ABSTRACT

Objective: to describe the amount of overtime hours worked by the professionals of the nursing team of a public university hospital. Method: this is a descriptive, exploratory, and quantitative study on the overtime hours worked by nursing professionals, within the period from January 1st to October 31, 2009, at a tertiary public hospital. The results were processed and tabulated according to frequency in the software Microsoft Excel, version 2007. The study was approved by the Research Ethics Committee of Universidade Estadual de Londrina (UEL), under the Certificate of Presentation for Ethical Consideration (CAAE) 0093.0.268.000-10. Results: 150,490 overtime hours were worked. The cases of expected and unexpected absenteeism totaled 182,948 hours, and 66,928 of them corresponded to unexpected absenteeism. Conclusion: we found out that, except at the outpatient unit of the clinics hospital, the overtime hours worked by the nursing team significantly exceeded what could be regarded as justified hours.

Descriptors: Nursing; Nursing Services; Management of Nursing Services from Universidade Estadual de Londrina (UEL); Advanced Life Support of the Paraná State Health Department; Nursing; Nursing Services; Organization and Administration; Nursing Staff, Hospital; Absenteeism.

RESUMEN

Objetivo: describir la cantidad de horas extraordinarias trabajadas por los profesionales del equipo de enfermería de un hospital público universitario. Método: esto es un estudio descriptivo, exploratorio y cuantitativo acerca de las horas extraordinarias trabajadas por profesionales de enfermería, en el periodo de 1º de enero a 31 de octubre de 2009, en un hospital público terciario. Los resultados fueron procesados y tabulados de acuerdo a la frecuencia en el software Microsoft Excel, versión 2007. El estudio fue aprobado por el Comité de Ética en Investigación de la Universidad Estadual de Londrina (UEL), bajo el Certificado de Presentación para Apreciação Ética (CAAE) 0093.0.268.000-10. Resultados: fueron realizadas 150490 horas extras. Los absentismos previstos y no previstos totalizaron 182948 horas, siendo 66928 correspondientes al no previsto. Conclusion: se verificó que, exceto en el servicio ambulatorio del hospital de clínicas, las horas extras realizadas por el equipo de enfermería, en las demás unidades de la institución con asistencia de enfermería, excedieron significativamente lo que serían horas justificadas.

Descritores: Enfermería; Servicios de Enfermería; Recursos Humanos y Enfermería en el Hospital; Absentismo.
INTRODUCTION

Within the capitalist focus of work production, management of production processes prioritizes activities aimed at increasing the effectiveness of the services provided. This demand for quality also comprises health services, requiring, both from public and private companies, increasingly innovative ways for managing the available resources.¹

In the context of nursing staff at the hospital, there are nurses and the other members of the nursing team, who often experience precarious working conditions and excessive and continued workloads which can lead to some harm and/or change on worker’s health and, as a consequence, they can negatively reflect on care quality.²

Given the workload and the physical and mental strain which these professionals undergo in their work environments, the worker becomes susceptible to illness, resulting in her/his absence from the workplace and generating the need for reorganizing the nursing care processes.³

The absence or lack of professionals at work is named absenteeism.⁴ This can occur on a scheduled way or not. In the former situation, it is regarded as expected absenteeism, which refers to vacation, days off (paid weekly rest), and holidays, except on Sundays. However, when the absence has not been planned, this is unexpected absenteeism and it encompasses absences (justified and unjustified), work leaves (medical, maternity, paternity, bereavement, among others), and suspensions.⁵

Even with the absence of nursing professionals from their workplaces, it is a must to maintain an adequate amount of staff members to ensure quality and continuity of nursing care. Thus, the nurse manager must ensure the amount of professionals at work through calculations of additional personnel by means of the Technical Safety Index (TSI), which provides a reference to deal with expected and unexpected absenteeism.⁶

In the practice at hospital institutions, although nurses use personnel calculations based on mathematical formulae tested and available in the literature, we notice an inadequate application to the reality of hiring these professionals. To dribble the insufficient number of employees and keep providing the patient with care, some hospitals resort to overtime hours as a managerial resource to overcome absenteeism in the nursing team.⁷

The use of overtime hours in the reality of hospital services constitutes a valuable resource of nurse managers to: support team resizing; assist in the situational diagnosis of the work process; and contribute to control costs in the nursing field.

This study aims to describe the amount of overtime hours worked by the professionals of the nursing team of a public university hospital.

METHOD

This is a descriptive and exploratory study conducted at a public hospital in northern Paraná, Brazil. The findings corresponded to overtime hours worked within the period from January 1st to October 31, 2009, calculated through the database of the advisory service on quality control of the hospital, which contains the records of overtime hours worked by the nursing team. The data collection period is justified by the fact that there are not trustworthy data for the months of November and December of that year, due to the migration of the old information system to a new version.

- Characterization of the study site

The hospital has an agreement with the Unique Health System (SUS), this is a reference center for trauma and high-risk pregnancy. It has 317 inpatient beds and 44 beds available for patients from the municipal maternity hospital, 7 operating rooms, and 120 consultation rooms in the outpatient unit available for SUS, which is located in another physical space.

The nursing chart of the institution was structured this way: nursing board, having as auxiliary services the nursing office, the nursing ethics commission, the nursing technical course, the nursing technical advisory service and the advisory service on nursing care quality control (ACQAE). Subordinate to the board, there were 9 nursing divisions and below them there were 30 nursing sectors organized as follows:

- Outpatient Care, Diagnostic and Therapeutic Support Division: Radiology and Endoscopy Sector; Blood Center; University Hospital Outpatient Unit; Chemotherapy; Dialysis Treatment; and Hemodynamics, Lithotripsy, and Electrodiagnosis;

- Inpatient Care Division: Male Medical-Surgical Clinic Sector; Female Medical-Surgical Clinic; and Infectious Diseases Clinic;

- Maternal and Child Division: Maternity Sector; Neonatal Intermediate Care Unit (NIMCU); Pediatric Inpatient Care;
Neonatal Intensive Care Unit (NICU); Pediatric ICU (PICU); and Human Milk Bank;
- Emergency Room Division: Adult Urgency Care and Maternal and Child Care Sectors;
- Adult Intensive Care Division: ICU I and II Sectors;
- Surgical Center and Material Center Divisions: Surgical Center Sector; Center for Disinfection and Sterilization Materials; Anesthetic Recovery Service;
- Nursing Division of the Outpatient Specialized Units of the University Hospital: Adult Health Nursing Sector; Child Health Nursing; Diagnosis and Treatment Support Nursing;
- Burned Patients Treatment Center: Burned Patients Treatment Sector.

In 2009, a new bylaw was established, which regarded the hemodynamics and radiology units as a complex and the endoscopy, electrocardiography, and blood center sectors as another complex, thus, such specificities were taken into account in this study.

During the study, we used, according to the institution standardization, the following acronyms or abbreviations to designate the respective units: Outpatient Unit of the Clinics Hospital = OUCH; Burned Patients Treatment Center = BPTC; Surgical Center = SC; Material Center = MC; Endoscopy = Endo; Electrocardiography = Electrocardio; Blood Center = BC; Hemodynamics = Hemodyn; Maternity Hospital = MH; Infectious Diseases = ID; Pediatrics = Ped; Emergency Room = ER; Chemotherapy = Chemo; Radiology = Radio; Phthisiology = Phthisio; Female Medical-Surgical Unit = Fem; Male Medical-Surgical Unit = Male; Neonatal Intermediate Care Unit = NIMCU; Neonatal Intensive Care Unit = NICU; and Pediatric ICU = PICU; and Adult Intensive Care Unit = Adult ICU.

Calculations used

The public officials at this hospital work 244 days per year, as a result of subtracting the days attributed to expected absenteeism: vacation and 15 days of granted work leave, which is provided for in the institution’s bylaw. This results in 1,464 hours worked per year for a workload of 36 hours per week and 976 hours for those of 24 hours, in the case of radiology and hemodynamics units. In addition to this, the institution has an average of 10.25 months worked, subtracting non-business days of the weekends. All these figures do not include unexpected absenteeism.

The calculations used to determine the average monthly hours worked per official, in 2009, were based on dividing the number of hours actually worked per year by the average useful months per year, subtracting non-business days of the weekends and expected absenteeism.

Thus, by dividing the number of hours worked per year by the average of months actually worked yielded an average of 95.2 hours per month worked for officials who have a workload of 24 hours per week and 142.8 hours for those who have a workload of 36 hours per week:
- Radiology and Hemodynamics Units:
  - Average monthly hours worked per official = 976 hours worked per year / 10.25 months worked = 95.2 hours per month
- Other units of the institution:
  - Average monthly hours worked per official = 1,464 hours worked per year / 10.25 months worked = 142.8 hours per month

Unexpected absenteeism cannot be regarded as the only factor for using overtime hours in this institution, as there are vacancies due to the retirement of officials, transfer to another sector or institution, or dismissal and no replacement by another official who performs the specific job was provided, in the case of this study, a technical or higher level job in the nursing category.

Thus, Table 1 regards as number of open hours multiplying the number of vacant jobs in the unit by the average monthly hours worked per year, according to the workload per week (24 or 36 hours). We obtain the total overtime hours officially justified by means of this product added to unexpected absenteeism (UEA):
- Number of open hours = Number of vacant jobs per unit x Average monthly hours worked per year (95.2 or 142.8 hours)
- Total hours officially justified = Number of open hours + UEA

Data analysis

The results were processed and tabulated according to frequency in the software Microsoft Excel, version 2007.

We used the non-parametric Mann-Whitney test, to compare the significant differences of average values between the variables overtime hours and unexpected absenteeism, and the Kruskal-Wallis test, to compare the differences in the amount of overtime hours.
between units belonging to each nursing division. In both analyzes, we regarded as statistically significant p < 0.05.

- **Ethical procedures**

  The study was approved by the Research Ethics Committee of Universidade Estadual de Londrina (UEL), registered in the National Research Ethics System (SISNEP) under the Certificate of Presentation for Ethical Consideration (CAAE) 0093.0.268.000-10.

**RESULTS**

Table 1. Number of hours regarding overtime hours (OH), unexpected absenteeism (UEA) and expected absenteeism (EA), and open hours of nursing professionals in a tertiary care public hospital, Londrina, 2009.

<table>
<thead>
<tr>
<th>Divisions / units</th>
<th>OH</th>
<th>UEA</th>
<th>EA</th>
<th>UEA and EA</th>
<th>Open hours</th>
<th>Open hours and UEA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inpatient Care</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male and Phthisio</td>
<td>17,279</td>
<td>7,035</td>
<td>10,170</td>
<td>17,405</td>
<td>1,428</td>
<td>8,463</td>
</tr>
<tr>
<td>Fem</td>
<td>7,654</td>
<td>4,406</td>
<td>8,415</td>
<td>12,821</td>
<td>857</td>
<td>5,263</td>
</tr>
<tr>
<td>ID</td>
<td>5,960</td>
<td>4,172</td>
<td>4,321</td>
<td>8,493</td>
<td>286</td>
<td>4,458</td>
</tr>
<tr>
<td>Maternal and Child Pediatrics</td>
<td>7,560</td>
<td>4,651</td>
<td>6,345</td>
<td>10,996</td>
<td>571</td>
<td>5,222</td>
</tr>
<tr>
<td>Maternity Hospital</td>
<td>7,021</td>
<td>2,473</td>
<td>4,748</td>
<td>7,221</td>
<td>571</td>
<td>3,044</td>
</tr>
<tr>
<td>NIMCU</td>
<td>5,769</td>
<td>953</td>
<td>3,781</td>
<td>4,734</td>
<td>143</td>
<td>1,096</td>
</tr>
<tr>
<td>NICU</td>
<td>5,287</td>
<td>2,864</td>
<td>3,489</td>
<td>6,353</td>
<td>286</td>
<td>3,150</td>
</tr>
<tr>
<td>PICU</td>
<td>3,759</td>
<td>2,563</td>
<td>2,860</td>
<td>5,423</td>
<td>-</td>
<td>2,563</td>
</tr>
<tr>
<td>Milk Bank</td>
<td>955</td>
<td>337</td>
<td>360</td>
<td>697</td>
<td>143</td>
<td>480</td>
</tr>
<tr>
<td>Surgical Center</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SC</td>
<td>21,287</td>
<td>5,350</td>
<td>8,958</td>
<td>14,308</td>
<td>714</td>
<td>6,064</td>
</tr>
<tr>
<td>MC</td>
<td>6,573</td>
<td>2,078</td>
<td>5,823</td>
<td>7,901</td>
<td>571</td>
<td>2,649</td>
</tr>
<tr>
<td>Emergency Room</td>
<td>25,414</td>
<td>5,311</td>
<td>13,830</td>
<td>19,141</td>
<td>1,428</td>
<td>6,739</td>
</tr>
<tr>
<td>Treatment</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BC, Endo, and Electrocardio</td>
<td>7,699</td>
<td>4,264</td>
<td>7,987</td>
<td>12,251</td>
<td>286</td>
<td>4,550</td>
</tr>
<tr>
<td>Hemodyn and Radio</td>
<td>4,039</td>
<td>1,641</td>
<td>3,927</td>
<td>5,568</td>
<td>95*</td>
<td>1,736*</td>
</tr>
<tr>
<td>Hemodialysis</td>
<td>1,427</td>
<td>985</td>
<td>2,745</td>
<td>3,730</td>
<td>143</td>
<td>1,128</td>
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<tr>
<td>Outpatient Unit</td>
<td>628</td>
<td>472</td>
<td>1,307</td>
<td>1,779</td>
<td>143</td>
<td>615</td>
</tr>
<tr>
<td>Chemotherapy</td>
<td>511</td>
<td>318</td>
<td>862</td>
<td>1,180</td>
<td>143</td>
<td>461</td>
</tr>
<tr>
<td>Intensive Therapy</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adult ICU I</td>
<td>5,643</td>
<td>2,542</td>
<td>6,193</td>
<td>8,735</td>
<td>571</td>
<td>3,113</td>
</tr>
<tr>
<td>Adult ICU II</td>
<td>4,713</td>
<td>2,113</td>
<td>5,636</td>
<td>7,499</td>
<td>143</td>
<td>2,256</td>
</tr>
<tr>
<td>Burned Patients Treatment</td>
<td>9,473</td>
<td>2,510</td>
<td>6,091</td>
<td>8,601</td>
<td>714</td>
<td>3,224</td>
</tr>
<tr>
<td>Outpatient unit of the clinics hospital</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>OUCH</td>
<td>1,839</td>
<td>9,889</td>
<td>7,972</td>
<td>17,861</td>
<td>571</td>
<td>10,640</td>
</tr>
<tr>
<td>Total</td>
<td>150,490</td>
<td>66,928</td>
<td>116,020</td>
<td>182,948</td>
<td>9,807</td>
<td>76,914</td>
</tr>
</tbody>
</table>

* Units with workload of 24 hours per week.

The comparative analysis between the variables unexpected absenteeism and overtime showed that there was a significant difference (p = 0.0132) between total hours of these two variables.

By comparing the amount of overtime hours of the units/sectors in their respective nursing divisions (with two or more units/sectors), we found out that in the inpatient care division, the male medical-surgical unit, along with phthisiology, showed a significant difference (p < 0.05) when compared to the female medical-surgical unit and ID. However, the latter two did not significantly differ among themselves.

In the Maternal and Child division, the Pediatric Unit and the Maternity Hospital showed a significant difference when compared to the PICU and the Milk Bank, and the NICU and NIMCU when compared to the Milk Bank.

Regarding the treatment division, the sectors Blood Center, Endoscopy, and Electrocardiography showed a significant...
difference with regard to the use of overtime hours when compared to the sectors Hemodialysis, Outpatient Unit, and Chemotherapy. In turn, Radiology and Hemodynamics differ when compared to the Outpatient Unit and the Chemotherapy. The other units showed no significant differences from each other with regard to the use of overtime hours.

The SC division showed a significant difference between its sectors. In turn, the Adult ICU I and II did not show this difference.

The percentage of officially vacant jobs for each unit ranged between 3.6% and 21.7%. Regarding the total of 732 filled or vacant jobs aimed at professionals at these units, we found out that 9.1% were officially vacant.

The divisions with the greater number of overtime hours worked by the nursing team were Inpatient Care (30,893 hours), Maternal and Child (30,351 hours), Surgical Center (27,860 hours), and Emergency Room (25,414 hours).

The units Surgical Center, Milk Bank, Adult ICUs were the units which obtained the greatest percentage of excess overtime hours above average (53.1%).

The NIMCU, ER, SC, BPTC, MC, Maternity Hospital, Milk Bank, Hemodynamics and Radiology, Male Unit and Phthisiology, and Adult ICUs were the units which obtained percentage of excess overtime hours above average (53.1%).

The NIMCU had the highest percentage of excess overtime and prevalence of dependence degree IV. Added to this, there was an occupancy rate which ranged between 101.9% and 138.3% during the study period, with an average of 131.3% per month.

Added to this, among the four dependency degrees on nursing in which clients are classified within the inpatient units, we observed that out of the 84,352 classifications made during the study period, there was a prevalence of degree IV, with 36%, and degree III, with 34.4%, followed by degree II, with 27.2%, and degree I, with 2.4%.

The average of total overtime hours worked was 7,166 hours per unit. The units with overtime hours above average were: Emergency Room; NIMCU, and BPTC showed, respectively, 48.8%, 37.0%, 32.8%, 21.1%, and 0.9% - percentages of overtime hours above the sum of hours of expected and unexpected absenteeism of the nursing professionals.

The OUCH was the only sector where the overtime hours were below what is needed to cover unexpected absenteeism (9,889 hours), all the other units exceeded the number of overtime hours aimed at compensating unexpected absenteeism. Thus, from 24.8% to 83.5% of overtime hours were used to cover unexpected absenteeism in the nursing team (Table 2).

Table 2 shows the percentage of excess overtime hours, when the reason for using these hours was not justified only due to unexpected absenteeism; and the average percentage within the study period for the client dependence degree related to nursing care in the respective units.

The NIMCU, ER, SC, BPTC, MC, Maternity Hospital, Milk Bank, Hemodynamics and Radiology, Male Unit and Phthisiology, and Adult ICUs were the units which obtained percentage of excess overtime hours above average (53.1%).

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The average of total overtime hours worked was 7,166 hours per unit. The units with overtime hours above average were: Emergency Room; Surgical Center; Male Inpatient Unit and Phthisiology; Adult Intensive Care Units; Burned Patients Treatment Center; Blood Center, Endoscopy, and Electrocardiography; and Female Inpatient Unit (Figure 1).

The sum of overtime hours worked by...
nursing professionals at these units resulted in 70.9% of total, with 16.9% for the ER; 14.1% for the SC; 11.5% for Male and Phthisio; 6.9% for the Adult ICUs; 6.3% for the BPTC; 5.1% for the Blood Center, Endo, and Electrocardiography and the same value for Fem; and 5% for the Pediatric Unit.

The use of overtime hours is justified due to unexpected absenteeism, thus, in this study, only 44.5% of hours could be justified, and this figure increases to 51.1% when considering the number of open hours, regarding the vacant jobs present in the units/sectors, except in the PICU. This demonstrates an insufficient staff for the institution’s needs.

The TSI comprises the days off per week, average number of vacation days, work leave, and absences, and this is an additional workforce value to cover expected and unexpected absenteeism. So, we observe the need for analyzing the TSI used and its possible readjustment to the current specificities in the institution, since it does not meet what is recommended by this planning level and ends up using overtime hours as a managerial resource to cover expected absenteeism.

Moreover, the number of vacant jobs demonstrates the need for hiring nursing professionals who would lead to a possible decrease in overtime hours, which, often, correspond to overload and consequent physical and psychic suffering of professionals.

The OUCH was the only sector which showed an amount of overtime hours below the unexpected absenteeism values. This may be due to the fact that the number of treated patients is below the estimate. From 2008 to 2009 there was a 2.7% decrease in the number of treatments provided by this sector, within the period from January to October.

In addition to the insufficient number of nursing professionals to provide nursing care directly or indirectly, with a good quality, there are some specificities inherent to the sectors with a high number of overtime hours.

The divisions Inpatient Care, Maternal and Child, Surgery Center, and Emergency Room were those with more overtime hours. Except for the Maternal and Child, each of the others comprised one of the units - ER, SC, and Male and Phthisio, respectively - which showed the highest amount of overtime hours.

Regarding the ER, the occupancy rate for the study period remained high, with an average of 132.9%, demonstrating a staff sizing not consistent with the need for nursing care to be provided.

The stress caused by the emergency service sector indicates as its main factors the insufficient amount of human resources and the high workload. Furthermore, the nursing professional experiences a continued alert attitude due to the service dynamics.

One of the factors which can justify the high amount of overtime hours in the SC is the fact that, in previous years, there was a culture in the Medicine course which operates in this hospital institution indicating that the Medicine students at the 5th and 6th year instrumented surgeries. However, because of

**DISCUSSION**

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The OUCH was the only sector which showed an amount of overtime hours below the unexpected absenteeism values. This may be due to the fact that the number of treated patients is below the estimate. From 2008 to
the overload of activities during college, most surgical instrumentation was in charge of the nursing professionals and resizing up to that time did not include professional to conduct such activity.

In turn, the Male Medical-Surgical Inpatient Care Unit has the peculiarity of hospitalizing clients with a high dependency degree, who, sometimes, are discharged on an early basis from the ICU due to the high demand in this sector for surgical beds. In addition, in 2009, a new strategy was deployed in Male, by the Commission for Cross Infection Control (CCIH), according to which the wards were divided into clean, contaminated, infected, and those with clients with a multiresistant microorganism (MRM) and others only for hospitalization of clients with MRM producing carbapenemases, which are often observed in severe clients.

These specificities triggered a change in the dynamics of the sector, as officials providing clients with care in a particular ward could not provide assistance to the clients hospitalized in the others. This led to the need for an increase in staff, however, it was not possible. This fact may have been correlated to the high number of overtime hours in the sector. This possible association may be applied to the Female Medical-Surgical Inpatient Care Unit, since in this the organization of beds established by CCIH was also adopted.

Currently, in the daily context of professional nursing practice, we observe that the nursing worked is obliged to provide assistance for severe patients and dependent patients out of ICUs due to the insufficient number of beds with regard to the current demand.9

In addition, the organization of the health care network, the increased number of referenced tertiary health care institutions and the change in the population demographic profile resulted in the modification of the profile of clients assisted and/or admitted to tertiary hospitals, leading to a greater demand for specialized procedures to care for more severe and dependent patients, something which generates an increased number of care hours per paciente.9

This is demonstrated in this study, since, in most of the units with inpatient beds, excess overtime hours coincided with the predominance of high dependency degree on nursing.

Regarding the Adult ICUs, we observe that the dependence degree IV of the institution does not cover the actual need of sectors, since the ICU is regarded as type III, having the Portaria Ministerial 3.432, enacted on August 12, 1998, as a basis.10

Intensive care environments pose a psychic, emotional, and physical overload for the nursing professional, in addition to the clients’ specificities and needs, who usually require an intensive nursing care, since they have a high dependency on nursing. These factors, associated to an insufficient amount of professionals to provide an integral care, lead to a work overload of the nursing team and, as a consequence, to suffering.

In a study on the quality of life at work among professionals of the nursing team of an ICU, the employees’ strain and discontent were made clear. Factors such as workload and the frequent need for overtime hours are regarded as relevant to the negative assessment of the quality of life at work and the care quality.11,12

In turn, BPTC is a sector which consists of adult and pediatric ward beds, SC, wound dressing room where balneotherapy is provided, and ICU beds; such organization poses to this unit a greater complexity of nursing care, especially in the ICU, since, besides intensive care procedures, wound dressings requiring a long work time from the nursing team are made.

Moreover, the clients assisted in this sector arrive the service with lesions with varied size, complexity, and level, something which leads to an oscillating amount of nursing professionals needed to ensure a good quality care, and there is, sometimes, the need of asking for overtime hours.

Regarding excess overtime hours beyond the coverage of unexpected absenteeism at the Material Center (MC), one of the triggers may have been the 9.5% increase in the sector’s productivity with regard to reprocessing and/or sterilization of materials, from 2008 to 2009, from January to October.

The high number of overtime hours in the Maternal and Child division may be a result of the fact that this division has the highest number of units (6). However, when considering the units separately, it was found out that the NIMCU was that with more excess overtime hours with regard to the need for covering unexpected absenteeism.

In this unit, however, we found a high occupancy rate, with a monthly average of 131.3% in this sector, a fact that could justify overtime hours. Moreover, this increased workload which the nursing professional undergoes can trigger, over time, a professional burnout syndrome. In a study13

Overtime hours in nursing: beyond unexpected...
conducted in a neonatal sector, it was found that the characteristics of specialized care, the lack of professionals, and their replacement by professionals working in the sector itself are regarded as the main reason for absenteeism in this unit.

In addition, the Maternity Hospital and the Milk Bank showed excess amounts of overtime hours related to unexpected absenteeism above average (53.1%) and Pediatrics was among the units with overtime hours above average (7,166 hours).

Maternity Hospital and Pediatrics are units where the officials are predominantly at older age groups and having more years of experience within the institution, a fact triggering increased work leave grants that may be one of the motives for the need to resort to overtime hours.

The Milk Bank is a sector which assists the external community through the collection of human milk. This activity is carried out on the weekends and there is no staff resizing which comprises nursing professionals, so that this activity is conducted without overtime hours.

Such justification may be inferred with regard to the Blood Center, since the nursing professionals in this sector also perform blood collection for the external community, at “non-business” times, and there is no resizing which comprises nursing professionals, so that this activity is conducted without overtime hours.

In turn, in the Hemodynamics and Radiology units, the professionals are exposed to ionizing radiation and, according to Law 7,394, enacted on October 29, 1985, regulated by Decree 92,790, enacted on June 17, 1986, the weekly workload of the Radiology technician is 24 hours.

Based on this, in the hospital under study, the professionals in these sectors with ionizing radiation were able to decrease the weekly workload from 36 hours to 24 hours in 2009. However, the nursing team resizing did not consider such changes back then, something which may have been one of the factors that led to so many overtime hours.

The silver lining of nursing professionals in hospitals to cope with unexpected absenteeism is the need for overtime hours and avoids work overload on the nursing professional, over time.

When we think of overtime hours in nursing, it is important that the nurse responsible for managing the sector have in mind the need, whenever possible, to rearrange the work schedule, redistributing nursing care among professionals, because, sometimes, the occupancy rate in the unit does not reach 100%, calculated to comprise the team included into the schedule, something which allows not resorting to overtime hours and avoids work overload on the nursing professional, over time.

However, besides the financial implications, it should be taken into account that the professional who performs overtime work is exposed to a work overload. In a study on the presence of biological, physical, chemical, and mechanical overloads at the workplace, the authors regard the loads named internal as the physiological and psychic ones, those which are inherent to each professional. Regarding the physiological loads, they derive from work done at different shifts, lengthened work hours, positioning, and physical movements required to fulfill tasks, and the overtime hours.

In studies on the perception of quality of life at work, absenteeism and workload in nursing teams, there was a negative assessment with regard to overtime hours. However, we did not find any study aimed at the association between the work sectors, distribution of overtime hours per month, and the impact of this additional workload on the work process.

Another consequence to be taken into account when talking of overtime hours is the triggering of a continued cycle in which the nursing professionals resort to overtime hours in order to cover unexpected absenteeism and, sometimes, expected absenteeism, and they show, over time, work overload, which leads to health problems, triggering new cases of unexpected absenteeism, either by absence or medical certificate, due to this possible financial burden for the health institution, since payment for overtime hours, according to the item XVI of article 7 of the 1988 Brazilian Constitution, corresponds to “remuneration for additional work over, at least, fifty per cent of the usual”.

Notwithstanding, dialogue among the nursing team with regard to the work process is needed, so that it is possible to achieve this flexibility to readjust the work schedule of nursing professionals to the care procedures required by the client, since disagreement and dissatisfaction among these workers bring losses to the client, the team itself, and the health care institution, in financial terms.
accumulation of activities. Absenteeism in nursing is a matter of concern, since it disorganizes the service, triggers dissatisfaction and overload among the professionals working, and it ultimately affects the quality of care provided to the client.  

For what concerns the overtime hours in the nursing reality, although it is positive for the professional in the financial domain, due to increased income, the effects on patient care are negative, due to lengthened working hours, something which may contribute to the occurrence of technical mistakes.

Thus, the management of the nursing staff at the hospital in the context of the Brazilian health care system requires the search for new ways of planning, allocating, distributing, and controlling these professionals, in order to ensure the quality of services provided.

**CONCLUSION**

It may be pointed out that, except at the OUCH, the overtime hours worked by the nursing team significantly exceeded what could be named justified hours, corresponding to unexpected absenteeism.

The nursing divisions with greater figures of overtime hours were Inpatient Care, Maternal and Child, Surgical Center, and Emergency Room. In turn, the Emergency Room, Surgical Center, Male Medical-Surgical Unit, and the Adult ICUs were the sectors with higher demand of overtime hours on the part of nursing professionals.

However, by comparing overtime hours to unexpected absenteeism (justified) in each unit, it was found out that the NIMCU, ER, SC, BPTC, MC, Maternity Hospital, Milk Bank, Hemodynamics and Radiology, Male Unit and Phthisiology, and the Adult ICUs were the units with percentage of excess overtime hours above average, respectively.

In addition, the scientific publications on overtime hours of nursing are still incipient. We observe that there are many researches mentioning them as resulting from an inadequate resizing and an absenteeism of the nursing professionals, however, there is no description of particularities which triggered the realization of the same. Thus, comparing this with other studies on overtime hours worked by the nursing team showed to be a difficult task.

Therefore, publishing further studies on this theme becomes pertinent, since the sharing of experiences can minimize or eliminate the occurrence of overtime hours in health care, as it extends the “look” beyond the resigning of staff and provides the discovery of other factors that may be rethought, enabling action on them. That is, studies which relate the workplaces to the use of overtime hours as a resource to cover absenteeism and survey the relationship between overtime hours and decreased productivity and quality of care.

We also highlight the importance of researches on the worker’s health-illness process and the impacts of lengthening her/his working day in order to support new proposals to occupational health policies, since the control of overtime hours worked by the nursing team constitutes an important finding for health care managers.

Considering this reality of the nursing work dynamics, it is suggested to highlight within the health care institutions personnel resizing actions aimed at the optimization of this resource and the consequent use of overtime hours on a reasonable basis, as well as interventions aimed at the prevention of physical and psychic illness among these professionals.


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