

THE PERCEPTION OF HEALTHCARE PROFESSIONALS REGARDING MULTIDRUG-RESISTANT MICRO- ORGANISMS USING THE HEALTH BELIEF MODEL

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ABSTRACT

This study analyzed the perception of healthcare professionals about occupational safety at an oncology institute in central region of Brazil. Data collected from April 2009 to December 2010, semi-structured interviews, responses were submitted to content analysis and interpretation of Rosenstock's Health Belief Model. 149 professionals, predominantly female are aware of insalubrious labor conditions, but not sufficiently to support safety measures. The perception of risk of portability and vulnerability to multidrug-resistant microorganisms is characterized by fear of contamination. The results reinforce the need for a continuing education program to encourage them to seek knowledge and valuing safety in the work environment.

Keywords: healthcare professionals, microorganisms and multidrug resistance

INTRODUCTION

The issue of safety of patients and healthcare professionals has increasingly involved the management of healthcare facilities in pursuit of quality in the promotion, protection, recovery and rehabilitation ⁽¹⁾ of health. Accordingly, when pathological events occur as a result of failures in care, the errors must be corrected and adverse events must be prevented through control of processes and practices, subjected to periodic review ⁽²⁾.

The variety of adverse events in healthcare facilities justifies the need for teamwork, ie, a multidisciplinary team capable of managing the safety and quality of care as its primary objective ⁽³⁾.

However, healthcare professionals are a group that is potentially vulnerable to exposure to microbiological agents, with environmental exposure and patient contact. This makes their work especially

risky in terms colonization by pathogenic micro-organisms, among them, *Staphylococcus* sp, including multidrug-resistant forms. This risk also introduces the possibility that the healthcare professional can become a vehicle for transmission, co-responsible for infections related to health care, which is considered a principal adverse event, gravely important to patient health ⁽⁴⁻⁶⁾.

Professionals can be vulnerable because of insufficient knowledge, which can be, in turn, caused by lack of perceived risk. These factors hinder the implementation of clear and objective guidelines for preventive measures, which would be able to arouse the attention of professionals from various fields of health care, regarding the safety and quality of work life ⁽⁷⁾.

Given the limitations of the available studies and the complexity of healthcare work from the point of view of the safety and quality of life of the worker, it was noticed that in recent years there has been significant progress in this subject, a fact that aroused our interest in this investigation.

Aim

It is within this context that this study analyzed the perceptions of healthcare professionals from an oncology institute serving the central region of Brazil with regard to biosecurity measures in the care of patients with multidrug-resistant micro-organisms.

METHOD

Design

This descriptive exploratory study was conducted from 2009 to 2010 in a national reference healthcare facility accredited in oncology by the Brazilian Unified Health System (Sistema Único de Saúde), Goiânia-GO.

Sample/ Participants

The survey was conducted with 149 healthcare professionals, through the application of open and closed questions, previously assessed by experts, with objective and behavioral questions involving the use of biosecurity measures in the care of patients carrying multidrug-resistant micro-organisms.

Data collection

The data collection were through a open and closed questions. The analysis of open responses was made qualitatively through Bardin's Thematic Content Analysis ⁽⁸⁾, associated with the interpretation of the material and proposition of inferences developed according to the theoretical framework of the four dimensions of Rosenstock's Health Belief Model ⁽⁹⁾: perceived susceptibility, perceived severity, perceived benefits and perceived barriers.

Ethical considerations

The healthcare professionals were previously invited to participate, this time it was explained the aim and the method of the study. Interviews took place in accordance with the date and time to the availability of the subject, in a private setting. To maintain the confidentiality and privacy of the subjects, they were identified by letters.

This study was approved by the Research Ethics Committee, protocol: 040/08.

RESULTS AND DISCUSSION

The 149 participants were represented by 114 nursing technicians, ten nurses, ten physicians, seven radiation therapy technicians, three surgical instrument technicians, two physiotherapists, two secretaries and an orthopedic technician. Most were female (129/86%), aged 30-40 years (115/77%), working as healthcare professionals for more than five years (139/93%), officially bonded and registered as workers by the Brazilian Ministry of Labor (85/57%). However, almost half of respondents also provide services in other hospitals (43%).

The first question involved the use of hand hygiene, the analysis of which yielded five categories: fear of contamination, colonization and transmission; insalubrious work environment; selective use of hand hygiene; stricter compliance; and standardization of precautions.

With regard to knowledge, risk, and susceptibility of professionals to multidrug-resistant micro-organisms, six categories emerged: fear of contamination, colonization and transmission; consequences of contamination and disease; ignorance of the risk of contamination; impairment of health; compliance, standardization and the use of Personal Protective Equipment (PPE); and acquired knowledge.

Considering the descriptions of preventive measures against the spread of micro-organisms, four categories were developed: compliance with and standardization of biosecurity measures; stricter adherence to precautions; ongoing and/or continuing education; and selective use of precautions.

Behavioral factors affecting a lack of compliance with biosecurity measures and promoting the benefits of compliance developed into four categories: professional commitment (or lack thereof); knowledge of risk (or lack thereof); worker and patient safety (or lack thereof); and risk of contamination and transmission.

Four other categories revealed the obstacles or advantages to compliance with biosecurity measures: knowledge of biosecurity measures (or lack thereof); professional commitment (or lack thereof); working conditions; concern with preservation of health worker and patient (or lack thereof).

It is perceived that healthcare professionals, besides knowing the occupational risks, lack the necessary insight to form ideas and gain knowledge through the senses. It is not enough to simply know the risk factors in order to take corrective action. It takes a scientific-philosophical basis to influence behavior^(10, 11).

The Health Belief Model can be a tool to support the development of effective strategies for greater compliance with the measures recommended by professionals to work safely⁽⁹⁾.

Corroborating the idea above, the 23 categories resulting from interpretative reading of the reports in this study were grouped by similarity, resulting in 16 classes, aggregated using the four dimensions of the Health Belief Model, illustrated in the following table:

ROSENSTOCK DIMENSIONS	CLASSES
Perceived Susceptibility	Fear of contamination, colonization and transmission Risk of contamination and transmission Insalubrious work environment Stricter use of precautions Selective use of preventive measures Compliance with and standardization of biosecurity measures
Perceived Severity	Consequences of contamination and disease Impairment of health.
Perceived Benefits	Ongoing and/or continuing education.
Perceived Barriers	Professional commitment (or lack thereof) Knowledge of the risk of contamination (or lack thereof) Worker and patient safety (or lack thereof) Knowledge of biosecurity measures (or lack thereof) Working conditions Concern for the preservation worker and patient health (or lack thereof)

The “perceived susceptibility” dimension refers to the perception of the worker of the possibility of contamination, vis a vis actual risk factors in the workplace ⁽⁹⁾. Observed in this dimension was a fear on the part of the healthcare professional with regard to contamination, colonization and transmission of bacterial resistance to antimicrobials, concern about elevated levels of exposure, as well as compliance with biosecurity measures on the part of some ⁽¹²⁾.

Also noted as that the different perceptions of workers with regard to risk were not always tied to level of education, evidenced by nursing technicians presenting themselves as being more concerned about an insalubrious work environment than doctors and nurses. These responses illustrate this diversity:

[...] I have a fear of contracting micro-organisms resistant to antibiotics because I live in the hospital environment with sick people (nursing technician).

[...] I'm not afraid of contracting micro-organisms resistant to antimicrobial agents because [after enough time on the job, we don't worry about it anymore] (nurse).

[...] I'm not afraid of contracting micro-organisms resistant to antimicrobial agents because on account of our routine, we forget about this risk, so we are not afraid. (doctor)

To reduce the risk of contamination, it is necessary that healthcare professionals know the work process and the risks to which they are exposed, as well as the correct use of protective measures, which increase the safety of staff and patients ^(10, 13, 14).

This fear of, and actual risk of contamination, colonization and transmission demonstrates that the professional perceives the occupational risk, which makes them concerned about acquiring diseases. This increases compliance with biosecurity measures, and enhances safety of the workers themselves, as well as patients and colleagues ⁽⁶⁾.

The risk of occupational exposure creates the need to develop schemes of prevention and control, by way of ongoing education regarding safety and quality of work life. Such conduct is essential for reducing the significant risks of cross contamination during care ⁽⁷⁾.

To protect health, these measures should be implemented along with standardized biosafety measures, which means there is a need to use them correctly with all patients, considering the patients to always be contaminated ^(14, 15). This is demonstrated by responses such as:

[...] I'm more worried about me being contaminated and transferring the bacteria [to the patient] (nurse technician).

[...] Hands should always be washed "(nursing technician).

[...] I'm afraid of contracting micro-organisms resistant to antibiotics because of contamination (nursing technician).

[...] It is correct to use precautions regardless of the patient (nursing technician).

The perception of an insalubrious workplace by professionals exerts significant influence on quality of care, since the perception of risk and considering all patients and surfaces as vehicles of transmission of micro-organisms increases compliance with biosecurity measures in all situations, which reflects on patient and worker safety (10, 16) Wolf 2008, Efstathiou 2011). Answers like these corroborate this statement:

[...] I have the impression that bacteria are impregnated [in everything] (nursing technician).

[...] I consider every place to have bacteria which can infect me (nurse).

Similarly, the fear of an insalubrious workplace in some cases may be responsible for stricter adherence to precautions and the selective use of biosecurity measures ^(11, 16).

Some workers selectively adhere to biosecurity measures, for example, only when the patient is a known carrier of micro-organisms. Ignoring the idea of an insalubrious work environment can increase cross-contamination, compromising the safety of both the patient and the medical professional ^(1, 5). This can be evidenced in the report below:

[...] When I take care of a client who is carrying a resistant micro-organism I do not practice hand hygiene with the same frequency as when I take care of a non-carrier (nursing technician).

The diagnosis of the patient as colonized is not always identified at the moment of hospital admission, accordingly, the worker using precautionary measures with only confirmed cases becomes responsible for increased rates of infection from cross-contamination ^(5, 11).

The “perceived severity” dimension is the perception of the worker relative to disease severity, inviting consequences in both private and professional life ⁽¹⁷⁾. This dimension was evidenced by the workers' perception of contamination and disease, such that it involved compromising health, caused treatment failure, increased mortality, as well as financial hardship caused by the negative influence on work activities, and contamination of patients, relatives and professionals.

It was found that when the professional is knowledgeable about the risks of exposure due to improper practices, as well as the consequences of these acts, there is an increasing trend of compliance with biosecurity measures ^(10, 15).

The consequences of contamination and disease, and compromised health, represent a concern of the workers with conditions that the disease can cause, leading to correct and incorrect attitudes. This fact is proven from the following reports:

[...] Because it is bad to be sick (nursing technician).

[...] Because the bacteria is resistant and antibiotics can not treat it (nurse).

[...] Because a sick worker creates risk to the entire healthcare team, and for clients to infect immunocompromised patients principally (nursing technician).

According to Lima et al. ⁽¹⁸⁾ the concern of the workers with occupational risk and fear of consequences encourages the practice of safe procedures. However, this fear can lead to unsafe acts, as they act only for their own benefit, forgetting that patient safety is a significant factor in service ⁽¹⁹⁾.

The “perceived benefits” are represented by the worker's understanding of the advantages of compliance with biosecurity measures in reducing levels of contamination ⁽⁹⁾. The main benefits cited were: contamination, colonization and transmission, preservation of health, and providing workplace safety and security procedures and quality of care.

The importance of seeking knowledge through continuing education is only recognized by the employee as increased knowledge, and does not reflect on practice ^(3, 20). During the analysis of some depositions, it was noted that workers had a sense of the need for improvement, but lay the responsibility for acquiring knowledge on the institutions in which they work:

[...] We can avoid using personal protective equipment and continuing education (doctor).

[...] We can prevent [pathological events] through individual equipment available in the unit and through knowledge acquired in the courses (nurse).

It is felt that continuing education is a benefit, provided that the worker also desires scientific enrichment, and if that does not happen, the transmission of information is no longer a benefit, ^(11, 16) and turns into a barrier, without personal meaning. This is because the employee ceases to perceive these actions as important and begins to identify them as just an extension of the work, and when the institution does not stimulate that, the knowledge remains limited because there is no authentic search for knowledge.

“Perceived barriers” demonstrate the factors that prevent worker compliance with biosecurity measures ⁽⁹⁾. They are related to difficult access to and lack of personal protective equipment, complications with work and work overload, insufficient human resources, lack of knowledge, supervision and visual impairment by the use of PPE, as proven by the reports:

[...] the gloves make it difficult to find a vein and use bandages (nursing technician).

[...] what prevents compliance is my visual impairment (physiotherapist).

A worker, to the detriment of safety in patient care, has a need for comfort and aesthetics. Besides that fact, occupational exposure can bring about consequences both for the personal and professional lives of the staff.

This situation reveals a professional disengagement because the top priority of healthcare workers is providing quality service, making judicious and selective use of biosecurity measures ^(10, 16)Brush. This is due to lack of concern with the preservation of both the health worker and the patient, since there is no standardization and compliance with biosecurity measures. This is shown in the reports below:

[...] The lack of commitment to yourself, your patient, and your institution is a factor that prevents professionals from complying with standard precautionary measures (technical, nursing).

[...] The lack of concern on the part of some professionals with contamination and non-compliance with precautionary measures puts everyone at risk (technical, nursing).

Lack of worker and patient safety is marked by a lack of biosecurity measures and the risk of contamination. This is a maxim that should be widely discussed, since only one worker who is unaware of the importance of and compliance with biosecurity, risks contaminating the entire staff, and puts patients at risk, jeopardizing safe patient care ^(14, 16, 21) Brush. The following excerpts confirm that the lack of knowledge of risk and biosecurity measures prevents compliance with prevention strategies:

[...] If we do not know about it, or do not understand it, we have no way to prevent it. (nursing technician).

[...] If we are not aware [of risks], there is no way to prevent [events] (nurse).

Working conditions was a major perceived barrier, as the worker may have knowledge and awareness about biosecurity measures, without the physical infrastructure, or human and organizational resources necessary for their implementation, patient and worker safety is impaired. This is demonstrated below:

[...] What prevents my compliance with biosecurity measures are the complications [with patients] during the service (doctor).

[...] What prevents my compliance with biosecurity measures is the lack of time (nursing technician).

[...] The availability of personal protective equipment interferes with my compliance with biosecurity measures (nursing technician).

In this sense, workers show interest in complying with biosecurity measures, but are hindered by inadequate working conditions. It is evident that to improve compliance and security, the institution should first adapt the environment to the needs of workers.

FINAL CONSIDERATIONS

This study allowed us to analyze the perception of healthcare professionals about multidrug-resistant microorganisms, and weigh the positive and negative factors affecting compliance with biosecurity measures.

The Health Belief Model allowed us to analyze the perceptions of professionals according to the susceptibility, severity, benefits, and barriers, representing positive and negative behaviors holistically, supporting an analysis of the attitudes of same.

It was perceived that professionals were conscious of workplace insalubrity, but not sufficiently as to make them comply with biosecurity measures. This fact demonstrates that a risk of cross-contamination exists, confirming the susceptibility of healthcare professionals to multidrug-resistant microorganisms.

There was a perception of severity among professionals in characterizing the fear of contamination, especially in relation to social, family, psychological and labor, consequences, however, it was not found to be sufficient for the standardization of precautions.

The benefits are perceived by the healthcare professionals, and serve to increase the proliferation of biosecurity measures. By portraying the benefits obtained from the use of PPE, professionals are influenced by the severity of the risk, because protection is highlighted as the main motivation for compliance.

Perceived barriers influence professional behavior, as the healthcare professional begins to observe only factors that complicate, creating obstacles to compliance with any biosecurity measure.

Lack of compliance with biosecurity measures is not always associated with level of schooling, as professionals at the technical level demonstrate increased concern and awareness of this subject.

The need to intensively explore these measures in vocational training was found. The link between teaching and service is not yet fully formed, leading to a climate of insecurity and hostility between professionals and patients.

This study leads us to reflect on the need for continuing education programs, and continuing to add value at all professional levels, and above all, serve as way of stimulating the pursuit of knowledge through other constantly informative methods.

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