



Time standards of nursing in the Family Health Strategy: an observational study*

Padrões de tempo médio das intervenções de enfermagem na Estratégia de Saúde da Família: um estudo observacional

Estándares de tiempo medio de las intervenciones de enfermería en la Estrategia de Salud de la Familia: un estudio observacional

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ABSTRACT

Objective: To determine time standards for interventions and activities conducted by nursing professionals in Family Health Units (FHU) in Brazil to substantiate the calculation of work force. **Method:** This was an observational study carried out in 27 FHU, in 12 municipalities in 10 states, in 2013. In each unit, nursing professionals were observed every 10 minutes, for eight work hours, on five consecutive days via the work sampling technique. **Results:** A total of 32,613 observations were made, involving 47 nurses and 93 nursing technicians/assistants. Appointments were the main intervention carried out by nurses, with a mean time of 25.3 minutes, followed by record-keeping, which corresponded to 9.7%. On average, nursing technicians/assistants spent 6.3% of their time keeping records and 30.6 intervention minutes on immunization/vaccination control. **Conclusion:** The study resulted in standard times of interventions carried out by the FHU nursing team, which can underpin the determination of nursing staff size and human resource policies. Furthermore, the study showed the panorama of interventions currently employed, allowing for the work process to be reviewed and optimized.

DESCRIPTORS

Primary Health Care; Community Health Nursing; Public Health Nursing; Health Manpower; Workload.

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INTRODUCTION

There are few studies on how nursing professionals spend their working time in primary health care units. On the other hand, there is a notorious need for information to underpin managerial decision making, both in terms of workforce planning and when analyzing and implementing changes in nursing practices, in accordance with advances proposed for healthcare models.

In Brazil, primary health care (PHC) has grown via the Family Health Strategy (FHS). Between 1981 and 2008, the search for primary care services by Brazilians increased approximately 450%⁽¹⁾. In 2011, 95% of Brazilian municipalities and 53% of the Brazilian population were covered by the FHS⁽²⁾.

In the FHS, teams are multiprofessional and composed at the least by a general practitioner or physician specialized in family health or a family and community physician, a general nurse or nurse specialized in family health, a nursing technician or assistant, and four community health agents. Dental professionals are sometimes part of this multiprofessional team, and include general or family health surgeon-dentists and a dental assistant and/or technician. These professionals hold 40-hour working weeks at the FHS, with the exception of medical professionals, whose workload can be re-distributed among other municipal health services⁽³⁾. This team is responsible for 4,000 people at the most, being that the recommended average is 3,000. This number is calculated by respecting equity criteria and has recently changed to 2,000 people per team⁽⁴⁾.

Several studies have described positive evidence of the implementation of the FHS⁽⁵⁻⁶⁾. However, they emphasize that one of the greatest obstacles to its effective consolidation lies in the quantitative and qualitative lack of professionals prepared to deal with the new attributions required by this care model⁽⁷⁾.

Furthermore, the parameters recommended nationwide regarding the FHS staff size do not always meet local epidemiological characteristics and the demands of the health surveillance model⁽⁸⁾. Therefore, predicting the necessary number of professional to meet the demands of a family health unit (FHU) is not an easy task.

Workforce planning in health is a broad and complex issue, which involves not only a technical process, but also a political and ethical one. The latter depends on values that reflect the political, economic and social choices that are at the basis of a healthcare system. Such planning requires seeking balance between available workforce and that necessary to carry out health services. Estimating the number of professionals and the skills needed in order to reach health policies and goals requires a systematic process, which requires monitoring, ongoing assessment, and evidence to underpin the process, with reliable and accessible data on the work conducted by professionals.

The mean time of care to meet the needs of users, families and the community is the central variable in health staffing methods. However, many measures of time are based only on the professional judgment or experience. There is a

lack of studies that use objective and empirical time measures of interventions/activities carried out by the FHS.

Current methods such as the Workload Indicators of Staffing Need (WISN)⁽⁹⁾, proposed by the World Health Organization (WHO), have been employed in health organizations in several countries, advancing the proposal of workforce planning for all team members, which indicates great promise for its applicability in the FHS. Its main variable is based on time standards, i.e., the time needed for a trained, qualified and motivated professional to conduct an intervention or activity according to satisfactory professional standards under the conditions and circumstances of each location⁽⁹⁾.

Before this scenario, the aim of the present study was to determine time standards of interventions/activities carried out by nursing professionals in FHU in Brazil in order to substantiate workforce calculation.

METHOD

This was an observational study conducted via the work sampling technique. It is recommended that in research on time of work of health professionals, data be collected from services that follow good practices. Thus, for this study, we chose an intentional sample, based on the following criteria: geographic location, the presence of a complete family health and dental health team, having received a great assessment in the first cycle of the Primary Care Access and Quality Improvement Program (PMAQ-AB).

In order to ensure greater comparability of performance among teams, the PMAQ considered the diversity of socioeconomic, epidemiological and demographic scenario, in addition to differences between participating municipalities and specificities of the responses demanded from local health systems, classifying each municipality into different strata considering social, economic and demographic aspects. To this end, an index from zero to ten was created, composed of five indicators: gross domestic product (GDP) per capita (weight 2), percentage of the population with health insurance (weight 2), percentage of the population who benefit from the government's Family Grant (*Bolsa Família*) program (weight 1), percentage of the population living in extreme poverty (weight 1) and demographic density (weight 1)⁽¹⁰⁾.

Demographic socioeconomic strata were defined as follows: Stratum 1 (score lower than 4.82 and population up to 10,000); Stratum 2 (score lower than 4.82 and population up to 20,000); Stratum 3 (score lower than 4.82 and population up to 50,000); Stratum 4 (score between 4.82 and 5.4 and population up to 100,000 and municipalities with a score lower than 4.82 and a population between 50,000 and 10,000); Stratum 5 (score between 5.4 and 5.85 and population up to 500,000; and municipalities with scores lower than 5.4 and population between 100,000 and 500,000); and Stratum 6 (population over 500,000 or score equal or greater than 5.85)⁽¹⁰⁾.

According to these guidelines, data were collected from five Brazilian geographical regions, 10 states, 12 municipalities and 27 FHU. Participants consisted of FHU nurses and

nursing technicians/assistants who were present at the time of data collection and agreed to participate in the survey. Nurses who worked exclusively in management positions were excluded from the sample.

Prior to data collection, a field visit was conducted with the goal of planning data collection logistics, presenting the study to FHU professionals and clarifying that at no point was the quality of service provision being assessed, as that had already been done by PMAQ and the unit in focus had been considered of excellence. During the entire data collection process, this premise was reinforced, thus minimizing the reactivity of professionals to the direct observation of their work.

The minimum ratio of field researchers, considering the minimum team proposed for FHU, consisted of one supervisor and one observer for every six professionals. Priority was given to arrangements in which the observer accompanied the same professional category and the same professionals throughout the entire data collection period.

The observers did not establish prior contact with FHU professionals. Observations were non-participant and professionals were only asked questions about activities when something was not clear to the observers.

Data were collected through structured, non-participant observation and the interventions and activities were recorded every ten minutes, throughout the entire work shift at the unit (8 hours per day), for a full workweek (5 days) between March and October 2013.

The instrument used to gather data was developed and validated for a FHS team (physician, nurse, surgeon-dentist, nursing technician/assistant, dental technician/assistant, and community health agent). Data were collected on the time of 39 health interventions, unit related activities, standby time and absences. This instrument was encoded and computerized, which allowed us to record the observations on tablets⁽¹¹⁾.

The observers consisted of nurses who underwent 20 hours of theoretical and practical training. Interobserver reliability was conducted during data collection.

For interventions conducted outside the FHU, such as home visits or community groups, the observers did not accompany the professional, only recording the amount of time spent at the intervention. To ensure better control, the professionals were asked to inform their observers about when they were leaving and when they returned. Conversations among professionals inside the offices were presumed to be of professional nature.

Researchers were provided with the following mandatory material: a lab coat with "researcher" written on it, a badge and a tablet. Observers had the right to a one-hour lunch break and other breaks for personal needs, being covered by the field supervisor as the facilitator, ensuring a good data collection process and carrying out the reliability test.

This study was approved by the São Paulo School of Nursing research ethics committee (no. 170278) and the municipal secretariats of health. All procedures abided by the guidelines set forth in National Health Council Resolution no. 466, of December 2012.

The data were statistically analyzed by strata, grouped from 1 to 4, 5 and 6, considering the total number of FHU sampled in Brazil. This was done to ensure greater equity to the comparison between FHUs, in addition to providing time parameters that could be applied to different realities.

The following adjustments were made to calculate the mean time of interventions/activities:

Standby time was distributed proportionally among interventions that involve time waiting for late and absent users, or when professionals are scheduled for that type of care, as commonly occurs in the immunization room. Interventions that received this additional time were: assisting in tests/procedures, attending to spontaneous demands, consultations, immunization/vaccination control, outpatient procedures and home visits.

Personal time was distributed among all of the care interventions and activities and associated activities, as the literature has shown the importance of such time in issues regarding workers' health and job satisfaction.

The times for each intervention/activity according to professional category were obtained by the following equations:

Equation 1:

$$TO = NO \times 10 \text{ min}$$

TO = Time of Observation for each intervention/activity;

NO = Number of observed samples.

*10 minutes refers to the interval of time used in the work sampling technique.

Equation 2:

$$\overline{TP}_i = \frac{TO_i + TER_i + TPR_i}{NO_i}$$

Where:

\overline{TP}_i = Mean time of intervention i ;

TO_i = Total time of observation for intervention i ;

TER_i = Standby time apportioned to intervention i ;

TPR_i = Personal and apportioned time for intervention/activity i ;

NO_i = Number of observations for i .

For the following interventions: educational actions for health professionals; administration of medications; providing physician with support; assisting in tests/procedures; breastfeeding assistance; attending to spontaneous demand; consultations; immunization/vaccination control; urgency/emergency care; outpatient procedures; promotion of educational actions; venous puncture; venous blood sampling; administration meetings; health surveillance; and sharing information on care provided; the variable NO_i corresponded to the number of records regarding the same user or the same activity, i.e., the frequency of the intervention and not of the sample.

In order to ensure a better assessment of the mean time of home visit interventions, NO_i referred to the number of visits conducted and not the number of samples observed.

The productivity of nurses and nursing technicians/assistants was analyzed considering effective working time, i.e., the sum of the percentage of working time spent by professionals on direct and indirect care activities associated with working and waiting time.

RESULTS

One hundred and forty professionals (nurses and nursing technicians/assistants) were observed throughout the Brazilian territory, producing a total of 32,613 observations. Of these: 10,669 (33%) were in municipalities from strata 1 to 4; 4,415 (13%) from stratum 5, and 17,529 (54%) in stratum 6. In 15% of the total number of observations, we conducted reliability tests, which resulted in 79% of interobserver agreement.

Most of the nurses who participated in the study were women (91%) between the ages of 30 and 39 (47%), with graduate-level specialization degrees (92%) in public/collective health (38%), followed by family and community medicine (13%). In terms of professional experience, 32% had between 10 and 15 years, 34% had 5 to 10 years with PHC and 47% had worked at the FHU for 1 to 5 years.

Regarding nursing technician/assistant participants, most were women (91%), between 30 and 49 years old, with complete elementary, secondary or technical education (84%). Furthermore, most presented 5 to 10 years of professional experience (26%), and experience with PHC and FHU, respectively, of 1 to 5 years (33% and 42%).

Of the 27 observed FHU, 48% (13) belonged to strata 1 to 4; 11% (3) to stratum 5 and 41% (11) to stratum 6, with urban coverage (81%), but also mixed (7%) and rural (11%). There was a predominance of one team per unit (52%), with the greatest variety of number of teams present in stratum 6. Most FHU were teaching units (93%).

After excluding the percentage of observations conducted simultaneously for reliability testing, we analyzed 27,846 of distributed observations, as shown in Table 1.

Tables 2 and 3 present the frequency and mean time of observed interventions.

Table 1 – Distribution of interventions/activities conducted by nurses and nursing technicians/assistants, by demographic socioeconomic strata, between March and October 2013 – Brazil, 2015.

	Strata 1 to 4				Stratum 5				Stratum 6				Brazil			
	Nurse		Tec./Assist.		Nurse		Tec./Assist.		Nurse		Tec./Assist.		Nurse		Tec./Assist.	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Interventions	1950	60	2559	47	775	53	797	31	2713	61	4243	40	5438	59	7599	41
Direct care	961	49	1588	62	434	56	627	79	1407	52	2397	56	2802	52	4612	61
Indirect care	989	51	971	38	341	44	170	21	1306	48	1846	44	2636	48	2987	39
Unit-related Activities	358	11	654	12	56	4	174	7	232	5	1700	16	646	7	2528	14
Personal Activities	367	11	873	16	130	9	315	12	720	16	1765	17	1217	13	2953	16
Standby time	104	3	617	11	27	2	399	16	146	3	1898	18	277	3	2914	16
Absences	403	12	665	12	392	27	791	31	553	12	731	7	1348	15	2187	12
No observation	82	3	104	2	90	6	92	4	100	2	271	3	272	3	467	3
Effective working time	2412	74	3830	70	858	58	1370	53	3091	69	7841	74	6361	69	13041	70
Total	3264	100	5472	100	1470	100	2568	100	4464	100	10608	100	9198	100	18648	100

*Tec./Assist.: Nursing technician/assistant. ** **Direct care**: care provided directly to users, families/ and communities; **Indirect care**: care provided away from users, families and communities, but in their benefit; **Unit-related activities**: those that can be executed by other professional categories, but are assigned to health professionals; **Standby time**: when professionals are available for care provision, waiting for users and/or professionals who are not present at the time of observation, either due to absence and/or tardiness of users and/or professionals, lack of demand, or the other professional is busy with another activity; and **Absences**: when the professional leaves the unit to perform activities unrelated to the FHU.

Table 2 – Mean time in minutes and probability of occurrence (%) of interventions conducted by FHU nurses – Brazil, 2015.

Interventions	Strata 1 to 4		Stratum 5		Stratum 6		Brazil	
	Time	Freq. (%)	Time	Freq. (%)	Time	Freq. (%)	Time	Freq. (%)
Educational actions for health professionals	24.0	0.6	174.0	6.3	67.0	2.0	73.0	2.1
Administering medication	12.0	0.1	-	-	13.0	0.0	13.0	0.1
Supporting students	11.0	0.4	13.0	0.9	11.0	2.0	12.0	1.0
Assisting in tests/procedures	14.0	0.3	-	-	20.0	1.0	19.0	0.6
Attending to spontaneous demands	30.8	8.5	32.1	5.5	16.1	7.5	23.3	7.5
Appointment	32.4	7.1	36.7	13.4	19.4	14.2	25.3	11.6
Community Disease Management	11.0	0.0	12.0	0.3	-	-	12.0	0.1
Immunization/vaccination control	24.0	1.3	27.0	0.2	29.0	0.0	25.0	0.7
Infection control	12.0	0.0	11.0	0.3	12.0	0.0	12.0	0.1
Supply control	11.0	0.6	-	-	12.0	1.0	12.0	0.5
Organizing work processes	11.0	2.9	11.0	1.7	12.0	5.0	12.0	3.7
Developing administrative processes/routines	13.0	0.8	-	0.0	13.0	0.0	13.0	0.3

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Interventions	Strata 1 to 4		Stratum 5		Stratum 6		Brazil	
	Time	Freq. (%)	Time	Freq. (%)	Time	Freq. (%)	Time	Freq. (%)
Documentation	11.0	11.6	12.0	5.7	13.0	16.0	12.0	12.4
Interpreting laboratory data	12.0	0.4	11.0	0.1	11.0	0.0	11.0	0.2
Mapping and territorialization	12.0	0.3	-	0.0	15.0	0.0	13.0	0.1
Monitoring vital signs	12.0	0.6	13.0	0.2	13.0	0.0	12.0	0.3
Health System Guidance	12.0	1.1	12.0	0.2	13.0	1.0	12.0	1.0
Outpatient procedures	21.6	0.1	44.0	0.1	14.5	0.2	19.3	0.1
Promoting educational actions	19.4	2.5	44.6	4.8	31.4	1.9	28.0	2.6
Referrals and counter-referrals	11.0	0.5	-	-	13.0	0.0	11.0	0.3
Administration meetings	75.0	6.4	324.0	7.0	37.0	5.0	60.0	5.9
Meeting for evaluation of multidisciplinary care	63.0	1.1	58.0	1.2	29.0	3.0	35.0	1.9
Unit work supervision	12.0	0.3	12.0	0.1	14.0	1.0	13.0	0.4
Sharing information about care provided	12.0	6.4	12.0	3.5	12.0	7.0	12.0	6.2
Health surveillance	12.0	0.6	-	-	13.0	2.0	12.0	1.3
Home visits	25.9	8.1	66.1	5.1	54.1	3.9	35.6	5.6

Table 3 – Mean time in minutes and probability of occurrence (%) of interventions conducted by FHU nursing technicians/assistants – Brazil, 2015.

Interventions	Strata 1 to 4		Stratum 5		Stratum 6		Brazil	
	Time	Freq. (%)	Time	Freq. (%)	Time	Freq. (%)	Time	Freq. (%)
Educational actions for health professionals	26	0.70	135	2.30	87	2.00	66	1.40
Administering medication	12.8	1.10	13,9	2.30	13,5	1.50	13.4	1.50
Supporting students	12	0.30	-	0.00	14	0.20	13	0.30
Supporting physicians	12	0.10	19	0.10	19	0.10	18	0.10
Assisting in tests/procedures	48.2	0.60	48.1	1.00	14.6	1.50	23	1.20
Attending to spontaneous demands	15.8	0.10	39	1.60	30.2	0.90	32.2	0.80
Electrolyte control	12	0.00	13	0.50	12	0.10	12	0.10
Immunization/vaccination control	39.3	6.50	39	10.20	21.1	5.20	30.6	6.20
Infection control	13	1.40	15	0.40	14	2.00	13	1.40
Supply control	13	2.30	15	1.60	13	5.00	13	3.60
Organizing work processes	12	1.30	-	-	13	1.00	13	1.00
Urgency/emergency care	38	0.10	-	-	11	0.00	20	0.10
Developing community health	12	0.10	-	-	14	0.00	13	0.10
Developing administrative processes/routines	13	0.20	-	-	13	0.00	13	0.10
Documentation	13	9.50	14	3.20	13	11.00	13	9.30
Risk identification	-	0.00	14	0.20	13	1.00	13	0.40
Monitoring vital signs	13.1	5.60	12.8	3.90	13	4.00	13	4.50
Health System Guidance	13	1.50	14	1.80	13	2.00	13	1.50
Outpatient procedures	44.1	1.60	40.9	1.30	20.2	2.30	27.8	1.90
Promoting educational actions	25.1	1.00	24.6	0.30	28.6	1.70	27.6	1.30
Venous puncture: venous blood sampling	-	-	-	-	12.5	1.60	12.5	0.90
Referrals and counter-referrals	13	0.80	-	-	13	0.00	13	0.30
Administration meetings	60	1.70	-	-	88	2.00	74	1.40
Meeting for evaluation of multidisciplinary care	62	0.20	-	-	44	2.00	45	1.00
Safety supervision	13	0.10	-	-	13	0.20	13	0.20
Institutional transportation	14	1.00	-	-	13	0.00	14	0.40
Sharing information on care provided	13	3.30	15	1.60	13	3.00	13	3.00
Health surveillance	12	0.20	15	0.30	12	1.00	13	0.40
Home visits	48.5	10.20	71.6	2.00	39.7	2.30	47.7	4.60

DISCUSSION

This type of study is new in Brazil, and its importance lies in the diversity and national extent of the studied realities, both in quantity of observations and the identification of frequencies of interventions/activities carried out by nursing professionals. This allows for a more realistic and objective calculation of mean time of interventions and consequently, workload at the FHU.

The results show that nurses spend more time during their work shifts on direct and indirect care interventions and absent periods than nursing technicians/assistants. However, the technical staff spent more time on associated activities, personal activities and waiting time.

In contrast with nurses, nursing technicians/assistants presented greater diversity and amplitude in the number of low-frequency activities. In turn, nurses conducted fewer interventions at higher frequencies.

Interventions such as consultations, attending to spontaneous demands, and home visits were among the most frequent activities and compose the characteristic triad of the care provision dimension. They represent a significant portion of the workload of FHU nurses. Furthermore, these practices have the potential to broaden the access of users to the service, humanizing care and functioning as a device to reorganize the work process⁽¹²⁾.

Direct care provided by nurses in FHU from strata 1 to 4 were more focused on attending to spontaneous demands and making home visits and lesser so on appointments when compared to FHU in strata 6. For the most part, smaller municipalities are more receptive to spontaneous demands, but have not yet incorporated nursing appointments to the routine of FHU nursing practices.

In contrast, among FHU from strata 6, appointments and attending to spontaneous demands stood out as the most common interventions, with a higher percentage of occurrence when compared to other strata. On the other hand, interventions such as home visits and promoting educational actions presented lower percentages, from which we can infer that more developed and/or higher population municipalities allocate most of the nurses' direct interventions on clinical care and less on external and educational activities.

The nursing technician/assistant category is rarely described in the literature. We observed that a quarter of their working time was spent on direct care and, even though there were no studies available for comparison, we believe that the proportion observed must be reviewed given the work dynamics of these professionals, whose potential is underexplored. Their practices should be re-organized in the direction of care comprehensiveness⁽¹³⁻¹⁴⁾.

In Brazil, immunization/vaccination control and the administration of medication are conducted mostly by nursing technicians/assistants. Nurses are not usually responsible for these activities, and when they are, they take up approximately 0.1% of their working time.

Reflections must be conducted on how to make the practice of nursing technicians/assistants more effective in light of this category's potential in collective health actions.

It is also worth emphasizing the importance of nurses in the management, organization and coordination of the work process and clinical care.

Indirect care interventions compose a significant part of the workload. The results showed that nurses spend up to five times more time than nursing technicians/assistants in administration meetings and organizing work processes, even when they do not work exclusively with unit management.

The results showed that documentation was one of the most frequent interventions conducted by nurses and nursing technicians/assistants. However, the values presented by studies conducted in other contexts, such as surgical centers, nursing homes, and community centers in the U.S. showed higher percentages⁽¹⁵⁻¹⁷⁾.

We also emphasize the importance of the indirect care provided to users, families and communities, reinforcing the idea that much of what is done by the nursing staff is invisible⁽¹⁸⁾.

Sharing information on care provided was among the most frequent indirect care interventions, which we believe indicates a positive and important result, as it strengthens communication, work relationships between team professionals, and collaborative practices. This intervention was more frequent in strata that presented a higher percentage of time spent on spontaneous demands.

Regarding educational actions for health professionals, nurses dedicated a higher percentage of time on this intervention when compared to technicians/assistants. However, units from strata 1 to 4 represented only 0.6% for both categories. Evaluators who participated in the PMAQ observed the insufficiency of professional training programs or ongoing health education actions that support the good development of teams⁽¹⁹⁾.

Several studies have indicated the need for ongoing education aimed at nursing professionals, recommending greater investment. In particular, nursing assistants complain of the scarcity of courses, which are offered only sporadically. Furthermore, when they are offered, such programs address themes that do not correspond to the real needs of their routine work processes and are considered a hindrance to the quality development of their activities^(13-14,20).

The small participation of nursing technicians/aids in multidisciplinary care assessment meetings portrays the absence of these professionals when planning and discussing care, reinforcing their institutionalized technical role. The role of these professionals within the family health team must be reconsidered.

The mobilization of adequate nursing care resources is a concern for nursing managers worldwide. Thus, variables such as mean time of nursing activities are essential, given that the authors consider that understanding the workload of nurses is crucial to the staff planning⁽²¹⁾.

The use of mean times and/or socioeconomic and demographic strata in Brazil in order to determine nursing staff size enables projections that are in accordance with the population of coverage areas and consequently, closer to the reality of municipalities and the proposal of the FHS.

The mean time of appointment interventions was 25.3 minutes (SD=17.6). Parameters set by the Brazilian Min-

istry of Health proposes three consultations/hours, i.e., 20 minutes per consultation⁽²²⁾. According to the Nursing Interventions Classification (NIC), the mean time of an appointment is between 46 and 60 minutes⁽²³⁾, longer than that found in this study. However, it is worth mentioning that the times suggested by the NIC taxonomy⁽²³⁾ are based on the opinions of professionals, which tend to be higher than measured values. Other than the NIC, we found no research that offered data for us to compare the time of other interventions and activities conducted in PHC and especially FHS.

Unit-related activities represented 7% of the nurses' working time in Brazil, and the double of that for nursing technicians/assistants. Therefore, it is crucial to discuss issues and conduct studies regarding administrative support professionals in FHU. In so doing, health professionals can dedicate their working time to users, families and communities, and units can count on qualified and dedicated administrative support for such functions.

Standby time is an activity that is scarcely found in the literature, as it is not usually considered a category of analysis. It is also more characteristic among non-hospital services, such as outpatient and primary health care units. There was a high percentage of standby time in the FHU among nursing technicians and assistants, as these professionals are restricted to schedules. Thus, optimizing their working time in daily practice and offering dynamic, attractive and accessible services/activities to the community proves difficult.

We also found no references in the literature describing periods of absence during the workday, observed and demonstrated only by this study. However, it is important to emphasize that such period of absences observed in the FHU goes against primary health care guidelines⁽³⁾ and interfere directly in the amount of effective working time.

Measuring nursing workload and the use of data relative to time spent on activities not related to care allows us to understand the meaning of effective working time and productivity in health services. Furthermore, it represents an important management tool. Time spent waiting and absent from the unit during work hours could be used to benefit users. In so doing, the productivity of both professional categories could be elevated to approximately 80%.

A study showed that access, resolvability, and universal coverage are issues that walk hand in hand with professional productivity. Precarious health practices provided by professionals contribute to the low usage of health services by vulnerable populations, and improved performance could increase such use⁽²⁴⁾.

The results of this study present possibilities for debate and reflections about the work process and effective work of FHU nursing teams.

This study has some limitations. The restricted amount of data found in the literature about the proportion of time spent on users, families and communities in PHC and FHU make it difficult to discuss which proportions would be more appropriate and effective for PHC/FHU care provision and how these could contribute to improving the outcome and access to such services. However, the results of the present study are a reference for future studies on human resource management in health.

CONCLUSION

The data on the mean time spent on nursing care interventions presented in this study are new to the reality of Brazilian primary health care. They are essential elements to determine FHU nursing staff size and can be applied in different methods. Furthermore, this study advances the proposition of mean intervention times, considering the diversity of practices and realities of FHU in the national level.

We also emphasize this study's contribution to the knowledge on nurse staff sizing in PHC via the FHS, a topic previously explored in nursing only in the context of Brazilian hospital units. However, further studies are needed, such as on correlations between time and professional profile, characteristics of the FHU environment, regional and community indicators, support services such as Family Health Support Centers (NASF), cost analysis, and studies that encompass the nature of activities, type of interaction (telephone, computer, type of professional) and professional competence.

This study provides a panorama of the interventions and activities currently developed by FHS nursing professionals. Therefore, its results can be used to optimize the workforce and work processes in these units.

The time parameters identified here can be applied to workforce planning methods in local, municipal, state, and national contexts. This is an important management tool for the nursing category; however, this technique can be expanded to investigate all of the professional categories that compose the FHS.

The application of these results to other national scenarios enable comparisons between workloads and staff sizes and, therefore, the identification of the accurate level of imbalance of the FHU workforce in Brazil. Thus, the findings presented represent a relevant reference to underpin decision-making processes and influence workforce planning policies in Brazil.

RESUMO

Objetivo: Determinar padrões de tempo das intervenções/atividades realizadas pelos profissionais de enfermagem em Unidades de Saúde da Família (USF) no Brasil, para subsidiar o cálculo da força de trabalho. **Método:** Estudo observacional, realizado em 27 USF, 10 estados, 12 municípios, no ano de 2013. Em cada Unidade os profissionais de enfermagem foram observados a cada dez minutos, durante oito horas de trabalho, em cinco dias consecutivos, por meio da técnica amostragem do trabalho. **Resultados:** Foram observados 47 enfermeiros e 93 técnicos/auxiliares de enfermagem, obtendo-se o total de 32.613 observações. A principal intervenção realizada pelas enfermeiras foi a consulta, com tempo médio de 25,3 minutos, seguida de documentação, que correspondeu a 9,7%. Os técnicos/auxiliares de enfermagem utilizaram, em média, 6,3% em documentação e 30,6 minutos na intervenção controle de imunização/

vacinação. **Conclusão:** O estudo fornece padrões de tempos das intervenções realizadas pela equipe de enfermagem em USF, subsidiando a aplicação de métodos de dimensionamento de profissionais de enfermagem e políticas públicas de recursos humanos. Além disso, apresenta o panorama das atuais intervenções desenvolvidas, possibilitando revisão e otimização do processo de trabalho.

DESCRITORES

Atenção Primária à Saúde; Enfermagem em Saúde Comunitária; Enfermagem em Saúde Pública; Recursos Humanos em Saúde; Carga de Trabalho.

RESUMEN

Objetivo: Determinar estándares de tiempo de las intervenciones/actividades por los profesionales de enfermería en Unidades de Salud de la Familia (USF) en Brasil, para subsidiar el cálculo de la fuerza de trabajo. **Método:** Estudio observacional, llevado a cabo en 27 USF, 10 estados, 12 municipios, el año de 2013. En cada Unidad los profesionales de enfermería fueron observados cada diez minutos, durante ocho horas de trabajo, en cinco días consecutivos, por medio de la técnica de muestreo del trabajo. **Resultados:** Fueron observados 47 enfermeros y 93 técnicos/auxiliares de enfermería, lográndose el total de 32.613 observaciones. La principal intervención llevada a cabo por las enfermeras fue la consulta, con tiempo medio de 25,3 minutos, seguida de documentación, que correspondió al 9,7%. Los técnicos/auxiliares de enfermería utilizaron, en promedio, el 6,3% en documentación y 30,6 minutos en la intervención control de inmunización/vacunación. **Conclusión:** El estudio suministra estándares de tiempos de las intervenciones realizadas por el equipo de enfermería en USF, subsidiando la aplicación de métodos de dimensionamiento de profesionales de enfermería y políticas de recursos humanos. Además, presenta el panorama de las actuales intervenciones desarrolladas, possibilitando una revisión y optimización del proceso de trabajo.

DESCRIPTORES

Atención Primaria de Salud; Enfermería; Enfermería en Salud Comunitaria; Enfermería en Salud Pública; Recursos Humanos en Salud; Carga de Trabajo.

REFERENCES

- Paim J, Travassos C, Almeida C, Bahia L, Macinko J. The Brazilian health system: history, advances, and challenges. *Lancet*. 2011;377(9779):1778-97.
- Rasella D, Harhay O M, Pamponet ML, Aquino R, Barreto ML. Impact of primary health care on mortality from heart and cerebrovascular diseases in Brazil: a nationwide analysis of longitudinal data. *BMJ*. 2014;348:g4014.
- Brasil. Ministério da Saúde; Secretaria de Atenção Básica, Departamento de Atenção Básica. Política Nacional de Atenção Básica (PNAB). Brasília; 2012.
- Brasil. Ministério da Saúde. Portaria n. 2355, de 10 de outubro de 2013. Altera a fórmula de cálculo do teto máximo das Equipes de Saúde da Família [Internet]. Brasília 2013 [citado 2015 nov. 18]. Disponível em: http://bvsms.saude.gov.br/bvs/saudelegis/gm/2013/prt2355_10_10_2013.html
- Guimarães T, Alves J, Tavares M. Impacto das ações de imunização pelo Programa Saúde da Família na mortalidade infantil por doenças evitáveis em Olinda, Pernambuco. *Cad Saúde Pública*. 2009;25(4):868-76.
- Pereira C, Roncalli A. Impacto da Estratégia Saúde da Família sobre indicadores de saúde bucal: análise em municípios do Nordeste brasileiro com mais de 100 mil habitantes. *Cad Saúde Pública*. 2012;28(3):449-62.
- Marques D, Silva E. A Enfermagem e o Programa Saúde da Família: uma parceria de sucesso? *Rev Bras Enferm*. 2004;57(5):545-50.
- Pierantoni C, Varella T, Santos M, Silva L. Indicadores de carga de trabalho para profissionais da Estratégia de Saúde da Família. In: Pierantoni C, Dal Poz MR, França T. O trabalho em saúde: abordagens quantitativas e qualitativas. Rio de Janeiro: CEPESC/IMS/UERJ; 2011.
- World Health Organization. WISN – Workload Indicators of Staffing Need: user's manual [Internet]. Geneva: WHO; 2010 [cited 2015 Nov 22]. Available from: http://apps.who.int/iris/bitstream/10665/44414/1/9789241500197_users_eng.pdf
- Brasil. Ministério da Saúde; Secretaria de Atenção à Saúde, Departamento de Atenção Básica. Programa de Melhoria do Acesso e da Qualidade da Atenção Básica (PMAQ): manual instrutivo. Brasília; 2012.
- Bonfim D, Pereira MJB, Pierantoni CR, Haddad AE, Gaidzinski RR. Tool measuring workload of health professionals in Primary Care: development and validation. *Rev Esc Enferm USP*. 2014;49(n.spe 2). In press.
- Takemoto M, Silva E. Acolhimento e transformações no processo de trabalho de enfermagem em Unidades Básicas de Saúde de Campinas. *Cad Saúde Pública*. 2007;23(2):331-40.
- Shimizu H, Dytz J, Lima M, Moura A. A prática do auxiliar de enfermagem do programa saúde da família. *Rev Latino Am Enfermagem*. 2004;12(5):713-20.
- Ogata M, França Y. Nursing assistant performance in the Family Health Strategy. *Acta Paul Enferm*. 2010;23(4):506-11.
- Possari JF, Gaidzinski RR, Lima AFC, Fugulin FMT, Herdman TH. Use of the nursing intervention classification for identifying the workload of a nursing. *Rev Latino Am Enfermagem*. 2015;23(5):781-8.
- Anderson D, St. Hilaire D, Flinter M. Primary care nursing role and care coordination: an observational study of nursing work in a community health center. *Online J Issues Nurs* [Internet]. 2012 [cited 2013 Dec 10];17(2):3. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/22686111>
- Dellefield ME, Harrington C, Kelly A. Observing how RNs use clinical time in a nursing home: a pilot study. *Geriatr Nurs*. 2012;33(4):256-63.
- Walker K, Donoghue J, Mitten-Lewis S. Measuring the impact of a team model of nursing practice using work sampling. *Aust Health Rev*. 2007;31(1):98-107.

19. Fausto M, Fonseca H. Rotas da atenção básica no Brasil: experiências do trabalho de campo PMAQ-AB. Rio de Janeiro: Saberes; 2013.
20. Feitosa L, Feitosa J, Coriolano M. Conhecimentos e práticas do auxiliar de enfermagem em sala de imunização. *Cogitare Enferm.* 2010;15(4):695-701.
21. Morris R, MacNeela P, Scott A, Treacy P, Hyde A. Reconsidering the conceptualization of nursing workload: literature review. *J Adv Nurs.* 2007;57(5):463-71.
22. Brasil. Ministério da Saúde; Secretaria de Políticas de Saúde, Departamento de Atenção Básica. Parâmetros para programação das ações básicas de saúde. Brasília; 2001.
23. Bulechek G, Butcher H, Dochterman J. Classificação das Intervenções de Enfermagem. Rio de Janeiro: Elsevier; 2010.
24. Rowe AK, Savigny D, Lanata CF, Victora CG. How can we achieve and maintain high-quality performance of health workers in low-resource settings? *Lancet.* 2005;366(9490):1026-35.