

PERCEPTION OF A MULTIDISCIPLINARY TEAM ON THE FACTORS CONTRIBUTING TO ADVERSE EVENTS AT A UNIVERSITY HOSPITAL

PERCEÇÃO DA EQUIPE MULTIDISCIPLINAR ACERCA DE FATORES INTERVENIENTES NA OCORRÊNCIA DE EVENTOS ADVERSOS EM UM HOSPITAL UNIVERSITÁRIO

PERCEPCIÓN DEL EQUIPO MULTIDISCIPLINARIO SOBRE LOS FACTORES INVOLUCRADOS EN LA INCIDENCIA DE EVENTOS ADVERSOS EN UN HOSPITAL UNIVERSITARIO

Regiane Pereira Martins Lima¹
Marta Maria Melleiro²

¹Nurse. Nurse Manager of the Intensive Care Unit at the Celso Pierro Hospital and Maternity – Pontifical Catholic University of Campinas (PUC), São Paulo, SP – Brazil.

²Nurse. Associate Professor at the Nursing School of the University of São Paulo (EEUSP). São Paulo, SP – Brazil.

Corresponding Author: Regiane Pereira Martins Lima. E-mail: regianepmartins@yahoo.com.br
Submitted on: 09/19/2011 Approved on: 01/28/2013

ABSTRACT

The objectives of this study were: to analyze the perception of a multidisciplinary team of a university hospital on factors contributing to adverse events (AE); to associate such factors to Parasuraman, Berry and Zeithaml's dimensions of service quality. This is an exploratory and descriptive study with a quantitative approach and prospective data collection. The population consisted of 98 professionals with a BS in Health. Data was collected from May to June 2010, through a questionnaire with the consent of the Research Ethics Committee of that institution. The research population consisted mostly of young adults; 74.5% were female; 31.6% had a post-graduate degree. The perception of professionals on the factors influencing AE related to dimensions of quality was: responsiveness to customer's right to refuse procedures; empathy towards customers' satisfaction and confidence in recommending the institution. Among the participants, pharmacists and nurses conveyed their perception more emphatically. The most cited AEs were: expected or unexpected (according to package insert) pathological effects in medical treatments, medication errors and falls. This research helped to understand the perception of the multidisciplinary team about the factors contributing to the occurrence of adverse events; it supports the redesign of care and management processes focusing on risk management.

Keywords: Quality of Health Care; Health Services Evaluation; Safety Management.

RESUMO

Os objetivos deste estudo foram analisar a percepção da equipe multidisciplinar de um hospital universitário acerca de fatores intervenientes na ocorrência de eventos adversos (EA) e relacioná-los com as dimensões de qualidade de Parasuraman, Zeithaml e Berry. Trata-se de um estudo exploratório-descritivo, de abordagem quantitativa, com coleta prospectiva de dados. A população foi composta de 98 profissionais com bacharelado em saúde. A coleta de dados ocorreu no período de maio a junho de 2010, por meio da aplicação de um questionário, após a anuência do Comitê de Ética da referida instituição. Na caracterização dos profissionais verificou-se que a população constituiu-se, em sua maioria de adultos jovens, 74,5% eram do sexo feminino e 31,6% apresentavam pós-graduação *latu sensu*. As percepções dos profissionais acerca dos fatores intervenientes na ocorrência de EA relacionados às dimensões de qualidade que se destacaram foram: responsividade com o direito à recusa do usuário a ser submetido a procedimentos, empatia com satisfação dos usuários e confiabilidade referente à indicação da instituição. Entre os participantes, as categorias profissionais que mais expressaram sua percepção foram os analistas clínicos, farmacêuticos e enfermeiros. Os EAs mais citados pelas categorias foram os efeitos patológicos esperados ou inesperados em bula para tratamento medicamentoso, erro de medicação e queda. Por conseguinte, esta pesquisa possibilitou conhecer a percepção da equipe multidisciplinar acerca dos fatores intervenientes na ocorrência de EA, fornecendo subsídios para a reformulação dos processos assistenciais e gerenciais com foco no gerenciamento de risco.

Palavras-chave: Qualidade da Assistência à Saúde; Avaliação dos Serviços de Saúde; Gerenciamento de Riscos.

RESUMEN

Con este estudio se ha buscado analizar la percepción del equipo multidisciplinario de un hospital universitario de los factores involucrados en la incidencia de eventos adversos (EA) y su relación con las dimensiones de calidad de Parasuraman, Zeithaml y Berry. Se trata de un estudio exploratorio descriptivo, con enfoque cuantitativo y recogida prospectiva de datos. La población estuvo constituida por 98 licenciados en salud. La recogida de datos se realizó entre mayo y junio de 2010, mediante la aplicación de un cuestionario, después de la aprobación del Comité de Ética de dicha institución. Al caracterizar a los profesionales se observó que la población estaba compuesta en su mayoría de adultos jóvenes, 74,5% de mujeres y 31,6% con posgrado *latu sensu*. La percepción de los profesionales sobre los factores arriba mencionados fueron: capacidad de respuesta al derecho del usuario a negarse a seguir los procedimientos, empatía con la satisfacción del cliente y confianza en la institución. Entre los participantes, los profesionales que más expresaron su percepción fueron los analistas clínicos, farmacéuticos y

enfermeros. Los eventos adversos más citados por fueron los efectos patológicos esperados o inesperados en el prospecto para el tratamiento medicamentoso, errores en la medicación y las caídas. Esta investigación ha permitido conocer la percepción del equipo multidisciplinario de los factores que intervienen en la incidencia de los eventos adversos y ha proporcionado información para reestructurar procesos asistenciales y de gestión centrados en el manejo de riesgos.

Palabras clave: Calidad de La Atención de Salud; Evaluación de Servicios de Salud; Administración de La Seguridad.

INTRODUCTION

Systematic evaluation of work processes in health services aimed at improving quality of care is the guiding principle of health care institutions. Such process involves evaluation, measurement and management of institutional strategies directed to the improvement of care, which benefits both customers and professionals and contributes to the competitiveness of the institutions.

Errors or non-compliance can happen in the care process; they are characterized as failures in action planning or as the wrong execution of a plan to achieve desired goals. It can occur at any phase of the care process, from prevention to treatment.¹

However, customer's dissatisfaction associated to poor service delivery of several organizations demanded the set-up of quality standards such as professional excellence, efficient use of resources, minimal risk to the user, a high level of customer acceptance and positive effect on health.²

In such context, some governmental and non-governmental initiatives have developed permanent processes for evaluating and certifying the quality of health services, enabling the continuous improvement of attention to the customer, in order to provide quality and humanized medical care.³

It is essential to offer quality care, service evaluations and concern with the prevention of risks inherent to the care process. Identifying risks, developing risk prevention strategies and conveying to the team the importance of recognizing risks are the goals of risk management.

The professionals' perception on quality leads to the need to forecasting, provision, implementation, monitoring and risk prevention; therefore, the quality assessment of an activity is of paramount significance in the work process of health professionals.⁴

RISK MANAGEMENT OF ADVERSE EVENTS (AES) AND ITS REPERCUSSIONS IN HEALTH SERVICES

Risk management plays a fundamental role in healthcare organizations by providing support and information to decision makers and offering a safe environment to customers and professionals.

It aims to reduce to an acceptable level, proactively, the identified risks through assessment and prevention rather than reactive actions and remediation.

Health services quality programs strive to promote environmental quality, risk management and adherence to compliance standards, focusing on improving the organization's performance and customer safety.⁵

Risk management is the mapping and the strict control over the flow of activities and the implementation of the culture of shared responsibilities; it aims at achieving the cooperation among teams and an intensive and close attention to customers.⁶

Risk management is the systematic and continuous application of policies, procedures, behaviours and resources in the assessment and control of risks and AEs that threaten safety, human health, professional integrity, the environment and corporate image.⁷

Several authors state that risk-based auditing complements the set of procedures and evaluation methods in order to estimate the potential damages to organizations and health.⁸ They mention a number of risk factors which, when detected, reported and treated, avoid AEs. According to these authors, risk management aims to:

- reduce the likelihood of actual or potential flaws in their processes;
- maximize current process reliability through the analysis of failures;
- minimize errors and increase quality in both clinical and administrative procedures.

Risk is classified according to the likelihood of an AE – a situation that affects the integrity of health professionals or customers.

AE is an event related to health and/or services provided to customers, it is not consequence of their health condition and it causes an unintentional damage.⁹

The practice of error reporting is adopted in several countries in order to avoid its frequency; underreporting means that reported errors do not represent the totality of errors occurred during the working process. The purpose of error notification is to find the causes of their occurrence and the failures in the process. After identifying the causes, strategies to correct the processes are implemented to avoid the recurrence of similar errors.¹⁰

THEORETICAL FRAMEWORK

PARASURAMAN, ZEITHAML AND BERRY'S FIVE QUALITY DIMENSIONS

Quality is the customer's assessment of overall excellence or superiority of a service. Thus, knowledge on customers' perception is relevant to health services since the gathering of information will benefit service organization. Service quality assessment was defined in the late 1980s as based on three characteristics: a) the first is concerned with the services intangibility, assessed according to the performance and customers' experiences; b) the second, with the heterogeneity of services, with the possibility of different performances and assessments depending on supplier and customer. The latter considers services production and consumption as being inseparable, thus hampering their control and evaluation.¹¹

The belief that the existing knowledge on product quality was insufficient to understand service quality became the starting point to the development of a model for service quality. According to the above authors, failure to understand service quality comes from the way goods are produced, consumed and evaluated. From the moment a service is offered, it is difficult to accurately capture the evaluation criteria used by customer/worker; they usually assess a result and the service delivery process and quality; they consider all other aspects essentially irrelevant.¹²

Five dimensions of quality were then defined in order to assess customer satisfaction. They are not mutually exclusive, yet provide important subsidies for understanding customer's expectations; they are aspects that delineate the service from the point of view of the customer that is going to assess it.

The five dimensions of quality are as follows:

- **tangibles:** it refers to the appearance of physical facilities, equipment, personnel and communication materials; represents the material aspect of supply that can be perceived by the five human senses.
- **reliability:** it refers to the supplier's ability to deliver a safe and efficient service; it is the ability to provide the contracted service reliably; it reflects a consistent, flawless performance the customer can trust. The supplier must fulfil expectations, with no possibility of remake; in this dimension, customers' expectations are higher with narrower zones of tolerance than in the others.
- **responsiveness:** refers to the provider's readiness to help customers by providing a courteous, precise and fast service. It relates to the willingness of the staff to assist customers and to the promptly delivery of services.
- **assurance:** it is the employees' courtesy, knowledge and ability to convey trust.
- **empathy:** it refers to the ability to demonstrate that the organization cares about users and provides personalised

attention to customers; it encompasses accessibility, sensitivity and effort in understanding customers' needs.

Reliability can be considered as a result; *tangibility*, *responsiveness*, *assurance* and *empathy* are structural and procedural dimensions. The use of these dimensions has proved effective to measure customers' perceptions and expectations on quality of service. This evaluation model was chosen here because the quality dimensions related to AEs perceived by health professionals can demonstrate intervening factors linked to customer safety.

Thus, health professionals and internal customers can perceive (or not) the risks to the latter and external users; each quality dimension has a comprehensive view of customers' needs.

The use of the five service quality dimensions gives providers a wide view of the various aspects of customer care; it focuses on situations users are exposed to that may offer some kind of risk. The detection of a health risk or AE enables its investigation, prevention and treatment.

Based on these evidences, this study aimed at analysing the perception of a multidisciplinary team at a university hospital on factors that contribute to the occurrence of adverse events (AEs) and relate them to Parasuraman, Berry and Zeithaml's quality dimensions.

METHODOLOGY

This is an exploratory and descriptive study with the use of quantitative approach.

It was carried out at a large private tertiary university hospital in Campinas, state of São Paulo (SP).

It was submitted to the institution's Research Ethics Committee; approval was granted in April 2010 under Protocol N° 0221/10.

The research population consisted of health professionals with university degree who met the following eligibility criteria:

- professionals involved in direct customer care;
- professionals with at least 12 months experience in the institution.

A total of 241 professionals met the above criteria and agreed to participate in the research; there were six nutritionists, seven pharmacists, ten physiotherapists, fifteen clinical analysts, ninety-seven nurses and a hundred and six physicians. Among these, ninety-eight (41%) returned the data collection instrument and formed the group of research subjects: three nutritionists (50%), four pharmacists (57%); seven physiotherapists (70%), eleven clinical analysts (73%), forty-seven nurses (48%) and twenty-six physicians (24%). After being contacted and the objectives of the study explained, the professionals were invited to participate in the investigation and they were given the Statement of Informed Consent.

Data was collected between May and June 2010, through a questionnaire – after approval by the Research Ethics Committee was received.

The data collection instrument consisted of: a) the participants’ social and demographic data; b) the professionals’ perception on AEs subdivided into open and closed questions. In the open questions, the participants could elaborate on the positivity and negativity of their reply.

The data collection tool aimed at evaluating the perception of different professional groups on AEs, relating them to Parasuraman, Zeithaml and Berry’s five dimensions of quality: reliability, responsiveness, tangibles, assurance and empathy. Five questions were prepared for each dimension, relating the factors involving the occurrence of AEs and the dimensions of quality.

Table 1 shows the dimensions of quality, number of questions and the researcher’s proposed themes.

Table 1 - Dimensions of quality, number of questions and themes, Campinas, São Paulo – 2010

Dimensions	Questions	Themes
Tangibles	01	Human, material and physical resources
	02	Equipment safety
	03	Involvement in purchasing policies
	04	Staff sizing
	05	Risks related to structure
Reliability	06	Established protocols
	07	Safe implementation of activities
	08	Recommendation of the institution
	09	Professionals’ involvement as listeners
	10	Information to customers about risks
Responsiveness	11	Process assessment
	12	Right to refuse treatment
	13	Communication
	14	Guidelines manual
	15	Protocol development
Assurance	16	Monitoring procedures
	17	Risk monitoring
	18	Definition of AEs
	19	Information about previous AEs
	20	Actions against AEs
Empathy	21	Empathy and care
	22	Focus on customers’ needs
	23	Customer satisfaction
	24	Professional training
	25	Introduction of the theme to professionals

A pre-test was conducted in order to verify the relevance of the instrument; there was no need to restructure it.

RESULTS AND DISCUSSION

The study findings were analysed and interpreted by the researcher in two parts: a) classification of participants; b) analysis of the relationship between the multidisciplinary team’s perception on the factors contributing to adverse events and Parasuraman, Zeithaml and Berry’s five dimensions of quality.

The majority of respondents (26 participants) were aged between 30 to 35 years (26.5%); followed by 21 (21.4%) aged between 25 and 30 years and 12 (12.2%), between 35 and 50. The percentages indicate the predominance of young adults.

The studied institution invests in professional development and training; there is a multidisciplinary residency program, post-graduate incentives and welcoming programs to the newly-graduated. Such policy explains the high number of young adults among its staff.

A total of 73 professionals (74.5%) were female and 25 (25.5%) males: female professionals predominated in all areas.

Time elapsed since graduation varied from one to thirty-two years (average of 11.36 years with a standard deviation of 7.80 years and a median of 9 years).

As the institution is a teaching hospital, there are many professionals – 50 (51%) – with up to 10 years of experience: the researchers assumed that the participants were experienced professionals able to recognize and analyse the quality of care delivered.

A total of thirty-one (31.6%) were specialists; sixteen (16.3%) participated in a residency program, six (6.1%) held a master’s degree and four (4.1%) a Ph.D.

Although there is a human resources development policy, the number of candidates to post graduation courses is not significant: only six of them obtained a master’s degree and four a Ph.D.

ANALYSIS OF THE MULTIDISCIPLINARY TEAM’S PERCEPTION ON FACTORS RELATED TO THE OCCURRENCE OF ADVERSE EVENTS WITH PARASURAMAN, ZEITHAML AND BERRY’S FIVE DIMENSIONS OF QUALITY¹²

This section presents and analyses data collected through open and closed questions related to the dimensions of quality. Table 2 presents the affirmative and negative responses.

Table 3 presents the results of 98 (100%), since some participants failed to respond.

Table 2 demonstrates that the dimension with more positive answers was *responsiveness* – 94 (95.9%) – for the right to refuse treatment (question 12); followed by 92 (93.9%) in question P23 (*empathy*) on customers’ satisfaction; and 86 (87.8%) in *reliability* (question P8) regarding the recommendation of the institution.

Table 2 - Distribution of answers according to dimensions, Campinas, São Paulo – 2010

Dimension	Questions	Affirmative		Negative		Total
		n	%	n	%	n (%)
Tangibles	P1	83	84,7	14	14,3	97 (99)
	P2	72	73,5	26	26,5	98 (100)
	P3	58	59,2	40	40,8	98 (100)
	P4	40	40,8	57	58,2	97 (99)
	P5	38	38,8	60	61,2	98 (100)
Reliability	P6	76	77,6	22	22,4	98 (100)
	P7	83	84,7	14	14,3	97 (99)
	P8	86	87,8	11	11,2	97 (99)
	P9	78	79,6	20	20,4	98 (100)
	P10	60	61,2	38	38,8	98 (100)
Responsiveness	P11	56	57,1	41	41,8	97 (99)
	P12	94	95,9	4	4,1	98 (100)
	P13	53	54,1	45	45,9	98 (100)
	P14	48	49	50	51	98 (100)
	P15	67	68,4	31	31,6	98 (100)
Assurance	P16	59	60,2	37	37,8	96 (98)
	P17	61	62,2	36	36,7	97 (99)
	P18	53	54,1	42	42,9	95 (97)
	P19	43	43,9	53	54,1	96 (98)
	P20	43	43,9	53	54,1	96 (98)
Empathy	P21	79	80,6	16	16,3	95 (97)
	P22	73	74,5	25	25,5	98 (100)
	P23	92	93,9	6	6,1	98 (100)
	P24	55	56,1	40	40,8	95 (97)
	P25	60	61,2	38	38,8	98 (100)

The predominant dimensions were related to subjective aspects, being possible to infer the concern with processes and results of services delivered.

The dimension with less prevalence of positive responses was *tangibles* (risks related to the structure) with 38 respondents (38.8%). It is an alarming result for it raises doubts about strategies employed in risk monitoring and the efficiency of actions against them.

The convergence between this study and the results previously found by Parasuraman, Zeithaml and Berry, in which *reliability* scored highest and *tangibles* was the less mentioned for achieving quality of service.¹²

In order to describe the behaviour of the groups in relation to the 25 questions, the results in Table 1 were subdivided according to the analysis of the responses, as shown in Tables 2, 3, 4, 5 and 6.

TANGIBLES

The *tangible* aspects addressed in this study are physical facilities and human resources, materials and equipment, representing thus the structure for the provision of health services.

The groups differ in relation to questions 1, 2 and 3, which deal with human, material and physical resources, safety related to equipment and involvement in procurement policies.

Complementing the closed questions, Table 3 displays the open questions; it is possible to infer the concern with the quality of processes related to human resources and direct care to customers.

Table 3 - Answer to open questions related to tangibles, Campinas, São Paulo – 2010

Tangibles	
Question	Answers
1	High customer complexity can hinder care to others Long working hours can impair quality of care Inadequate remuneration discourages human resources Lengthy hiring process puts a strain on the teams
2	Lack of preventive maintenance of equipment Changes in management engineering Lack of involvement in preventive equipment maintenance Poorly maintained equipment Professionals are given little information on preventive maintenance
3	Superintendents are the only ones involved in procurement policies Permanent professionals are the only ones to get involved in acquisition of goods Involvement restricted to tests of equipment Equipment acquired is not always the tested and chosen one Committee for Standardization is responsible for procurement policies No effective professionals' involvement in purchasing.
4	Lack of professional qualification Mistakes in choosing the professional profile Little training directed to professional qualification
5	Entrance in poor conditions Small sectors with no isolation area Areas and furnishings in need of improvement Failure in access control at the institution Disregard for the guidelines of the Committee on Hospital Infection Control

Regarding knowledge on equipment safety, results demonstrate the need to convey the importance of preventive maintenance and of the involvement of professionals in this process.

Concerning the participation in procurement policies, centralization can undermine the participation of professionals in the process.

Although most groups have responded affirmatively regarding the quantity of human resources, dissatisfaction with the professional qualification was shown.

RELIABILITY

Questions on the supplier's ability to safely and efficiently perform the service were analysed; it consists of the ability to provide the service agreed upon reliably and faultlessly.

It was observed that the groups differ in questions 6, 8 and 9 – established protocols, recommendation of the institution and involvement, respectively. These themes are related to the staff's commitment, enthusiasm and motivation and are currently one of the biggest challenges to health institutions.

In Table 4 – open questions on *reliability* – customer safety is one of the main topics.

Table 4 - Answers to open questions from 6 to 10 on reliability, Campinas, São Paulo – 2010

Reliability	
Question	Responses
6	Failure to fill documentation as established in protocol Non-compliance with approved protocol Failure in protocol communication Lack of assessment of existing protocols
7	Guidelines of the Committee on Hospital Infection Control are not always followed The presence of students interferes with customers feelings of safety Work overload conveys no confidence to customers
8	Professionals' relatives are users of the institution Lack of human resources (nutritionists) causes insecurity regarding recommendation of the institution Running of the institution is known
9	Ombudsman for external and not internal users Sector or strategy intended to manifestation is not known Customers voice their dissatisfaction to professionals
10	Customers are informed only in case of an adverse event Information about risks to customers depends on the professionals' discretion Customer ignores the practice of informing on the possible risks of therapy Risks are only informed in case of surgical procedures

The need for an ombudsman service for internal users was mentioned, proving to be a vehicle for professionals to express themselves.

RESPONSIVENESS

Responsiveness relates to the readiness of professionals to courteously, promptly and with precision meet customers

The groups differ in questions 11 and 15 – evaluation of work processes and involvement in protocol development. These themes are relatively new in health area, since they are being discussed after initiatives for quality certification of institutions.

Table 5 explains factors related to *responsiveness* from the perspective of the participants; most professionals do not know about work processes evaluation, that protocol development is not shared with all groups and that amendments need to be widespread.

Table 5 - Responses to open questions 11 to 15 on responsiveness, Campinas, São Paulo – 2010

Responsiveness	
Question	Responses
11	Supervision is overloaded with process evaluations The Further Education Service is responsible for process evaluation Strategies for process assessment are not known Work overload hinders the proper implementation of processes
12	The customer is able to refuse a procedure only after signing a statement of responsibility Only three participants ignore the customer's right to refuse a procedure
13	Information about changes in the institution is ineffective Professionals are not informed about changes in the institution Changes are informed by others
14	Hospital admission and treatment are informed to customers only by ambulatory clinics via printed leaflets. The existence of printed material distributed to customers is unknown Brochures, pamphlets, single sheets and hospital admission manuals are provided to customers Only medical report, discharge summary and drug prescription are handed over to customers
15	Managers are responsible for protocol development and amendment procedures Professionals' involvement in protocol development and amendment procedure is unknown

ASSURANCE

Assurance refers to courtesy, knowledge of the needs and expectations of customers and professional ability to convey confidence.

The groups differ in questions 16, 17 and 18 – process monitoring, risk monitoring and the concept of AEs. Such moni-

toring needs well-defined indicators to enable diagnosis and more assertive decision making.

Table 6 reveals that professional groups recognize the tools used by the institution for monitoring care and administrative processes as well as risks; however, they stated that customers are not informed on AEs.

Results highlight the lack of standardization of actions to be taken in case of an AE.

Table 6 - Responses to open questions 16, 17, 19 and 20 on assurance, Campinas, São Paulo – 2010

Assurance	
Question	Responses
16	Mechanisms for process monitoring are unknown
	Statistics
	Quality service
	Risk Management
	Indicators
	Non-compliance report
	Systematization of Nursing Care (SAE)
17	Project Management
	Risk assessment
	Customer risk assessment
	Mechanisms for monitoring risks are unknown
	Indicators
19	Risk mapping
	Committee of Hospital Infection Control
	Professionals inform about previous AEs only when demanded
20	Initiatives for informing customers about previous AEs are unknown
	Action plan to avoid further AEs
	Measures taken when AE is identified are unknown
	In the event of an AE, the doctor's name is revealed and a non-compliance report is submitted and sent to quality service.
	The occurrence of an AE prompts changes in protocols, Standard Operating Procedure (SOP), training and guidelines
	Investigation of the root cause to prevent AE

The various professional groups identified ten situations recognised as AEs, cited more than once by the different groups.

The AEs mentioned were:

- **medication errors:** cited only by nurses; a daily practice not less risky to customers. The administration of medicines is a common intervention in hospital environment; recent studies have shown errors in drug treatment that result in patient harm that go from not receiving the needed drug to injuries and death.^{13, 14}

- **pathological effect expected or unexpected (according to package insert), during drug treatment (drug reaction):** cited by pharmacists, physicians and nurses. Unintentional injuries associated with drug therapy have affected 1.3 million people per year in the United States; costs related to hospitalization due to adverse effects amount to 76.6 billion dollars annually; the number of customers affected annually is 60000 to 140000. Of these, 31% experienced an adverse event due to medication during hospitalization: 0.31% proved fatal.¹⁵
- **fall:** cited by nurses, probably because they provide direct care to customers. The nurse plays a vital role in the assessment of factors that may contribute to falls: mental state, level of consciousness, ability to move, postoperative state define the customer's ability to perform activities of daily living. Identifying these variables allows the development of an operating system for preventing falls that can be updated as new nursing assessments are performed. If the customers most likely to fall are identified, the professionals can take specific preventive and safety measures to preserve customers' health and the quality of care provided.¹⁶

EMPATHY

In this investigation, empathy was characterized by questions that verified the ability of the professional to put him/herself in the customer's place and to offer an individualized care; it includes accessibility, sensitivity and effort to meet the customer's expectations and needs. The study revealed that the groups did not differ in respect to empathy. The questions dealt with empathic care, customer's expectations and needs, customer satisfaction, professional qualification focussed on the customer, professional skills and empathy. Customer's rights vary according to cultural and socio-political contexts, depending on how they structure, implement and distribute individual, social and political rights in different situations and also how the relationship between health professional and customer was established.

Even so, there is growing international consensus on the following principles: customer's right to privacy, to confidentiality of diagnostic information, to consent to or refuse treatment and to be informed about the procedure's relevant risks.¹⁷

Table 7 highlights that empathy is directly related to individual profile and to the commitment to adapt environment and devices to customers' needs. From the perspective of the participants, the institution does not promote professional training focusing on empathy and this issue is present neither in training nor in the professional staff's performance evaluation.

Table 7 - Responses to open questions 21 to 25 on empathy, Campinas, São Paulo – 2010

Empathy	
Question	Responses
21	Public health service professionals are not empathetic No answer Lack of training on empathy
22	Care adapted to the customer Length of consultations adapted to customer's needs Environment and equipment adapted to customer Flexible visiting hours Appointment schedule and unscheduled visits when needed Respect for food preferences
23	Signs of satisfaction on professionals' level of empathy are unknown. Professionals are seldom praised by customers
24	There are no institutional guidelines regarding empathic care Institution does not offer training on empathic care
25	Empathy is not part of the performance assessment

CONCLUSION

The present study revealed the professionals' perception on factors involving the occurrence of AEs, related to the five dimensions of quality:

- **tangibles:** had the lowest rate – 38 (38.8%) – of affirmative answers to risks related to structure. The highest rate – 83 (84.7%) – was on human, material and physical resources; the groups differed in the latter as well as in safety related to equipment and participation in procurement policies; they agreed on sizing of human resources and the risks related to structure. The majority of participants – 57 (58.2%) – was dissatisfied with the quality of the institution's human resources.
- **reliability:** 86 (87.8%) participants would recommend the institution to relatives and friends. Information to customers on risks had the lowest rate – 60 (61.2%). The groups differed in established protocols, recommendation of the institution and professionals' participation; they agreed on the safe implementation of activities and the information to customers about risks.
- **responsiveness:** presented the highest rate of affirmative responses – 94 (95.9%) – on customer's right to refuse treatment. The lowest rate – 48 (49%) – was on customer guidelines manual. The groups differed in work process assessment and involvement in protocol development.
- **assurance:** the highest rate was found in risk monitoring – 61 (62.2%); the lowest – 43 (43.9%) – on information on AEs occurred and actions taken against them. The groups differed

in process monitoring, risk monitoring and definition of AE; they agreed on information to customers about EA occurrence and actions against EAs. The most cited AEs were: pathological effects expected or unexpected (according to package insert), medication error and fall.

- **empathy:** highest rates on customer satisfaction – 92 (93.9%) – and the lowest – 55 (56.1%) – on professional qualification focussing on the customer. There were no differences among the groups in the questions for this dimension.

Regarding the factors influencing AEs related to dimensions of quality, it was observed that:

- clinical analysts emphasized *tangibles*, *reliability* and *responsiveness*;
- physicians were less perceptive to *tangibles*, *responsiveness* and *assurance*;
- nutritionists were less perceptive to *reliability*;
- physiotherapists were less perceptive to *empathy*;
- pharmacists were less perceptive to *assurance*;
- nurses were more perceptive to *empathy*.

REFERENCES

1. Kohn LT, Corrigan JM, Donaldson MS. To Err is Human. Washington (D.C.): Committee on Quality of Health Care in America; 2000.
2. Brasil. Resolução n.50, de 21 de fevereiro de 2002. Dispõe sobre o regulamento técnico para planejamento, programação e avaliação de projetos físicos de estabelecimentos assistenciais de saúde. Brasília; 2002. [Cited 2011 abr. 23]. Available from: http://www.anvisa.gov.br/legis/resol/2002/50_02rdc.pdf
3. Brasil. Organização Nacional de Acreditação. Manual das Organizações Prestadoras de Serviços de Saúde. Brasília: Organização Nacional de Acreditação; 2010.
4. Abboud CS, Feldman LB. Implantação do Programa de Gestão de Risco (PGR): experiência do Instituto Dante Pazzanese de Cardiologia de São Paulo. Nursing. 2009; 11(129):71-6.
5. Hokerberg YHM, Santos MAB, Passos SRL, et al. O processo de construção de mapas de risco em um hospital público. Cienc Saúde Coletiva. 2006; 11(2):503-13.
6. Balestrin F. Gerenciamento de risco legal em saúde não evita apenas erros. Consultor Jurídico. 2003. [Cited 2011 mar. 19]. Available from: http://www.conjur.com.br/2003-nov-7/importancia_gerenciamento_risco_legal_saude
7. Feldman LB. Como alcançar a qualidade nas instituições de saúde. Critérios de avaliações, procedimentos de controle, gerenciamento de riscos hospitalares até a certificação. São Paulo: Matinari; 2004.
8. Kern AE, Lima APF, Feldman LB. Gerenciamento de riscos. Rev GTH. 2010; 2(2):28-30.
9. Adami NP. Melhoria da qualidade nos serviços de enfermagem. Acta Paul Enferm. 2000; 13(N Esp – Parte 1):190-6.
10. Monzoni A. Erros de medicação e subnotificação. Rev Coren SP 2006; 8(70):8-9.
11. Zeithaml V, Parasuraman A, Berry LL. Delivering service quality: balancing customer perceptions and expectations. New York: The Free Press; 1990.
12. Parasuraman A, Zeithaml V, Berry LL. Refinement and reassessment of the SERVQUAL dimensions. J Retailing. 1991; 67:420-50.
13. Leape LL, Bates DW, Cullen DJ, et al. Systems analysis of adverse drug events. JAMA 1995; 274(1):35-43.

14. Taxis K, Barber N. Ethnographic study of incidence and severity of intravenous drug errors. *BMJ*. 2003; 326(7391): 684-87.
 15. Carvalho VT, Cassiani SHDB. Erros na medicação e conseqüências para profissionais de enfermagem e clientes: um estudo exploratório. *Rev Latinoam Enferm*. 2002; 10(4):523-9.
 16. Marin HF, Bourie P, Safran C. Desenvolvimento de um sistema de alerta para prevenção de quedas em pacientes hospitalizados. *Rev Latinoam Enferm*. 2000; 8(3):34-41.
 17. Vaitsman J, Andrade GRB. Satisfação e responsividade: formas de medir a qualidade e a humanização da assistência à saúde. *Cienc Saúde Coletiva*. 2005; 10(3):599-613.
-