approved by the Research Ethics Committee from the aforesaid institution, under the Leagl Opinion No. 633.092.¹²

The data collected from the interviews were managed based on the assumptions of the categorical analysis, and their operationalization respected the steps: 1- pre-analysis; 2- material exploration; 3- results handling; 4- inference; and, 5- data interpretation. These stages allowed the creation of categories by grouping the most recurrent Registry Units (RU).¹³

RESULTS

We begin the presentation and discussion of the results from the presentation of the total number of accidents with exposure to biological materials notified in the year 2013 and, later, the characterization of the selected subjects, in other words, belonging to the nursing team and that composed the sample of the study.

The choice to present the general data with regards to the notifications of occupational accidents with exposure to biological material was made in an attempt to show the magnitude of this issue.

In the year 2013, a total of 36 (100%) occupational accidents with exposure to biological material were reported, of which 20 (55.55%) of them involved professionals in the medical training area, of these seven (19.44%) physicians who work professionally at the institution, 11 (30.55%) involving resident physicians and two (5.56%) with undergraduate medical students.

Among the professionals with training in the nursing area, a total of 12 (33.33%) accidents were reported.

In addition to the areas of medical and nursing training, the work accident with biological material was also reported among other professional areas, such as laboratory technicians, with two (5.56%) of the accidents recorded, general service assistants with one (2.78%) record, and one (2.78%) with the involvement of a professional category not registered in the notification form.

Although the findings of this study show that in the year 2013, and the professionals of the medical team have a greater frequency of accidents, the focus of this study is to deal with the data referring to the nursing team. For this, data are presented with regards to the notifications of accidents registered among professionals of this category.

Among the 12 (100%) reports of accidents with biological material among the individuals with training in the nursing area, the most important was the nursing category with the highest number of reported accidents, being six (50.0%) accidents, or half of the occurrences of accidents with exposure to biological material registered among the nursing team occurred with this professional category, followed by three (25.0%) nurses, two (16,67%) nursing assistants, and nursing academics with one (8.33%) of the accidents recorded.

These 12 notices highlighted the number of individuals eligible for the second stage of the study, among whom the interview was conducted with 9 nursing professionals, given that one of the accidents occurred with a nursing student not located for study participation, a professional was on medical leave for the entire period of data collection, and one refused to participate because she did not become a part of the institution's staff.

In **Table 1**, below, presents the general information of the interviewees. Therefore, it is highlighted that nine (100%) professionals interviewed were female. The age of the professionals ranged from 25 to 60 years old, being mostly professionals were within a age group from 25-35 years old, with a quantitative of four (44.44%) professionals in this age group, one (11.12%), interviewee was in a gestational situation at the time of the occurrence of the accidents.

Table 1 - General information of the interviewees. *Rio de Janeiro, 2013*

Sex	n	%
Female	09	100.00
Male	00	0.00
Age		
25 - 35 years old	04	44.44
36 - 45 years old	01	11.12
46 - 55 years old	02	22.22
56 - 60 years old	02	22.22
Gestational Status		
No	08	88.88
Yes	01	11.12
Situation in the Labor Market		
Statutory Public Worker	03	33.33
Temporary Worker	03	33.33
Others	01	11.12
Not informed	02	22.22

Source: SINAN, Institution Studied, 2013.

Regarding the professional's relationship with the institution, six (66.67%) of the professionals work under a temporary bond and another three (33.33%) with an effective civil servant position, these professionals work in differentiated work regimes, where one (11.11%) was working per day and the other eight (88.89%) were working according to a defined schedule, with five (55.56%) day shift attendants and three (33.33%) night shift attendants.

In the second stage of the study we aimed to identify the repercussions of the accident in the professional's work life, experience of suffering the work accident, if there was motivation for behavioral changes and attitudes after the accident occurred.

Based on the statements obtained during the interviews, and through the use of the proposed methodology, it was possible to construct a thematic class, which generated the construction of a category and the subdivision into four subcategories.¹³

Table 2 - Distribution of thematic classes, thematic categories, subcategories and respective frequencies. *Rio de Janeiro, 2014*

Thematic Class	Category (Coding)	F (%)	Subcategories (Coding)	F (%)
Self-referred modifications after a work-related accident	Motivation for self-referred actions after the occurrence of a work-related accident	49 (100)	1. Fear and other feelings/memories of the accident	24 (49)
			2. Understanding the risk	5 (10.2)
			3. The received guidance	8 (16.3)
			4. Patient diagnosis	12 (24.5)

The Category - Motivation for self-referred actions after the occurrence of a work-related accident put together 49 RU, in four subcategories, in which the nursing professionals report the motivation that led them to possible modifications after the experience of suffering a work-related accident.

In the next section, each subcategory is presented with the respective discussions based on the RU found and the literature findings.

Subcategory 1 - Fear and other feelings/ memories of the accident

According to the participants' speech, one can perceive a range of feelings experienced by them in the post-accident, in the moments of waiting for the results of the exams and the fear of facing these results. Nonetheless, one can also understand that these feelings, despite representing a suffering in the first moment, served to motivate them to adopt preventive behaviors and, therefore, making all this negativity experienced in a favorable repercussion, to the extent of preventing and promoting safety during the performance of their professional activities. The following lines stand out:

... the worst was fear, to do all those exams, to have some bad result, is a very great affliction... (NT2)

It was like desperation! Despair indeed! I confess to you... there are a thousand things going on in your head and we just want to do the exams and see that it's okay... (NT3)

Along with the subjective issues that involve the occurrence of occupational accidents, they are reminded that these refer as motivation not to repeat behaviors that led to the occurrence of this injury.

... I always remember and never want to go through anything like that... (NT2)

So you always have that concern, of not having to go through another accident... (N3)

... the memory does not let you make the same mistake, even more so, I got punctured trying to do something that I know I could not... (NT5)

Subcategory 2 - Understanding the risk

It is identified that, from the experience of the work-related accident, the professionals involved in this occurrence began to have a better perception of the risk existing in their professional activity.

I already knew it was wrong to recap, so that was a lesson to me, that I could not do, that it was important to follow the rules... (NT5)

I saw that it really was not to do, that I could not recap the needle... that there was a risk... (NT5)

It is by love or by pain, but in any case, we learn that we have to do what is right... (NT6)

Subcategory 3 – The received guidance

Another factor related by the interviewees to the stimulus to change the practices during the care provision were the questions regarding the guidelines received or acquired after the accident occurred.

Furthermore, it was also possible to identify that, after the accident occurred, there was an interest on the part of the professional himself to acquire greater knowledge about the real risks to which they are exposed.

... then, I started to notice that what she (the nurse of the CCIH) was talking about was important, that she had a reason... I started to be more careful about using EPI too... (NT4)

... I always try to learn, even if it was a bad thing... so I went to do a research, to get more well-informed... (N2)

... we also need to update ourselves, to know the risks, regardless of whether I have suffered the accident... (N3)

Subcategory 4 - Patient diagnosis

In this aspect there is a certain inconsistency in the fact that the diagnosis of the patient serves as either a favorable or unfavorable motivator for the actions self-referred by the professionals, since part of them deals with the fact of knowing a patient's HIV diagnosis as an incentive factor for a greater adherence to the use of preventive measures, leaving doubts about embracing such care, likewise, in the case of a patient known to be negative for the same pathology.

When we know what the patient has one of these diseases, HIV or hepatitis, we are always more careful... (NT3)

Because in the 10th ward it's complicated, right? There are a lot of people with HIV, so, care has to be intensified... (NT3)

I am always attentive; because here we have many children exposed, daughters of mother bearing HIV... (N2)

On the other hand, there are professionals who claim to treat all patients by always adopting preventive measures, and not knowing the diagnosis presented.

Because this way... the way I treat a person with cancer is equal to everyone; he could have HIV, so what? The important thing is that we always must be careful, we cannot forget... (NT2)

So, you do not know, do you? We do not always know if the patient has HIV... Then, the care approach cannot be different! (NT3)

DISCUSSION

Several studies deal with the survey of work-related accidents involving biological material among workers in health units, whether in the hospital environment or not, and they relate the occurrence of this type of accident in the most diverse professional categories, especially the professionals of the nursing team.¹⁴⁻¹⁵

Here, the work-related accidents occurred in their totality by female professionals, other studies present similar data, which indicate that most of the reported accidents occur among female professionals.^{14,17}

Concerning the age of the injured professionals, the majority of professionals were within an age group from 25 and 35 years old, who would be professionals with less time of experience in the profession, they were also found in other studies, where most of the accidents occur in the younger age groups.¹⁷

Among the sectors where the accidents occurred we see the presence of the Surgical Center and also of the Central of Sterilized Material, different from other studies that highlight a greater occurrence of accidents in the Intensive Care Unit and Medical Clinic.¹⁷

For the presentation of the study's qualitative analysis, the discussion of the Subcategories of the Category Motivations for self-reported actions after the occurrence of the work accident related to the inventory of the RU is presented in **Table 2**.

Subcategory 1 - Fear and other feelings/ memories of the accident

Other similar studies of nursing professionals who have suffered work-related accidents reveal reactions of fear, despair, among other feelings, experienced due to waiting for the test results and, mainly, fear of the possibility of seroconversion.¹⁹

This fear is also associated with the prevention of new accidents, which causes professionals to take more care during their activities, become more alert, adopt a preventive posture in the face of accidents, and take more care in handling the sharps.²⁰

Contrary to this information, other authors mention that accidents at work and occupational exposure of individuals to biological agents do have many consequences, not only in the professional context, but also personal, family, social and even psychological, but not always these are sufficient to awaken the individual to the need to modify their behavior.²¹

However, it is evident that work-related accidents can have a positive consequence, since the professional, knowing better the risks to which he is exposed, then he understands the need to change his behavior in order to avoid the occurrence of new accidents; in short, from this experience, professionals begin to adopt preventive measures against risks.¹⁰

Subcategory 2 - Understanding the risk

Once the experience of the accident has passed and, therefore, the visualization of a real risk of contamination/ infection, whether for HIV or hepatitis, starts to perceive a need for awareness for self-care. The authors highlight the fact that the professional needs to go through the work accident situation in order to change his behavior towards the necessary care for self-protection, being essential the actions to raise awareness about the biological risks and accidents at work.¹⁹

Given that the experiences of occupational accidents are quite significant, it is important to take advantage of the moment to work on preventive measures, since this experience leads the professional to reflect on their attitudes and practices regarding occupational safety in work activities. These authors still affirm that it is an opportunity to problematize the experience and to discuss with the workers about the causes and consequences of the work accident, it is an opportune moment to sensitize the professionals about the subject and, at the moment of a shared elaboration of security strategies, aiming to avoid this type of aggravation.²¹

Subcategory 3 - The received guidance

It is important to note that in many statements we can identify the fact that professionals do not receive training or continuing education courses on the occupational hazards present in their daily practice, while professionals refer to receive sporadic guidance in their day to day, during visits made by the nurse of the CCIH.

Additionally, there were reports that indicated the receipt of guidelines at the time of the care given shortly after the occurrence of the accident, a favorable fact, because, at this time, it is also necessary to orientate the correct attitudes, especially if it was identified the lack of this type of attitude at the time of the accident.

The importance of having the professional and knowledge to carry out the procedures of his responsibility, with knowledge of the risks involved in his activities, and with that, the necessary mastery and safety against these risks is emphasized.¹⁹

Of the favorable situations present for the occurrence of occupational exposures, one of them is the lack of professional training, evidencing the need to create effective strategies for the prevention of accidents at work.¹⁶⁻¹⁷

Subcategory 4 – Patient diagnosis

Resuming the question of the feelings experienced after the occurrence of the work accident, highlighting the repercussions evidenced after the accident with sharps, are present the association of the accident with the occupational contamination by the HIV virus and also of the hepatitis, and that generates in the worker psychosocial disorders, characterized by feelings of fear, worry, anxiety, among others.²⁰

This association of the accident with the contamination can justify the fact that the professional experiences the experience of a greater anxiety at the moment of performing a certain procedure in a patient, when the patient knows the diagnosis of this patient, but this fact should not justify a conduct with greater concerns regarding the adoption of preventive measures in comparison with other patients, that biosafety and protection measures should be used for all patients, independent of diagnosis.^{1,7}

Studies corroborate the idea that, after experiencing the work accident and the perception of susceptibility of the seroconversion, the professionals start to adopt better behaviors, such as the increase of the adhesion to the use of the Personal Protective Equipment (PPE), to leave aside the erroneous practice of the recapping needles and also greater attention and care with the manipulation and disposal of sharps.¹⁸

It should be emphasized that only being knowledgeable does not contribute to prevention and perception of the risks of work-related accidents, then demanding the existence of adequate stimulation practices during daily activities.²⁰

It is understood that health professionals should not only be aware of the standard precautions, but should also adopt them in their routine work, in order to avoid not only the occurrence of work-related accidents, but also occupational contamination, and thus having a better health in the work environment and, consequently, outside it.

CONCLUSIONS

Herein, it was possible to characterize that work-related accidents involving the exposure to biological agents are common and serious occurrences among health workers, being relevant their occurrence in front of the nursing team, as well as in front of the other professionals who work in the hospital environment.

The failures in the records of the reports of accidents at work represent a difficulty, not only in the post-exposure follow up of the injured professional, but also in the understanding of the determining factors for the occurrence of the event. The analysis of the accidents of an institution

allows us to think of specific prevention measures aimed at places and/or occupational categories with greater exposure to risks, with the construction of measures of health promotion thought with real knowledge of the dimension of the problem.

Through the participants' statements, it was noted that the experience of living a work accident with exposure to biological agents brings repercussions to the life of the nursing professional, however, despite the issues pertaining to the accident itself, such as issues concerning the risks of contamination, the accident can have favorable repercussions.

It was identified that the self-referred modifications by the professionals are positive for the work process, since the professionals report the execution of procedures in a more attentive way, with more attention to the use of the PPE and also in the handling of sharps, which changes are means of prevention for the occurrence of new accidents.

Nonetheless, thinking about the possible consequences of exposure to biological agents and, in the possibility of contamination by the HIV virus or hepatitis B and C, leads to the manifestation of negative feelings, where professionals express feelings of fear and anguish, shame, among others. Based on this, we cannot expect all professionals to have the experience of an accident so that they can either identify or not the need to change their attitudes during the performance of their professional activities.

Conclusively, it is recognized that working as a nursing professional requires that the care must be provided by people in good health, who have the capacity to perform quality work, who provide care based on responsibility, with ethics and technical-scientific knowledge that are capable of promoting health for others, but also with respect and appreciation of their work and with the promotion and maintenance of their own health.

It is pertinent to highlight that good working conditions, good physical and emotional health conditions of the professionals, measures of continuing education, together with adequate professional dimensioning, in order to avoid an occurrence of work overload, are necessary factors for the decrease in the number of work accidents.

Moreover, by relating the standard precautionary measures and biosafety, it was noticed the necessity of permanent training on the knowledge of the importance of the correct use of the protection measures, aiming not only at the prevention of work-related accidents involving the exposure to biological agents, but also to minimize its possible consequences.

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Disclosure: The authors claim to have no conflict of interest.

Received on: 22/06/2017

Reviews required: No

Approved on: 13/07/2017

Published on: 10/04/2018

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