

# The influence of job rotation in the job satisfaction of nurses in a surgical service

A influência da rotação no trabalho na satisfação profissional dos enfermeiros num serviço de cirurgia

La influencia de la rotación en el trabajo en la satisfacción profesional de los enfermeros en un servicio de cirugía

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## Abstract

**Theoretical framework:** Job satisfaction is associated with better performance, leading to an optimisation of healthcare.

**Objectives:** To understand the influence of job rotation between units of the same service in the nurses' job satisfaction.

**Methodology:** Observational, analytic, cross-sectional and quantitative study using a questionnaire and subsequent bivariate descriptive statistical analysis.

**Results:** Statistically significant results were found in the variables related to the nurse's service, satisfaction with the number of shifts, pace of work, and technicality. The nurses who were very dissatisfied with the job rotation were professionally satisfied. On the other hand, the nurses who were very satisfied with the job rotation were somewhat professionally satisfied.

Although no association was found between satisfaction and rotation, nurses informally expressed their dissatisfaction. Thus, a qualitative or mixed study should have been developed.

**Conclusion:** The engagement of nurses in the decision-making process, particularly regarding the rotation system, should be continuously valued as it allows nurses to expand their field of action and achieve better results.

**Keywords:** job rotation; nurses; job satisfaction.

## Resumo

**Enquadramento:** A satisfação profissional está associada a melhores resultados no trabalho permitindo uma otimização dos cuidados de saúde.

**Objetivos:** Compreender a influência da rotação no trabalho, entre secções do mesmo serviço, na satisfação profissional dos enfermeiros.

**Metodologia:** Estudo quantitativo, observacional, analítico e transversal, com recurso a 1 questionário e posterior análise estatística descritiva e bivariada dos dados.

**Resultados:** Resultados referentes à proveniência do enfermeiro, satisfação com o número de turnos, ritmo de trabalho e técnica, foram estatisticamente significativos. Os enfermeiros muito insatisfeitos com a rotação estavam profissionalmente satisfeitos. Por outro lado, os enfermeiros muito satisfeitos com a rotação estavam profissionalmente bastante satisfeitos.

Não se verificou associação entre satisfação e rotação, mas denotou-se uma verbalização informal de insatisfação por parte dos enfermeiros, tornando-se ideal a realização de um estudo qualitativo ou misto.

**Conclusão:** A participação dos enfermeiros no processo de tomada de decisão, nomeadamente quanto ao sistema de rotação, deve ser continuamente valorizada, uma vez que permite ao trabalhador expandir o seu campo de ação e atingir melhores resultados.

**Palavras-chave:** rotação no trabalho; enfermeiros; satisfação profissional.

## Resumen

**Marco contextual:** La satisfacción profesional se asocia con mejores resultados en el trabajo y permite una optimización de la asistencia sanitaria.

**Objetivos:** Se pretende comprender la influencia de la rotación en el trabajo, entre secciones de un mismo servicio, en la satisfacción profesional de los enfermeros.

**Metodología:** Es un estudio cuantitativo, observacional, analítico y transversal en el que se utilizó 1 cuestionario y, posteriormente, un análisis estadístico descriptivo y bivariado de los datos.

**Resultados:** Los resultados relativos a la procedencia del enfermero, la satisfacción con el número de turnos, el ritmo de trabajo y la técnica fueron estadísticamente significativos. Los enfermeros muy insatisfechos con la rotación estaban satisfechos profesionalmente. Por otra parte, los enfermeros muy satisfechos con la rotación estaban bastante satisfechos profesionalmente.

No se observó una asociación entre la satisfacción y la rotación, pero se denotó una verbalización informal de insatisfacción entre los enfermeros, lo que indica que es ideal realizar un estudio cualitativo o mixto.

**Conclusión:** La participación de los enfermeros en el proceso de toma de decisiones, en particular en el sistema de rotación, debe ser valorada de forma continua, ya que permite al trabajador desarrollar habilidades y alcanzar mejores resultados.

**Palabras clave:** rotación en el empleo; enfermeros; satisfacción profesional.

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## Introduction

This study is the result of an empirical observation and frequent verbal expressions of the nurses' dissatisfaction regarding the rotation system in force at a surgery service of a Hospital in Lisbon. The study aimed to analyse the influence of job rotation between different units of a surgery service (Ward/Consultation; Intermediate Care – IMCU; and Intensive Care – ICU) on the nurses' job satisfaction. The organisation of care in this service is based on an individual methodology in which each nurse is responsible for one or more patients. It is coordinated and supervised by a charge nurse and the head nurse. Before 2010, the surgery service under study had no rotation system for nurses, who were permanently allocated to a unit. After April 2010 and following a unification of the service under a single Nursing head, the nurses started being allocated to the various units of the surgery service on a daily basis. A rotation system was thus established. The decision on the nurses' allocation was made before the beginning of every shift. However, this system was considered by the nurses to be a source of stress and dissatisfaction.

According to Jaturanonda, Nanthavanij and Chongphaisal (2006), rotation is translated into the acquisition of new skills and productivity improvement. On the other hand, a high frequency of job rotation may cause dissatisfaction and some factors should be taken into account when establishing it (Ho, Chang, Shih, & Liang, 2009). It is important to understand the association between job rotation and job satisfaction among the nurses, considering that satisfaction is associated with better performance, better organisational results and an optimisation of patient care (Lu, Barriball, Zhang, & While, 2011). Therefore, the aim of this study was to understand the influence of job rotation between units of a surgery service in nurses' job satisfaction. More specifically, this study explored the nurses' socio-demographic and professional characteristics; their rotation level; their level of satisfaction; the association between the nurses' socio-demographic and professional characteristics, their job rotation and their job satisfaction; and the association between job rotation and job satisfaction among the nurses. The purpose of this study is to contribute to advancing knowledge in this area and providing basis for more specific studies

on the advantages and disadvantages of this model of work organisation.

## Background

### Job rotation

Job rotation entails transferring employees from one unit to another, so as to increase their credentials in all aspects. It is planned based on the work practice and promotes the acquisition of new skills and an increase in productivity (Jaturanonda et al., 2006). On the other hand, high frequency of job rotation may cause dissatisfaction and some factors should be taken into account when establishing it (Ho et al., 2009). It is important to understand the association between the nurses' job rotation and job satisfaction, considering that satisfaction is associated with better performance, better organisational results and optimised patient care (Lu et al., 2011).

Job rotation within the same workplace inspires nurses to achieve higher performance, allowing continuous growth and development of new knowledge and skills (Jaturanonda et al., 2006), and increasing the quality of care (Lu et al., 2011). Scholars propose that job rotation may help employees to acquire multiple capabilities and expand their vision, thus reducing the risk of burnout. However, emotional pressure often occurs in a work environment where interpersonal interactions are highly involved (Hsieh & Su, 2007). A high frequency of job rotation may not be positive, and factors such as experience, learning status and job familiarity should be taken into account when establishing rotation frequency. In fact, job rotation means neither job promotion nor paid adjustment (Ho et al., 2009).

The primary concern in clinical practice is to exhaustively recognise how the nurses' stress can affect their job satisfaction and organisational commitment, and effectively use the job rotation system to enhance and develop nurses' job satisfaction and their organisational commitment in order to promote competitive advantages (Ho et al., 2009). According to Järvi e Uusitalo (2004), in the specific context of healthcare provision, the nurse benefits from job rotation by acquiring competence in his/her own speciality, thereby increasing his/her job satisfaction. The encouragement by superiors and the careful planning of job rotation and the time professionals spend working in each unit

is essential. The nurses' motivation is the foundation for a successful job rotation. Thus, the organisation gains innovative professionals and stands out for its learning principle (Järvi & Uusitalo, 2004).

The narrow qualification criteria, precise job descriptions, and lack of initiative and courage are often cited as obstacles to job rotation. Other important obstacles are the attitudes of management, superiors and staff. Superiors may be afraid of losing skilled professionals. On the other hand, the professionals' skills are not regularly measured (Järvi & Uusitalo, 2004). In fact, job rotation is a diverse concept, and there has been little theoretical or empirical research on the subject (Järvi & Uusitalo, 2004). In the research conducted in Finland by Järvi and Uusitalo (2004), job rotation was most often considered a positive experience by the nurses. Although professional development was valued, the interest in participating in various kinds of activities was minimal.

The economic and social transformations resulting from the globalisation process have considerably changed the relationship between the individual and his/her work. In order to meet the capitalist demand, there is an increasing need for productivity associated with a low production cost, thus obtaining highly competitive products. This practice results in increased workloads and work paces at the expense of the employees' satisfaction, with an impact on their quality of life and health/disease process (Silva et al., 2011).

### **Job satisfaction**

Job satisfaction is a key condition to improve organisational functioning. Nowadays, managers design strategies with a view to increase the employees' job satisfaction, and obtain better outcomes in terms of their creativity, commitment and productivity (Castro et al., 2011).

Castle, Engberg, and Anderson (2007) suggest that job satisfaction depends on the difference between what a person actually gains from his/her job and what he/she expects. Graça (1999) defines job satisfaction as an attitude, emotion or feeling resulting from the professionals' assessment (in comparison with the other employees) of the various dimensions of satisfaction based on their own expectations and taking all their investments into consideration. It results from the achievement of specific outcomes or rewards. It affects the workers' quality of life, health and behaviours, with an impact on the individual

level and also on the collective level through the organisation. According to Murrells, Clinton, and Robinson (2005), satisfaction and its dimensions are an integral part of care, particularly concerning health outcomes, which is an indicator of the quality of care. According to the Portuguese Ministry of Health (1999), high levels of job satisfaction translate into high levels of quality of care, and a periodic assessment of the professionals' job satisfaction is essential for monitoring organisational quality.

The workers' expectations play a key role in the traditional model of job satisfaction which is related to performance (Lu et al., 2011).

The following are sources of nurses' job satisfaction: working conditions; interaction; relationships with patients, co-workers, managers and work itself; workload; staffing, scheduling and shifts; challenging work, routinisation, task requirements (abilities, skills, etc.) and psychological job demands; remuneration; self-growth and promotion; professional training, opportunities of advancement, job promotion and personal achievement; psychological rewards (praise, recognition and encouragement); control and responsibility, autonomy, participation in the decision-making process and establishment of their working conditions; job security; leadership style and organisational policies (Lu et al., 2011). The following factors are strongly related to nurses' job satisfaction: job stress; organisational commitment; depression; cohesion of the ward nursing team; structural empowerment; organisational citizenship behaviours; job rotation; role stress; and respect (Lu et al., 2011). Rotation seems to have a positive impact on both job satisfaction and organisational commitment. On the other hand, nurses' role stress has a negative influence on job satisfaction and organisational commitment (Ho et al., 2009).

A study carried out at the Portuguese Institute of Oncology of Porto (*Instituto Português de Oncologia – IPO*) revealed that the nurses' satisfaction had a significant influence on the relationship with co-workers and superiors, perspectives of career progression, continuous professional training, remuneration, participation in decision-making, organisational communication, and job security (Marques & Araújo, 2010). Other important components in job satisfaction are age, years of employment, personal characteristics of leaders, and managerial competencies of leaders (Lorber & Savic, 2012). Factors such as motivation,

leadership style, professional development and interpersonal relations also explained the level of satisfaction. Satisfied professionals contribute to the organisation's success, so organisations must be aware of the factors influencing the nurses' job satisfaction. In addition, they should also monitor this variable on an annual basis (Lorber & Savic, 2012). The influence of job rotation on nurses' job satisfaction is not firmly established on the existing literature, namely in Portugal. There are several studies on the healthcare professionals' level of satisfaction, especially nurses. However, no mention is made to an increase or decrease of satisfaction as a result of the job rotation system between units of the same service. Therefore, the level of innovation of this study is moderate.

Research question

The study aimed to analyse the influence of job rotation between different units of a surgery service (Ward/Consultation; Intermediate Care – IMCU and Intensive Care – ICU) on the nurses' job satisfaction.

Methodology

This quantitative study is observational, descriptive and cross-sectional (Last, 1995). The sample was

composed of all nurses of a surgery service of the Hospital Centre of Central Lisbon, EPE, who were part of the job rotation system between the Ward/ Consultation, Intermediate Care and Intensive Care units of the same service, in a total of 55 nurses. The superiors in charge of each unit were excluded, such as the head nurse or the coordinating nurse, as well as the nurses who were on leave. The predominant working method in the service is the provision of individual care, in which a nurse is assigned to one or more patients, and a charge nurse and a head nurse assess and coordinate care provision. Graça (1999) identified seven dimensions in healthcare professionals' job satisfaction: autonomy and power; working and health conditions; professional and personal achievement and organisational performance; professional/patient and team relationship; remuneration; job security, and status and prestige. Although independent, the various dimensions interact with one another, and each person has different levels of satisfaction. These were also the dimensions used in this study. Two instruments were used for data collection. The questionnaire developed by Graça (1999) was used to measure the nurses' job satisfaction. This questionnaire on job satisfaction is based on motivational and organisational theories and includes 43 propositions rated on an 11-point Likert scale from 0 – completely dissatisfied to 10 – completely satisfied.

Table 1  
Correspondence between the satisfaction categories by Graça (1999), each of the 11 possible answers, and the satisfaction score obtained

	Job satisfaction scale (0 to 10)	Job satisfaction scores (0 to 10)
Completely satisfied	10	0
Very much satisfied	9	>0 and <1
Very satisfied	8	≥1 and <2
Somewhat satisfied	7	≥2 and <3
Satisfied	6	≥3 and <4
Neither satisfied nor dissatisfied	5	≥4 and <5
Dissatisfied	4	≥5 and <6
Somewhat dissatisfied	3	≥6 and <7
Very dissatisfied	2	≥7 and <8
Very much dissatisfied	1	≥8 and <9
Completely dissatisfied	0	≥9 to 10

The other data collection instrument was specifically developed for this study and included questions on the nurses' socio-demographic and professional

characteristics, such as age, gender, marital status, existence of children and their age, highest education level, nursing speciality, number of years in the

profession, weekly hours of work at the service, being a team leader, number of years in the service, working at another place and in which sector/location, and rotation (units where they have worked since the rotation started, number of shifts in each one in the last month, satisfaction with the rotation system and the number of shifts, usual routines, pace of work, technicality, location of material and professional relationship between co-workers at each unit).

This questionnaire was pre-tested in a group of nurses working in a rotation system at the Hospital Centre of Western Lisbon, EPE. The relevance of the questions, the cultural adequacy and the clarity of the language used in the questionnaire were analysed.

The dependent variable in this study is job satisfaction, which was assessed using the questionnaire developed by Graça (1999). This variable was obtained from the difference between expectations and results. The smaller the difference, the greater the satisfaction.

The independent variable corresponds to job rotation. When analysing the percentiles concerning the number of monthly shifts in each unit, four categories of rotation frequency were identified: no rotation (total number of monthly shifts were carried out in a single unit); minimum rotation (shifts were carried out in only two units, with a minimum of 60% of shifts in one of the units); intermediate rotation (shifts were carried out in three units with less than 20% or more than 47% of shifts in at least one of the units); and high rotation (shifts carried out in three units with a distribution of between 20 and 47% of shifts in each unit).

The programmes used were *Microsoft Office Excel* and the *Statistical Package for the Social Sciences* (SPSS), version 20.0. Pearson's Chi-squared test ( $\chi^2$ ) or Fisher's ( $F$ ) nonparametric test were used to test the associations between nominal variables. The parametric Analysis of Variance (ANOVA) or the Kruskal-Wallis ( $KW$ ) nonparametric test were used to assess the association between ordinal and numerical variables. The student's t-test or the nonparametric Mann-Whitney U test were used to test the association between numerical and nominal variables. The nonparametric Spearman's Correlation Coefficient ( $r_s$ ) was used to test the association between numerical variables. For the statistical analysis, a significance level of 0.05 was assumed. There were no missing data or null or wrong answers.

The Ethics Committee of the Institute of Hygiene and Tropical Medicine and the board of directors of the hospital gave their permission for the study to be conducted. The questionnaire was anonymous and it was distributed to the nursing given by one of the researches. The nurses filled out the questionnaires and returned them to the service's administrative secretary in January and February, 2012.

## Results

The study had a 100% participation rate ( $N=55$ ). The nurses' mean age was 31.5 years ( $SD=5.1$  years) and most of them were women ( $N=38$ ; 69.1%).

The percentage of nurses who were married/cohabiting and single was very similar (49.1%;  $N=27$  and 47.3%;  $N=26$ , respectively). Most professionals had no children (69.1%;  $N=38$ ). Of the nurses with children, most of them had only one child ( $N=15$ ; 88.2%), with the most common age group being 0-3 years old ( $N=11$ ; 64.7%).

Most nurses had a 4-year Licenciature degree ( $N=40$ ; 72.7%), while 25.5% ( $N=14$ ) of the professionals had a master's degree. The vast majority of nurses were general practitioners ( $N=53$ ; 96.4%). There were nine team leaders (16.4%).

The nurses had been in the profession for 8.7 years ( $SD=4.6$  years).

Most nurses worked 40 hours per week ( $N=41$ ; 74.5%) in the surgery service, while the remaining nurses worked 35 hours per week ( $N=14$ ; 25.5%). On average, the nurses had been working in the surgery service for 7.5 years ( $SD=3.9$  years).

Dual practice was not mentioned by 63.6% ( $N=35$ ) of nurses. The remaining 36.4% ( $N=20$ ) of nurses worked elsewhere other than the surgery service.

Before the rotation system was implemented, 56.3% ( $N=31$ ) of nurses had always or most of the times worked in the ICU, 16.4% ( $N=9$ ) in the IMCU, and 9.1% ( $N=5$ ) in the Ward/Consultation. There is a fourth group consisting of 10 nurses (18.2%) who worked both in the IMCU and in the Ward/Consultation before the rotation system started (Table 2).

After the implementation of the rotation system, all nurses had already worked in the ICU and in the IMCU ( $N=55$ ; 100%). As for the Ward/Consultation, 30 nurses (54.5%) had already worked at this unit,

but 25 nurses (45.5%) had never worked there. It was observed that the 25 nurses who had not worked in the Ward/Consultation worked at the ICU before the implementation of the rotation system.

Most nurses had never been on rotation ( $N=25$ ; 45.5%). Sixteen nurses (29.1%) had an intermediate rotation frequency and nine (16.4%) a minimum rotation frequency. Only five nurses (9.1%) had a high rotation frequency.

Table 2  
*Socio-demographic and professional characteristics of the nurses*

Variable		% (N)	Mean (SD)	Mode (IQR)	Min-Max
Age		-	31.5 (5.1)	29	26-47
Gender	Male	30.9 (17)	-	-	-
	Female	69.1 (38)	-	-	-
Marital status	Married/cohabiting	49.1 (27)	-	-	-
	Single	47.3 (26)	-	-	-
	Divorced	3.6 (2)	-	-	-
Existence of Children	Yes	30.9 (17)	-	-	-
	No	69.1 (38)	-	-	-
Education Level	3-year Bachelor's Degree	1.8 (1)	-	-	-
	4-year Licenciature Degree	72.7 (40)	-	-	-
	Master's Degree	25.5 (14)	-	-	-
Existence of a speciality	Generalist	96.4 (53)	-	-	-
	Specialist	3.6 (2)	-	-	-
Number of years in the profession		-	8.7 (4.6)	7 (5)	2-22
Number of years in the service		-	7.5 (3.9)	6 (2)	1-20
Works somewhere else	Yes	36.4 (20)	-	-	-
	No	63.6 (35)	-	-	-
Units where he/she has worked since the rotation started	ICU	56.3 (31)	-	-	-
	IMCU	16.4 (9)	-	-	-
	Ward/Consultation	9.1 (5)	-	-	-
	IMCU and Ward/Consultation	18.2 (10)	-	-	-

In general, the nurses were satisfied with their job ( $M=3.7$ ;  $SD=1.3$ ). Up to 50% of the nurses were satisfied with their job ( $Mdn=3.7$ ;  $IQR=1.4$ ) (Table 3). The most frequent situation ( $N=19$ ; 34.5%) was the nurses feeling neither satisfied, nor dissatisfied in their professional activity. The nurses were satisfied with the various dimensions of satisfaction, with the exception of remuneration and job security, about

which they were dissatisfied, and status and prestige, about which they were somewhat satisfied (Table 3). The female nurses presented an overall mean satisfaction of 4.0 ( $SD=1.1$ ) (neither satisfied nor dissatisfied) which was lower than that of male nurses who presented an overall mean satisfaction of 3.1 ( $SD=1.4$ ) (satisfied) ( $t=2.6$ ;  $p=0.01$ ).



Table 3

*Overall job satisfaction and its dimensions – mean, standard deviation, median, interquartile range, mode, minimum and maximum*

	Overall Satisfaction	Autonomy and Power	Working and health conditions	Personal and professional achievement and organisational performance	Professional/patient and team relationship	Remuneration	Job security	Status and prestige
Mean (SD)	3.7 (1.3)	3.6 (1.4)	3.6 (1.4)	3.8 (1.5)	3.1 (1.4)	5.4 (2.3)	5.0 (1.8)	2.7 (1.2)
Median (IQR)	3.7 (1.4)	3.6 (2.0)	3.5 (2.0)	3.8 (2.4)	3.0 (2.0)	5.3 (3.7)	5.0 (2.2)	2.4 (1.4)
Mode	2.8 <sup>a</sup>	3.0 <sup>a</sup>	2.8 <sup>a</sup>	3.9	3.0	4.3 <sup>a</sup>	5.4	2.2
Minimum	0.5	0.6	0.3	0.7	0.4	0.7	0.4	0.4
Maximum	7.0	7.0	6.5	7.2	6.0	9.7	9.8	6.4

a. There are multiple *modes*. The lowest value is shown in the table.

The most frequent situation was the nurses feeling dissatisfied with the system of rotation between units ( $N=24$ ; 43.6%) and neither satisfied nor dissatisfied with the number of shifts per unit ( $N=23$ ; 41.8%), the alternate practice of their routines ( $N=26$ ; 47.2%), the pace of work ( $N=27$ ; 49.1%), the technicality ( $N=20$ ; 36.4%) and the material location ( $N=18$ ; 32.7%). Most nurses were satisfied with the relationship established with their co-workers of each unit ( $N=35$ ; 63.6%). The lack of a rotation was more frequent in nurses from the ICU ( $F=50.2$ ;  $p<0.01$ ). In turn, high

rotation was more frequent in nurses from the IMCU ( $F=14.0$ ;  $p<0.01$ ). Intermediate rotation frequency was more frequent in nurses from the ICU and the Ward/Consultation ( $F=14.0$ ;  $p<0.01$ ).

No differences were found between the rotation frequency and the nurses' overall satisfaction ( $KW=4.2$ ;  $p=0.24$ ) (Table 4). However, significant differences were found between the organisational aspects of rotation and the nurses' satisfaction, as shown in Table 4.

Table 4

*Distribution of the variable overall satisfaction by category of final rotation – mean, standard deviation, median, interquartile range, mode, minimum and maximum*

	No Rotation	Minimum Rotation	Intermediate Rotation	High Rotation
Mean (SD)	3.7 (1.2)	4.0 (1.3)	4.1 (1.0)	2.5 (1.6)
Median (IQR)	3.7 (1.5)	4.1 (1.2)	3.7 (1.1)	2.8 (1.8)
Minimum	1.2	2.0	2.5	0.5
Maximum	5.7	6.3	7.0	4.5

Intermediate rotation was more frequent in nurses who were very dissatisfied or dissatisfied with the number of shifts per unit. The lack of rotation was more frequent in the group of nurses who were neither satisfied nor dissatisfied and satisfied or very satisfied with the number of shifts ( $F=12.0$ ;  $p=0.04$ ). The nurses who felt very dissatisfied and dissatisfied with the rotation had an overall mean satisfaction of 3.9 ( $SD=1.1$ ) (satisfied). The nurses who were neither satisfied nor dissatisfied with the rotation had an overall mean satisfaction of 3.9 ( $SD=1.4$ ) (satisfied) and the nurses who were satisfied and very satisfied with the rotation had a mean of 2.8 ( $SD=1.2$ ) (somewhat satisfied) (ANOVA=3.3;  $p=0.05$ ).

The nurses who felt very dissatisfied and dissatisfied with the pace of work in each unit had an overall mean satisfaction of 4.3 ( $SD=0.8$ ) (neither satisfied nor dissatisfied). The nurses who were neither satisfied nor dissatisfied with the pace of work had an overall mean satisfaction of 3.9 ( $SD=1.1$ ) (satisfied). Finally, the nurses that were satisfied and very satisfied with the pace of work had a mean of 3.0 ( $SD=1.5$ ) (satisfied) (ANOVA=4.8;  $p=0.01$ ).

The nurses who felt very dissatisfied and dissatisfied with the technicality had a median of 4.1 (neither satisfied nor dissatisfied). The nurses who were neither satisfied nor dissatisfied with the technicality had a median of 3.9 (satisfied). In addition, the

nurses who were satisfied and very satisfied with the technicality had a satisfaction median of 3.2 (satisfied) ( $KW=10.4$ ;  $p<0.01$ ).

## Discussion

Overall, the nurses were professionally satisfied, with the exception of the dimensions of remuneration and job security, with which they were not satisfied. However, the nurses were somewhat satisfied with the status and prestige.

Female nurses were overall less satisfied than male nurses. The association between professional dissatisfaction and the female gender may be related, for example, to the existence of small children, an inefficient network of kindergartens and the coexistence of a work schedule based on rotating shifts. Although aspect was not investigated in this study, the interview technique within a qualitative study could help understanding the reason for this difference.

Most nurses did not rotate between units. Most of the professionals from the ICU showed a minimum or no rotation frequency, unlike the nurses from the IMCU who had an intermediate or high rotation frequency. Assuming that intensive care nurses provide permanent and specialised assistance (Tranquilli & Ciampone, 2007), it is understandable that they have no intermediate or high rotation frequency. Their presence as points of reference is key to the proper functioning of the ICU.

Despite the fact that most nurses did not rotate, most of them were dissatisfied with the rotation system between units. The nurses were neither satisfied nor dissatisfied with the number of shifts per unit, usual routines, pace of work, technicality, and material location. Most nurses were satisfied with the relationship established with their co-workers of each unit. These results do not clarify the fact that nurses were dissatisfied with the rotation, which can be explained by the high percentage of lack of rotation. The nurses may be dissatisfied with the rotation due to other reasons such as the decision-making process about the rotation and some resistance to change.

Most nurses who were very dissatisfied and dissatisfied with the number of shifts in each unit had an intermediate rotation frequency. The nurses who were neither satisfied nor dissatisfied did not rotate or

had a minimum rotation frequency. Finally, the nurses who were satisfied and very satisfied with the number of shifts per unit did not rotate. This association is in line with the idea that a high rotation frequency may not have a positive impact on the professionals' satisfaction. According to Ho et al. (2009), factors such as the employees' experience, learning status and job familiarity should be taken into account when establishing the rotation frequency. Järvi & Uusitalo (2004) stress that both the employer and employee benefit from job rotation since the employer benefits from the new skills of the employee, including the ability to solve problems, make decisions and take responsibility. The encouragement by superiors and the careful planning of job rotation and the time professionals spend working in each unit is essential (Järvi & Uusitalo, 2004). In this particular case, the time each employee works in each unit should be taken into account and an effort should be made to find a more satisfying balance for the nurses who have an intermediate rotation frequency.

Overall, the nurses who were very dissatisfied, dissatisfied and neither satisfied nor dissatisfied with the rotation were professionally satisfied. The nurses who were satisfied and very satisfied with the rotation tended to be somewhat professionally satisfied. This result seems to be in line with the study of Jaturanonda et al. (2006) on the challenge that is job rotation and on the fact that it may motivate the employees by expanding their field of action and skills. The acquisition of skills is translated into an increase in satisfaction (Järvi & Uusitalo, 2004). On the other hand, the nurses who were satisfied and very satisfied with the rotation may have shown a minimum rotation frequency and tend to be somewhat professionally satisfied for this reason. Rotation might not also be a key factor for job satisfaction, as when professionals are satisfied with other dimensions, the rotation system loses influence over satisfaction.

The nurses who were very dissatisfied with the pace of work were neither professionally satisfied nor dissatisfied, while the professionals who were very satisfied with the pace of work were somewhat professionally satisfied. There should be a careful planning of each employee's adjustment time when implementing this rotation system (Ho et al., 2009). This dimension is not directly investigated in this study, which could have had a significant impact on the results since, for example, the lack of preparation



and integration of a professional in a specific unit may lead to insecurity or dissatisfaction. The pace of work may also be related to occupational stress. In a systematic review, Lu et al. (2011) considered the working conditions and the workload as two of the sources of nurses' job satisfaction. The nurses' job satisfaction is closely related to working conditions, organisational environment, job stress, role conflict and ambiguity, role perception and content, and organisational and professional commitment (Lu et al., 2011). Finally, in a study by Rafferty et al. (2007) in England, the nurses with the heaviest workloads were 71% to 92% more likely to show negative work outcomes, such as burnout and job dissatisfaction, and they regarded the quality of care as poor.

The nurses who were dissatisfied with the technicality were neither satisfied nor dissatisfied at a professional level. Nurses who were satisfied and very satisfied with the technicality tended to be overall satisfied. This may result from the fact that some nurses feel more comfortable using technological devices than others due to lack of practice or reasons related to the unit where they previously worked. According to Penz, Stewart, D'arcy, and Morgan (2008), in Canada, one of the factors explaining the variation in job satisfaction is the availability of equipment and supplies. Tourangeau and Cranley (2006) identified eight categories that influence the employee's intent to remain employed, one of which being the work environment. In essence, promoting the factors related to satisfaction increases the retention of professionals in institutions (Hayes, Bonner, & Pryor, 2010).

In this particular case, no association was found between rotation between units and the level of overall satisfaction. However, many professionals verbally expressed their dissatisfaction with the rotation system. The data collection instrument used to assess dissatisfaction and ensure impartiality in this study was a questionnaire and, therefore, the quantitative paradigm. However, one of the disadvantages of the questionnaire used is that it had no open-ended questions. As a result, the phenomenon of dissatisfaction with job rotation could not be studied as a whole. Thus, a qualitative or mixed study is recommended for a more detailed analysis of this phenomenon and to fully understand the association between nurses' job satisfaction and

job rotation. In this context, it should be noted that nurses' satisfaction and its dimensions are an integral part of care and therefore of health outcomes, which is an indicator of the quality of care (Ho et al., 2009).

## Conclusion

In this particular study, the rotation between units did not influence the overall satisfaction, but rather some specific dimensions. For a more in-depth study of this phenomenon and considering the nurses' verbal expressions of dissatisfaction with the rotation system, a qualitative or mixed study should be carried out to understand the association between the nurses' job satisfaction and job rotation and identify the factors that have a greater influence on these nurses' satisfaction.

The literature indicates that the factors influencing satisfaction are similar in several countries, despite the different social and workplace settings. The existing empirical evidence reveals a continuous need for improvement of the nurses' working conditions. In this context, the lack of an explanatory model reflecting the damping factors involved in the nurses' job satisfaction hinders the development of interventions to increase the professionals' retention in the institutions. The promotion of the factors that affect satisfaction would increase this retention. However, the current human resource cutbacks demand more and more from the nurses, leading to stress and decreased quality of the professional relationships, which are important for job satisfaction and influence the professionals' commitment to the organisation.

Regardless of ongoing research on the nurses' satisfaction, the dissatisfaction is still present. The head nurses play a key role in the nurses' level of satisfaction through a positive leadership and role modelling and by understanding the issues affecting the nurses. The coping strategies include positive reinforcement and promotion of resilient behaviours among the professionals. Consequently, and considering this specific study, the head nurses should identify and take into account the nurses' needs in order to maximise their satisfaction and optimise the rotation system and its gains.

## References

- Castle, N. G., Engberg, J., & Anderson, R. A. (2007). Job satisfaction of nursing home administrators and turnover. *Medical Care Research and Review*, 64(2), 191-211.
- Castro, J., Lago, H., Fornelos, M. C., Novo, P., Saleiro, R. M., & Alves, O. (2011). Satisfação profissional dos enfermeiros em cuidados de saúde primários: O caso do Centro de Saúde de Barcelos/Barcelinhos. *Revista Portuguesa Saúde Pública*, 29(2), 157-172.
- Graça, L. (1999). *A satisfação profissional dos profissionais de saúde nos centros de saúde*. In Instrumentos para a melhoria da qualidade (pp. 1-9). Lisboa, Portugal: Direcção Geral de Saúde.
- Hayes, B., Bonner, A., & Pryor, J. (2010). Factors contributing to nurse job satisfaction in the acute hospital setting: A review of recent literature. *Journal of Nursing Management*, 18(7), 804-14.
- Ho, W. H., Chang, C. S., Shih, Y. L., & Liang, R. D. (2009). *Effects of job rotation and role stress among nurses on job satisfaction and organizational commitment*. Retrieved from <http://www.biomedcentral.com/1472-6963/9/8> doi: 10.1186/1472-6963-9-8
- Hsieh, P. C., & Su, H. F. (2007). Retention and attrition of certified care assistants in the long-term care industry from the Taipei area: An interview survey. *International Journal of Nursing Studies*, 44(1), 93-104.
- Järvi, M., & Uusitalo, T. (2004). Job rotation in nursing: A study of job rotation among nursing personnel from the literature and via a questionnaire. *Journal of Nursing Management*, 12(5), 337-47.
- Jaturanonda, C., Nanthavani, S., & Chongphaisal, P. (2006). A survey study on weights of decision criteria for job rotation in Thailand: Comparison between public and private sectors. *International Journal of Human Resource Management*, 17(10), 1834-1851.
- Last, J. M. (1995). *Um dicionário de epidemiologia*. Lisboa, Portugal: Departamento de Estudos e Planeamento da Saúde.
- Lorber, M., & Skela Savic, B. (2012). Job satisfaction of nurses and identifying factors of job satisfaction in Slovenian Hospitals. *Croatian Medical Journal*, 53(3), 263-70.
- Lu, H., Barriball, K. L., Zhang, X., & While, A. E. (2011). Job satisfaction among hospital nurses revisited: A systematic review. *International Journal of Nursing Studies*, 49(8), 1017-38.
- Marques, G.F. S. & Araújo, B. R. (2010). Satisfação no trabalho dos enfermeiros do Instituto Português de Oncologia. In *Actas do IV Seminário de Investigação em Enfermagem* (pp. 1-99). Porto: Universidade Católica.
- Ministério da Saúde. (1999). *Monitorização da qualidade organizacional dos Centros de Saúde*: MoniQuOrCS. Lisboa, Portugal: Direcção-Geral de Saúde.
- Murrells, T., Clinton, M., & Robinson, S. (2005). Job satisfaction in nursing: Validation of a new instrument for the UK. *Journal of Nursing Management*, 13(4), 296-311.
- Penz, K., Stewart, N. J., D'arcy, C., & Morgan, D. (2008). Predictors of job satisfaction for rural acute care registered nurses in Canada. *Western Journal of Nursing Research*, 30(7), 785-800.
- Rafferty, A. M., Clarke, S. P., Coles, J., Ball, J., James, P., McKee, M., & Aiken, L. H. (2007). Outcomes of variation in hospital nurse staffing in English hospitals: Cross-sectional analysis of survey data and discharge records. *International Journal of Nursing Studies*, 44(2), 175-82.
- Silva, R. M., Beck, C. L. C., Guido, L. A., Lopes, L. F. D. & Santos, J. L. G. (2009). Análise quantitativa da satisfação profissional dos enfermeiros que atuam no período noturno. *Texto & Contexto Enfermagem*, 18(2), 298-305.
- Tourangeau, A. E., & Cranley, L. A. (2006). Nurse intention to remain employed: Understanding and strengthening determinants. *Journal of Advanced Nursing*, 55(4), 497-509.
- Tranquilliti, A. M., & Ciampone, M. H. T. (2007). Número de horas de cuidados de enfermagem em unidade de terapia intensiva de adultos. *Revista da Escola de Enfermagem USP*, 41(USP, 41 (3), 371-377.