Comparison of nursing interventions performed and the records in a computerized system for primary health care

Comparação entre as intervenções de enfermagem realizadas e os registros em sistema informatizado para atenção básica

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Descritores
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Abstract

Objective: Compare the interventions performed by the nursing staff in a Primary Health Care Unit with the interventions recorded in the information system.

Methods: Descriptive, exploratory study conducted in two stages at a Health Unit considered as having good practices in nursing. Stage 1: direct, non-participatory and structured observation for five days. Stage 2: application of the cross-mapping technique in the activities recorded in the computerized system, adapting them in standardized language for nursing interventions.

Results: It was found that 23.5% and 27.2% of the interventions made by the nursing staff and nurses were recorded in the computerized system.

Conclusion: The computerized system displays insufficient fields to report the work carried out by the nursing team at the Primary Health Care Unit.

Resumo

Objetivo: Comparar as intervenções realizadas pela equipe de enfermagem em uma Unidade de Atenção Primária à Saúde com as intervenções registradas em sistema de informação.

Métodos: Estudo descritivo, exploratório realizado em duas etapas em uma Unidade de Saúde considerada de boas práticas de enfermagem. Etapa 1: observação direta, não participativa e estruturada durante cinco dias. Etapa 2: aplicação da técnica de mapeamento cruzado nas atividades registradas no sistema informatizado, adequando-as em linguagem padronizada de intervenções de enfermagem.

Resultados: Identificou-se que 23,5% e 27,2% das intervenções realizadas pela equipe de enfermagem e enfermeiros foram registradas no sistema informatizado.

Conclusão: O sistema informatizado apresenta campos insuficientes para relatar o trabalho realizado pela equipe de enfermagem em Unidade de Atenção Primária à Saúde.

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Introduction

The Family Health Strategy has its roots in primary health care and, as a strategy for changing the model of care, it proposes the use of specific technologies for the development of care practices. It is designed as a structuring axis for the reorganization of primary care with reordered repercussions for the entire Brazilian health system.[1]

This new care model inaugurated a paradigm that imposed the revision of the concept of work process in health and the operationalization of human resource policies for the sector, taking into consideration that the historical conditions for the number of workers in the Health System are factors intrinsically related to the effective consolidation of this system.

To achieve the goals proposed by the Family Health Strategy, there was need for a better structuring of information systems in health, ensuring the ongoing assessment of the health situation of the population and the results of actions taken, essential for the monitoring, control and transfer of resources. Thus, municipalities also became responsible for the production, organization and coordination of information on health.[2]

Given the marked expansion of the Family Health Strategy and the discussion of issues related to the amount of data collected by these teams, it was necessary to create an information system that would encompass the complexity of the organization of Primary Health Care.[3]

Fifteen years ago, in 1998, the Primary Care Information System was created, in which health professionals from family health teams, coming from home visits, enter data about medical and nursing care. Specifically, the D form is used by all staff at Units with the Family Health Strategy, to perform the recording of daily activities related to medical and nursing consultations, request for complementary laboratory exams, referrals, among others, as well as notification for some diseases.[3]

This System should allow information for managers to evaluate the productivity of the Unit and adequacy of resources to better meet the health needs of the community.

Thus, the information systems must contribute so that the data are transformed into information and then into knowledge that drives the practice of the health teams in their territory.[4] Among the possibilities for the use and application of the information generated, is the planning that becomes relevant for the nursing workforce in primary health care, in that it seeks to adapt the staff to the needs of the community, the safety of users and workers, as well as institutional objectives.

One way to gage the strength of teamwork in nursing refers to the identification of interventions/activities that are developed, as well as the frequency of their application. The objective of this work was to compare the interventions performed by the nursing staff in a Primary Health Care Unit with the interventions recorded in the information system.

Methods

This is an exploratory descriptive study with a quantitative approach.

The unit was selected to maintain an agreement with the University of São Paulo, an institution of researchers and to develop activities with the community and it is considered as having good practices. Located in the west end of the city of São Paulo, where for nine years the Family Health Strategy had been implemented.

The work team at this unit is comprised of six health teams (six physicians, six nurses, 12 nursing aides, 35 community health workers); a nurse, a unit manager; a nurse and a nursing technician for epidemiological surveillance and sterilization of materials; a physician for the exclusive activities of teaching and surveillance; ten administrative professionals; four dentists; a dental assistant; a dental hygienist; a psychologist; a social worker; an occupational therapist; a pharmacist; three pharmacy technicians; three cleaning assistants, and a security guard.

The unit is responsible for a territory with 5,639 families, which is equivalent to around 19,526 people, distributed in a population of between 20 to 39 years of age (7,503 people), a number of children: less than 1 year old (204), 1 to 4 years old (1,042),

5 to 9 years old (1,603), number of pregnant females: 10 to 19 years old: 21 (18.2%), 20 or more: 94 (81.8%), number of elderly: more than 60 years old (1769) and people with a health plan coverage: 2,749 (14.05%). The sessions of the unit are conducted from Monday to Friday (7:00 am to 6:00 pm), with weekly scheduling and daily sessions to cover spontaneous demand.

To grasp the type and frequency of nursing interventions, a direct, structured and non-participatory observation of the activities undertaken by nursing staff was conducted during one week of typical services at the unit. The study included all the nursing staff who were present in the unit during the collection period and who had agreed to participate.

The observation was structured from the instrument proposed and validated by Bonfim (2012),[5] which includes 49 nursing interventions developed in Primary Health Care in a standardized language, according to the Nursing Interventions Classification (NIC) taxonomy.[6] The survey of the activities that compose the instrument was conducted through review of literature, field observation and reading charts.

Two nursing students received theoretical and practical training to apply the instrument.

The work sampling technique was used to collect the data, which consists of [...] making intermittent observations in a period considerably longer than generally used in the timekeeping study, and it involves an estimate of the proportion of time spent in a given type of activity in a certain period, through instant, intermittent observations...[7]

Intermittent observations were made every ten minutes, followed by annotation of the instrument. One observer for up to six nursing staff was distributed.

For analysis, data were grouped according to the classification:[6,8]

- Direct care interventions: treatment performed by means of interaction with the user, family and community, set up in physiological and psychosocial actions which encompass practical actions and those for support and advice.

- Indirect care interventions: treatment performed away from the user, family and community, but for their benefit covering actions focused on management of the unit and interdisciplinary collaboration.

- Activities associated to the work: those that must be performed by other workers in other categories, but which the nursing professional takes on.

- Personal activities: necessary breaks in the working day to meet the physiological and personal communication needs of the workers.

To enable the comparison of data coming from the observation of the data in form – D, activities appearing in the file were mapped in interventions according to NIC taxonomy, using the cross-mapping technique. This technique "enables studies demonstrating that nursing data, existing in different locations, can be mapped in Nursing Classifications, and thus adapted to standardized language".[9]

The study development followed the national and international ethics standards for human research.

Results

Data were collected in the period of 14 to 18 February 2011, resulting in 5079 samples of interventions/activities performed by the nursing team.

The study team was composed of six nurses and 11 nursing aides/technicians, all female, with an average age of 35 for nurses and 51 for nursing technicians/aides, with 9 and 12 years of experience in Primary Health Care and 5-10 years of experience in the Unit studied, for nurses and nursing technicians/aides respectively. Both professionals have a workload of 40 hours per week.

It was found that 14 (29%) of nursing interventions proposed in the Bonfim instrument[5] were not carried out by the team during the data collection period or composed in another intervention, such as the intervention relating to the activity of referral, which happens most frequently during the activity of consultation.

The frequency of application of nursing interventions/activities for the team studied is presented in table 1.

Table 1. Interventions/activities performed

Classification	Interventions	Nursing Aides/Technicians %	Nurse %
Direct Interventions	Home visit	7.8	3.7
	Assistance to spontaneous demand	3.6	8.8
	7910 Consultation	0.0	10.8
	5604 Teaching: Group	2.2	5.0
	7680 Examination Assistance	3.2	2.3
	6530 Immunization/Vaccination Management	4.2	0.0
	7400 Health System Guidance	2.3	1.4
	2300 Medication Administration	2.3	0.2
	6680 Vital signs Monitoring	1.8	0.4
	4238 Phlebotomy: Venous Blood Sample	1.8	0.2
	3660 Wound Care	1.4	0.2
	6200 Emergency Care	0.6	0.9
	5618 Teaching: Procedure/Treatment	0.7	0.2
	5510 Health education	0.1	1.0
	0960 Transportation	0.4	0.2
	3440 Incision Site Care	0.4	0.0
	2000 Electrolyte Management	0.1	0.0
	Total	32.8	35.1
Indirect Interventions	8020 Multidisciplinary Care Conference	8.5	22.1
	7920 Documentation	9.3	6.5
	7960 Health Care Information Exchange	3.3	10.7
	7850 Staff Development	4.9	4.5
	6480 Environmental Management	3.2	0.8
	7840 Supply Management	2.5	0.4
	6540 Infection Control	1.1	0.1
	8500 Community Health Development	0.9	0.0
	6654 Surveillance: Safety	0.4	0.1
	8120 Research Data Collection	0.3	0.2
	7650 Delegation	0.1	0.5
	8820 Community Disease Management	0.3	0.2
	7830 Staff Supervision	0.0	0.5
	7690 laboratory Data Interpretation of	0.0	0.3
	6610 Risk Identification	0.0	0.2
	7710 Physician Support	0.1	0.0
	7726 Preceptor: Student	0.0	0.1
	Total	34.9	47.0
Activity	Associated	6.0	5.5
	Personal	26.2	12.4

For the registration of these activities, the computerized system has the D form, consisting of 19 activities; it was mapped in four areas, seven classes and 10 interventions, according to the NIC taxonomy. Comparing the mapping of form D with the interventions observed and their respective frequencies, it was shown that only 23.5% and 27.2% of the interventions/activities performed by nursing aides/technicians and nurses respectively, are likely to be registered on the form (Table 2).

Table 2. Comparison between the activities, interventions and the time expended

SIAB - Form D	Activities	Interventions	% Time expended	
			Nursing Aides/ Technicians	Nurse
Nursing Care	Child Care	7910 Consultation	0.00	10.80
	Prenatal			
	Prevention of cervical uterine cancer			
	Diabetes			
	STD/AIDS			
	Arterial hypertension			
	Hansen's disease			
	Tuberculosis			
Procedures	Individual care for professional with higher education			
	Visit for sanitary inspection	6480 Environmental Management	0.00	0.00
	Bandages	3660 Wound Care	1.40	0.20
	Inhalations	2300 Medication Administration	2.30	0.20
	Injections			
	Removal of stitches	3440 Incision Site Care	0.40	0.00
	Oral re-hydration therapy	2000 Electrolyte Management	0.10	0.00
	Group care - Health Education	5604 Teaching: Group	2.20	4.90
	Collective procedures	5510 Health Education	0.10	1.00
	Home visit	Home visit	7.80	3.70
Nursing notifications	Nursing notifications	7920 Documentation	9.30%	6.50
	Perinatal hemolytic disease			
	Fracture of the femoral cervix in > 50 years of age			
	Tuberculous meningitis in < 5 years of age			
	Hansen's disease Incapacity II and III			
	Oncotic cytology NIC III/ carcinoma *in situ*			
Total			23.50%	27.20

Discussion

The fact that this investigation was carried out in a Primary Health Care Unit with the Family Health Strategy constitutes a limitation in the results of the research, as observational studies require a diversity of realities.

The few studies that address the information system as a management tool for planning the workforce restricted the opportunities for discussion of the results found.

The purpose of this study was to determine how much the existing information system to record the nursing interventions/activities is able to portray the scope of work developed, thereby providing evidence to support planning actions for the nursing workforce at the unit.

The purpose of the health information is to identify individual and collective problems of a population's health situation, providing elements to analyze the given situation and support health planning. Thus, information systems are considered important elements for control, monitoring and evaluation actions in health care.[10]

The instrument used for data collection managed to portray the work developed by the nursing staff at the Unit for Primary Health Care, and it proved to be broad and diverse, seizing all areas of NIC, i.e., being able to portray actions directed to the user/family/territory.

The D form was shown to be not very informative in expressing the work developed by the nursing staff at thet Primary Health Care Unit with Family Health Strategy, as the limitation of the number of activities and the lack of diversity of interventions in form-D undermine and restrict the use of this system to describe and assist in planning the nursing workforce for Primary Health Care Units.

Regarding the frequency distribution for performing activities by nurses, the interventions that spent more working time were indirect care (47 %), represented by Multidisciplinary Care Conference (22.1 %), Health Care Information Exchange (10.7%) and Documentation (6.5 %). These data corroborate the study in the Ribeirão Preto primary network, where 46% of the nurses' time was focused on organization, coordination and articulation of nursing activities, and of these with other workers, and 39% corresponded to the activities carried out directly with the user.[11]

The frequency of direct care interventions represented 35% of the nurses' time, with emphasis on Consultation (10.8%), and Assistance to Spontaneous Demand (8.8%), Teaching: Group (5%) and Home Visits (3.7%).

As regards the interventions made by nursing aides/technicians, the percentage of time spent during the workday was also more significant for indirect interventions (34.9%), with more emphasis on Documentation interventions (9.3%) and Multidisciplinary Care Conference (8.5%).

Among the interventions/activities performed by nursing staff, there were only a few observed as being liable for registering on the D form, which are mostly related to direct care interventions, performed specifically with the user. This indicates that the increased use of the primary care information system is aimed at the numerical surveying of some health conditions, in order to generate production reports for the unit, limiting the possibility of registration of the interventions that are complementary to the work of the nursing team and are relevant within the Family Health Strategy proposal, besides the importance for comprehensive health care.

Activities such as continuous education, attending meetings (staff meetings, community meetings and meetings with social facilities) are actions, among others, that are considered as central within the guidelines and standards for the organization of Primary Health Care for the Family Health Program and the Community Health Agents Program.[12] However, these are not part of the regular records of the primary care computerized system, making it difficult to view the scope of work developed by the nursing staff in the Family Health Strategy units.

Several studies have analyzed the use of the primary care information system and point to the potential of the system as to the support for management of units; however, despite their importance,

weaknesses have been reported that permeate issues such as: the lack of training for the handling of the system; incorrect reporting and underreporting; the non-use as a guide for professional actions and activities; as well as in the process of decision making and action controls; and the lack of data on oral health record.[4]

Considering the purpose of the registration system for the Primary Health Care Units in the Family Health Strategy, as a tool for systematic monitoring and evaluation of actions taken and results achieved, as part of the planning and programming process aimed at the realignment of the work process, it is considered that its importance could be enhanced if some improvements occurred in the software, in the forms and the reports.

With a view to these changes, the Ministry of Health is committed to restructuring the primary care information system, aiming at improving the quality of health information and its use by managers, health professionals and citizens. The changes were aimed at making the evaluation and monitoring system capable of reflecting the complexity and heterogeneity of the various local realities and the different levels of management of the National Unified Health System (SUS, as per the acronym in Portuguese).[13]

The starting point of this restructuring was to improve the detailing of information, that was previously consolidated, for the prospect of using individualized data, enabling monitoring of each user attended, as well as the actions taken by each professional in the team. Furthermore, it went on to integrate the various information systems in Primary Health Care, reducing the need to record the same information in more than one instrument (forms/systems), approaching the information produced in the process of working professionals, qualifying health care and the culture of information usage.[13]

Conclusion

The computerized system for primary care, official registration form (form-D), is incomplete, reducing information about the work of the nursing staff at Primary Health Care Units with the Family Health Strategy, as well as in the capture of data which could portray the daily practice and assist in the planning of the nursing team workforce.

Collaborations

Bonfim D; Laus AM; Fugulin FMT and Gaidzinski RR declare that they contributed in the design and development of the research, writing, revision of the article and the final approval of the version to be published.

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