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Beyond risk: vulnerability of patients using medications, from the perspective of healthcare professionals

Para além do risco: vulnerabilidade de pacientes em uso de medicamentos, na perspectiva de profissionais da saúde

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ABSTRACT

Introduction: The concepts of risk and vulnerability have been discussed in the healthcare field and represent different approaches in the process of care, with an important amount of interventions that included drug prescriptions and treatments. **Objectives:** To analyze the healthcare professionals' perceptions of the concepts of risk and vulnerability and their influence on Medication Use Process. Methods: Data were collected in an academic tertiary hospital, from a focus group conducted with healthcare professionals who are active in diverse settings of care. The meeting was recorded, audio statements were transcribed and coded, and the content was organized and analyzed using content analysis. **Results:** Three physicians, 2 nurses and 2 pharmacists participated in the study. The findings suggest that there is a continuum between both concepts, with vulnerability preceding risk: each individual has its own range of vulnerability prior to the drug administration, being risk inherent to the drug utilization process. **Conclusions:** According to the research subjects, reducing vulnerability can potentially prevent additional drug therapy problems development: the patient has to be the focus of the medication use process, not only the drug and its risk.
Keywords: Health Vulnerability. Risk. Medication Systems.

RESUMO

Introdução: Os conceitos de risco e vulnerabilidade têm sido discutidos na área da saúde e representam diferentes abordagens no processo de cuidado, com um número significativo de intervenções que incluem prescrições medicamentosas e tratamentos farmacológicos. **Objetivos:** Analisar as percepções dos profissionais de saúde sobre os conceitos de risco e vulnerabilidade, bem como sua influência no Processo de Uso de Medicamentos. **Métodos:** Grupo focal realizado com profissionais atuantes em diferentes níveis de atenção, em um hospital universitário terciário. Os depoimentos foram transcritos, codificados e então analisados por análise de conteúdo. **Resultados:** Participaram do estudo 3 médicos, 2 enfermeiras e 2 farmacêuticos. Os resultados sugerem a existência de um continuum entre a vulnerabilidade e o risco, sendo a vulnerabilidade anterior ao risco neste processo: cada indivíduo tem sua gama de vulnerabilidades diante da administração do medicamento, e o risco é inerente à sua utilização. **Conclusões:** De acordo com os sujeitos do estudo, reduzir vulnerabilidades pode prevenir o desenvolvimento de problemas relacionados a medicamentos: o usuário deve ocupar o centro deste processo, não apenas o fármaco e o seu risco relacionado.
Palavras-chave: Vulnerabilidade em Saúde. Risco. Sistemas de Medicação.

Introduction

The concept of risk refers to the probability and the odds of population groups to become sick and die because of illness[1,2] and occupies a central role in the discourse of epidemiology as a science, to the point of being considered a mathematical expression of epidemiological inference[3]. Once epidemiology engages in determining causal relationships between variables through probabilistic analysis, the concept of epidemiological risk comes into play, which is the basis for several current practices in healthcare.

On the other hand, the concept of vulnerability expresses the likelihood of falling ill, thus facing health problems related to each individual case[4]. The illness process is unique to each individual, characterized by the specific experience of each person[5]. It results from the interaction of each patient with their beliefs and their bodily experience, their relationship to the environment, including family and psychosocial contexts. The concept of vulnerability includes the detection of weaknesses, but it goes beyond this: it is mainly characterized by the confrontation capacity of each person to deal with health problems. It emphasizes the resilience of individuals and their creative capacity to overcome a particular condition[3] and arose at the beginning of the 1980s, with the HIV/AIDS, in an attempt to shed a new light on the individualizing tendency of the disease[6]. In addition, the coping potential is defined as the set of behavioral and cognitive efforts of the individual focused on managing a stressful event, causing the individual to understand what the factors are that tend to influence the final outcome of the process[4].

Vulnerability was considered not only as the product of an individual determination, but also one of the individual-collective relationships[8]. There is an intrinsic relationship between the individual and the collective, recognising their co-existence though. The implementation of vulnerability in three dimensions: individual, programmatic and social was proposed[8,9]. Individual vulnerability refers to the degree of access and quality of information patients get regarding their health, as well as their understanding in relation to their personal behavior. On the other hand, programmatic vulnerability is the quality of programs and services that make up the health system in its fight against disease, the quality of care provided, and the monitoring of its initiatives. By contrast, social vulnerability considers the patients' environment, their power to participate in political and institutional decisions, and the relationships among their communities.

During the development of therapeutic projects in the caring of patients, pharmacotherapy plays a leading role: pharmacological interventions can make up to 50% of the therapeutic resources used by healthcare professionals. The use of a drug as a healthcare tool can be seen as a logical model within the Medications Use Process, a theory which seeks to explain the flow of information and the structure of the drug utilization system[10]. Although, when the system structure or the flow of communication is flawed, there is an increase in the probability of error (such as dispensing errors or patients not complying to their treatment), also called Drug Therapy Problem (DTP).

Because of the importance of risk and vulnerability in the healthcare field, this study aimed to evaluate the perception of healthcare professionals regarding both concepts and their influence in the medications utilization process.

Methods

Qualitative study, following COREQ[11] criteria and RATS Guidelines[12].The focus group technique was used to attain the objectives of the study since it allows for the discussion among research subjects and thus has the potential to highlight new information through the constant exchange of information and experiences among participants[13].

Selection of Participants

Participants' sampling was purposive. The choice for this type of sampling occurred because of the need to have diversity of opinions among research subjects who are professionals directly involved with the care of patients[13]. In addition, heterogeneity of the group regarding their profes-

sional category and their field of practice is sought. The focus group meeting was held with professionals from a healthcare company that consists of four hospitals, one emergency ward, twelve primary care units and three mental healthcare units, which is publicly granted and ruled by federal administration.

The invitation was sent to eight healthcare professionals (three physicians, three nurses and two pharmacists), who had been informed about the purpose of the study and the nature of their participation. After confirming their interest in participating in the study, they received two articles on the subject, in case they chose to do prior reading ("Improving the Quality of Medications Use: The Case for Medication Management Systems"[10] and "The vulnerability and the compliance in collective health"[4]).

Focus Group Meeting

Seven of the eight participants who were invited, accepted and attended. The group was composed of three physicians, two nurses and two pharmacists, and made up a representative group of the following fields of practice within the institution: the infectology ward (both hospital and ambulatory), the Center for Psychosocial Care, the Primary Care Units and the surgical ward.

As the meeting's first step, individuals read the Informed Consent Form, and those who agreed signed the form, having been assured that information that came out at the meeting would be confidential. Then, a brief presentation was made by the researchers to the group reviewing the concepts of risk, vulnerability and drug utilization process, which are currently published in the scientific literature. The objectives of the study were outlined.

The meeting continued with the moderator encouraging the participants to talk about their perceptions of the complex relationships of the concepts. Printed cards with the concepts were distributed to participants in case they felt the need to consult them again. Free discussion followed on the proposed themes and guiding questions proposed by the meeting moderator. A topic guide was used by the moderator in the discussion:

– How do risk and vulnerability relate to the medications use process?

– What role does vulnerability play in the medication use process?

– What role does risk play in the medication use process?

The research subjects themselves decided when to end the meeting, following the decision that all the issues to be addressed had already been answered during the group discussion.

After the meeting, the statements were transcribed and to ensure anonymity, were coded with a number and a professional category. A thematic analysis[14] was conducted and the codes were grouped into categories through an inductive approach. Quotes were selected from the interviews to illustrate the final themes. No computer software was used to aid the analysis of the data.

Ethics approval

Ethics approval was obtained from the institutional Ethics Committee (CAAE #34696214.1.0000.5530, approval report #847.455). Written consent was obtained from all subjects before their participation in the study.

Results

The meeting lasted

The meeting lasted about one hour and a half. The discussion of the subject matter flowed very naturally and without constraints by research subjects, who valued finding a common ground and avoiding possible conflicts and disagreements among the participants. The views and opinions of the participants came from their own practice and professional experience, bringing to the discussion issues experienced in their daily care of patients. When new ideas were exhausted, the participants decided to end the meeting.

From the data that was collected, transcribed and analyzed, the three following categories came about. Each theme is further described using illustrative quotes from select interviews.

Theme 1: Risk in the medication utilization process

Most of the meeting was dedicated to a discussion on the relationship of the risks in the medication use process. The meeting ended with an agreement that risk is inherent whenever a drug is used, regardless of their proper use or not, but greater when a medicine is not used correctly:

"The drug has a risk. If I take a medicine and use three at a time, I qualify for it differently." (Physician1)

And besides being inherent and increased when conditions are not ideal, individual risk related to improper use (insufficient dose, or non-adherence to treatment, for example) may lead to risk to the community as a whole:

"Not using some medication properly can cause an important epidemiological impact in the worsening of some diseases in the natural evolution of some pathologies. Resistance (to antibiotics). Tuberculosis, HIV and others. The non-use or misuse worsening the disease affects the whole community and the world." (Physician1)

According to research subjects, a vulnerability can become into a risk, and there are a number of risks that are part of the medications use process: lack of continuing education and/or non-use of updated protocols and scientific evidence, healthcare systems that do not act in the most efficient manner, low quality of the pharmaceutical products, patients with low literacy, lack of adequate communication between the patient and healthcare professionals, and medication errors.

Moreover, the risk may increase according to the specific professional practice scenario: there was a quote, from the example, of the hospital environment as a place for potential increased risk in the use of medications, as it decreases patients' autonomy and makes them more vulnerable:

"Autonomy and vulnerability are inversely proportional. The patient has less autonomy so he is more vulnerable. When he enters the hospital [...] In any healthcare institution [...] (Pharmacist2)

… He has less mental and physical autonomy " (Physician1)

Health services must work to prevent harm that the healthcare institutions themselves can cause their patients. In addition, healthcare professionals have to work together with their patients regarding self-medication, because it would also increase drug-related risk.

Theme 2: Vulnerability in the medication utilization process

For participants in the focus group, vulnerability can become a risk at any given time. Because it occurs before the risk, vulnerability goes through a process where intervention by the healthcare professional is possible, in order to prevent any development of risk.

An individual's awareness regarding their health condition and coping potential is directly linked to their autonomy. The lower the autonomy level, the higher the vulnerability. From this perspective, healthcare teams have a key role in identifying these vulnerabilities in a patient, as well as encouraging empowerment and problem solving skills of each patient. To address these situations, all those involved must be aware of their vulnerability:

"Vulnerability has, it seems ... it seems to me, it has a greater potential for you to intervene, than the risk. When vulnerability is identified, it is possible to evaluate the opportunity to intervene or not, using it as kind of a positive factor, right? Thinking about a drug treatment. Risk is already... an equation of that. It gets harder to modify." (Pharmacist2)

According to the research subjects, the greatest potential for intervention by healthcare professionals is related to the vulnerability factors, even if there are limitations for such in professional practice. The root causes of these limitations are the need for comprehensive communication of the health services internally, in order to ensure access to medication and intervention in the social health factors.

Theme 3: The relationship between concepts of risk and vulnerability in the medication utilization process

Subjects quoted that it is difficult to establish a framework that precisely defines the difference between the concept of risk and the concept of vulnerability, as they are very similar concepts. In other words, the two concepts are interwoven

and therefore, there is a continuum relationship between vulnerability and risk in the medications use process:

"But where does vulnerability end and risk begin? Sometimes those concepts overlap. From what we were saying here, sometimes you cannot separate vulnerability from risk. I think there is a line ... I think this is perhaps a continuum." (Physician 3)

Having defined that there is a continuity between the concepts of risk and vulnerability, and along this continuous line, the existence of an intersection between the two of them, vulnerability precedes risk in the process of drug utilization:

"[while a patient] If I am vulnerable and I take care of myself, I am reducing the risk. It [vulnerability] is a prior condition, in this sense. So, therefore, I will think in biological terms. If I have a tendency to ... [a given aggravated health condition] it is a matter of promoting healthcare and preventing disease, isn't it?" (Physician1)

"Vulnerability precedes risk. So, yes […] it can be individual, social and programmatic." (Nurse2)

"[while a healthcare professional] You have a potential to intervene, to work, to use the potential" (Pharmacist2)

"Yes, there are things that you may not have to work with [as a healthcare professional], but if the patient is aware of that vulnerability, one can handle it." (Physician2)

Therefore, if the patient's vulnerability is not reduced, or there is no intervention by healthcare professionals, this becomes a risk. The intervention by the healthcare team is seen as an option and can be considered essential both in the protection of the patient from risk, and in the reduction of vulnerability:

"*The need for us to create a concept of vulnerability began at the moment that we [as healthcare professionals] started to focus solely on risk. We look only at the groups from a risk standpoint while ruling out given groups. We keep the focus on risk factors and ignore others. And then, we felt the need to create another concept that enabled us to expand the scope and place the patient as our central aim… As a starting point of this issue, the patient must be able to make choices and to reduce his exposure to some risk factors." (Nurse1)*

Discussion

Although both of the concepts of risk and vulnerability have a close relationship, they have their own differences: while risk has an analytical character, evidenced through traditional epidemiological studies, vulnerability has a synthetic profile[3], ranging from the simple to the complex, taking into account abstract and subjective issues associated with the disease process[15]. It represents a challenge to reflect upon the health practices being introduced at present. When using the framework of vulnerability, healthcare professionals contribute to the development of new health care practices, based on the care of the individual or group and based on trans-disciplinary principles, where healthcare is the responsibility of different sectors of society at large.

According to the subjects of this study, both of the concepts are involved in the medication use process, and there is a continuum and an interface between them, where vulnerability precedes risk. Vulnerability conditions are specific to each individual and to the group and community where they belong, and prior to the use of given medicines. A prescription can expose the patient to risk and there are factors that increase or decrease the patient's vulnerability, because there are individual and social issues related to patient profiles, such as their relationship with their pharmacological treatments.

When using medications, the vulnerabilities of each individual (as well as their coping potential) should be taken into account by healthcare professionals in order to avoid the risks inherent in this process. During the stages of the drug utilization process, errors are cumulative, leading to the development of Drug Therapy Problems (DTPs). If these problems are not detected, corrected and/or prevented, they may lead to the risk of harm to patients[10]. The occurrence of harm (reversible or not) due to the use of medications is referred to as Drug Related Morbidity (DRM).

This corroborates with the findings in published studies: the prevalence of DRM is up to 7.1% in patients treated on an ambulatory basis and 6.5% in hospitalized patients. In the outpatient setting, 58.9% of the morbidity could have been avoided, and in the inpatient setting, the prevention of mor-

bidity may reach up to 41%[10]. Even after discharge, 5.6% of patients are readmitted to hospital because of pharmacotherapy-related problems, with 46.5% of them being preventable[16]. In one study, the incidence of adverse events in elderly patients was estimated at 9.8 events per 100 patients per month (42% preventable)[17]. The presence of DTP can reach 27% of the discharge prescriptions, and it can account for 5.6% of these patients returning to hospital[18].

What determines, therefore, that the same individual will have or not have problems related to pharmacotherapy?

The presence or absence of risk factors can directly influence the development of DTP. In this study, some of them were cited by the research subjects and they correspond to the literature, such as the level of awareness and self-medication[19]. Individual health and disease outcomes and their unequal distribution among different groups of patients and individuals are the result of the interaction of social determinants of health[20].

To enhance the resilience factors and also the autonomy of a patient, the healthcare team is contributing to work from a new perspective of assistance, that considers the individual as the protagonist of his therapy. This same logic can and should be used when organizing the healthcare system, aiming to have an organization that takes care of its patients rather than exposing them to new risks.

Features such as level of awareness, self-medication and beliefs about the disease and the pharmacological treatment can be considered as integral parts of the vulnerability of patients in their unique context. In a social dimension, the profile of the patient, their sociocultural context and the community in which they are a part of; and in a programmatic dimension, the frailty of healthcare networks is a result of this study from the perspective of the patients' vulnerability and their coping potential.

To sum up, risk is unalienable in the use of a medicine, but it is influenced by an individual's preconditions of vulnerability, which may determine if there are DTPs or not. The role of the healthcare professional is pivotal in the prevention and reduction of DTPs through intervention to reduce vulnerabilities counting on the empowerment and coping potential of every individual.

As a main limitation of this study, we should mention the small number of participants. This is a characteristic of the focus group technique, which means that the data refers to local social representation and additional data collection on the subject in different contexts and locations which contribute to further analysis and enlightenment. Another limitation of the study was the absence of feedback data from the research subjects, a step suggested by some authors for internal validation of data, but which could not be done by the researchers.

Conclusions

Including the concept of vulnerability along with the concept of risk, in the medications use process, remains a challenge. The findings of this study demonstrate the need to remodel the practice of healthcare professionals, where they are key players in the incorporation of technologies which prevent vulnerability to drug therapy problems in order to reduce the risk of drug related morbidity, by a patients' empowerment perspective while addressing social determinants of health.

Working with the aim of strengthening patients' autonomy is to understand that the medication use process is not vertical and not only linked to the drug and the risks related to its use, but also to the relationship established between the patients and their treatment, individualizing pharmacotherapies and enhancing coping potentials.

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