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CONTRIBUTIONS OF PATHOLOGY MONITORING IN THE NURSING TEACHING-LEARNING PROCESS

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ABSTRACT

The objective of this study was to evaluate the Pathology monitoring from the students' perspective of an educational institution in the state Ceará, Brazil. A cross-sectional descriptive study with a quantitative approach was carried out with a sample of 30 Nursing students. The mean age was 22.4 ± 6.38 years, and the majority of the students were women (83.33%). For 96.67% of the students, the Pathology monitoring contributed to the functioning and the teaching-learning process of the discipline. In addition, contributed to satisfactory performance in the Pathology discipline of 83.33% of the students. Concerning the contribution of monitoring to academic life, 80% stated that they aroused interest in the teaching career, with a statistically significant difference in the contribution of monitoring to academic life in relation to sex, being significant for females (p-value: 0.0229). Thus, the Pathology monitoring contributes to the academic formation and the process of teaching-learning of the discipline of Pathology, promoting a relevant learning of this science.

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INTRODUCTION

Monitoring is a teaching initiation program that acts as a pedagogical support to solve learning difficulties and promote a relevant learning. Academic Monitoring, due to its characteristics and scope, is a proposal that assists teachers in their daily activities in an expressive way in all stages of the pedagogical process, while providing the student with the possibility of expanding knowledge (Borsatto et al., 2006).

In this context, it is important to understand the importance of teaching and learning. In the Modern Age, monitoring is configured by the Lancaster method, also known as interactive or monitorial teaching. This method had as objective to teach a greater number of students using a little resource, in short time and with quality. Its creator, Joseph Lancaster, hoped that the students would have mental and physical disciplinization. The monitor, the most advanced student who received, separately, the teacher's orientation to later replicate to others,

was introduced due to the lack of teachers (Dantas *et al.*, 2014). Teachers encourage the participation of students in monitoring since during classes is often time and restricted and does not make it possible to repeat the contents covered as many times as necessary. In addition, monitoring provides a subsidy for the academic to have greater security and accuracy in the content taught. There are many reasons why some students are interested in exercising the role of monitor, among them: the scholarship, the possibility of entering the academic career in the future, increasing their level of knowledge through "learning-teaching", creating and intensifying interpersonal relations, developing social-communicative skills, among others (Natário; Santos, 2010). Learning involves concepts, attitudes and human relations, the student must have the capacity to criticize, evaluate, suggest and deal with people, become aware of the many other elements that work in the classroom dynamics and in the school institution as a whole, and which, therefore, act in the teaching-learning process (Natário; Santos, 2010).

Pathology is the bridge between the basic sciences and clinical practice, and the understanding of pathological processes is fundamental to the exercise of health professions (Soares; Athanazio, 2016). This science studies the mechanisms of disease and its clinical repercussions means that of the study (logos) of suffering (pathos). For the student-monitor to enter the Pathology discipline, a selective process must be carried out, through a knowledge test, also evaluating the student's involvement and interest in teaching. The need to monitor the discipline of Pathology is justified by the need to offer future nurses the basic condition of recognition of a Pathology, a symptom, as well as the development and improvement of previous knowledge. The objective of the Pathology monitoring project in the nursing course is to stimulate the students to better use in the discipline, as well as prepare career entry into teaching. This work will analyze data obtained through research with the students who had the opportunity to have a student-monitor in the Pathology discipline of the Faculty of Vale do Salgado in the Nursing course, in the Northeast of Brazil, aiming to evaluate the importance of monitoring in the discipline of Pathology.

METHODOLOGY

We conducted a cross-sectional descriptive study with a quantitative approach involving the nursing students of a higher education institution in the state Ceará, Brazil. The study population consisted of 120 nursing students distributed in four semesters, and the sample consisted of 30 students. The instrument using for data collection was a semi-structured questionnaire, containing easy-to-understand questions and previously tested in a pilot study. During the research, the questionnaire assessed the level of technical knowledge these students possessed in terms in relation to the teaching and learning process of General Pathological Processes. The survey was conducted with students of nursing through the stratified probabilistic method, in which the calculation of the sample was designed considering a confidence level of 95% and a 5% sample error. For this study, data was gathered from 30 students. The assessment tools were administered after all subjects had fully agreed and signed the consent form. The normality of the data was evaluated using the Shapiro Wilk test. To carry out descriptive statistical analysis, data were analyzed by the chi Square test using GraphPad Prism, version

6 (GraphPad Software Inc., San Diego, CA) and considered significant when $p < 0.05$.

RESULTS

It was observed that the majority of the students were women (83.33%), Table 1, with a mean age of 22.4 ± 6.38 , between the ages of 19 e 47 years, Table 2. For 96.67% of the students, the Pathology monitoring contributed positively to the functioning of the discipline, $p=0.0229$ (Table 3). In addition, the monitoring activity contributed to satisfactory performance in the Pathology discipline of 83.33% of the students (Table 4). With 76.6% of the students approved without extra evaluative activity. For 96.67% of the students, Pathology monitoring contributed positively to the teaching-learning process, promoting meaningful and non-mechanical learning (Table 5). As for the frequency of the students in the Pathology monitoring, 50% of the students participated in the monitoring several times during the semester and it is not possible to measure (Table 6). The students cited the Atlas book as the most used study and research source (76.60%, Figure 1). And 46.6% of the interviewees reported as limitation in the monitoring the insufficient number of histological slides of some diseases. Pathology monitoring contributed to the students' awakening to the academy (80.0%, Figure 2). With a statistically significant difference in females, $p=0.0229$, Table 7.

Table 1. Data demographics of interviewed

Sex	Number	%
Male	05	16.67
Female	25	83.33
Total	30	100

Table 2. Descriptive statistics of the age of the interviewees who evaluated the Pathology monitoring

	Mean \pm EPM	Median	Max	Min
Student data	22.4 ± 6.387	21	47	19

Values represent the mean \pm standard error of the mean

Table 3. Contribution of the Pathology monitoring to the functioning of the discipline

Sex	Yes		No		χ^2	p
	Number	%	Number	%		
Male	4	13.34	1	3.33	5,17	0,0229
Female	25	83.33	0	0		
Total	29	96.67	1	3.33		

Table 4. Student satisfaction with monitoring to the performance in Pathology discipline

Student opinion	Number	%
Satisfied	29	83.33
Not satisfied	1	16.67
Total	30	100

Table 5. Contribution of Pathology monitoring to teaching-learning process

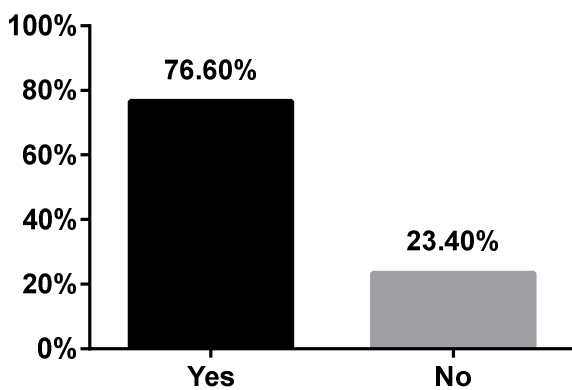
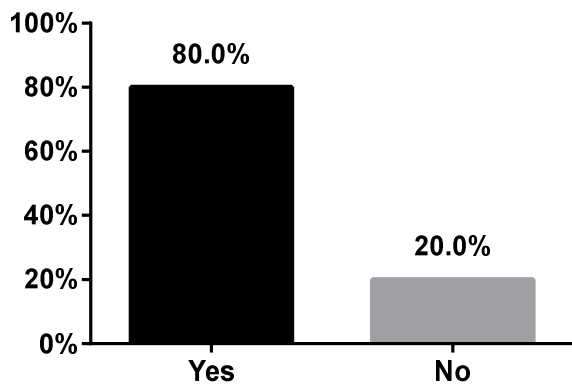
Contribution of monitoring	Number	%
Yes	29	96.67
No	01	3.33
Total	30	100

Table 6. Frequency in the monitoring of Pathology during the semester

Frequency of Monitoring	Number	%
Several times	15	50
2 times	06	20
5 times	06	20
8 times	02	6.67
12 times	01	3.33
Total	30	100

Table 7. Contribution of Pathology monitoring to academic vocation

The arouse of the academic vocation among the Pathology students						
Sex	Yes		No		χ^2	p-value
	Number	%	Number	%		
Male	3	10	2	6.67	1.5	0.0229
Female	21	70	4	13.33		
Total	24	80.0	6	20.0		

**Figure 1. Use of atlas book for consultation during the Pathology classes****Figure 2. Arouse to academic vocation through monitoring**

DISCUSSION

It was observed that monitoring is a pedagogical support service that aims to promote the development of technical skills and theoretical deepening, providing the academic improvement and a broader view of the themes addressed in the classroom. In this way, making a significant contribution to the teaching-learning process. The monitoring activity developed has three main objectives: to encourage the student to teach, decrease the chronic problems of the disciplines and improve the quality of teaching (Maia Filho *et al.*, 2009). In Brazil, the Law of Guidelines and Bases of National Education – LDB (Law N° 9.394/96) establishes and legitimizes the importance of monitoring activities in the training process of

students of higher education when it states that "The students of higher education can be availed in teaching and research tasks by the respective institutions, exercising monitoring functions, according to their efficiency and its syllabus " (Brazil, 1996, Art. 84). Thus, among the teaching activities of the Pathology monitor are planned a discussion of clinical cases of Pathology and reading and discussion of pathological slides of local and systemic diseases (Brzezinski, 1998). Pathology monitoring contributed positively to the best functioning of the discipline. The activities performed by the monitors in the classroom can be understood that teachers are not the sole holders of knowledge and that students can and should contribute to the teaching-learning process. Consequently, the use of the knowledge of the student's monitors in the classroom gives the teacher more time to collaborate with the students with greater difficulty in the studied contents (Freire, 2014; Cunha Júnior, 2017). It also was observed that the Pathology monitor contributed positively to the academic formation of the students, providing an instrument for the improvement of undergraduate education, through the establishment of new practices and methodological experiences and curricular integration in different aspects. In addition, the Pathology monitoring contributed to a better performance in the discipline for 83.33% of the students. With 76.6% of the students approved of the course without extra evaluation activities. Demonstrating monitoring is an important instrument for student approval in the discipline. For Natário and Santos (2010), monitoring programs, besides providing a space for learning, aim to improve teaching quality. Monitoring programs provide students with the opportunity to optimize their academic potential. In this study, Pathology monitoring contributes positively to the consolidation of Pathology knowledge. This finding corroborates data from the literature that show that the monitor and other students can and should contribute to the teaching-learning process (Freire, 2014; Cunha Júnior, 2017). Leite *et al.* (2011), emphasizes that the performance of monitoring provides improved learning and fixation of the contents taught in the lectures and practices by the students, as well as for the monitors in the initiation to teaching, with a great gain in professional experience in their academic training.

Studies in Brazil have concluded that monitoring is necessary for the development of critical thinking, conjunct learning systematizing different points of view, and thus showing that the proposal of monitoring teaching makes it possible the construction a learning based on consciousness and self-control (Frison, 2016). Natário and Santos (2010) emphasize that the monitor exerts an active function in the teaching-learning process, in this way, it can value the teacher/student relationship and participatory learning, enabling the student to be attended to in their difficulties. In this context, the monitoring is a space for students to discuss their doubts, make or remake exercises and experiments. The monitor, which mediates the teaching-learning process, will have space for action with the teacher, being able to receive new texts, experiments and hold discussions, thus establishing their knowledge and constructing new syntheses relevant for the performance of their functions and academic formation (Natário, Santos, 2010). Regarding the frequency of monitoring of Pathology, it was verified that 50% of the students attended the monitoring several times during the semester, not being possible to measure. Monitoring is an important instrument of reinforcement and adherence of

students to academic activities, making the student stay longer in the University. This practice privileges a space in academic life that enables the student to create differentiated attachment with the university, with knowledge and with an educational question (Guedes, 1998). The student who participates in the monitoring will find pedagogical advantages, such as more active, interactive and participatory learning and more immediate feedback, and can consequently develop greater mastery of the teaching-learning process (Natário, Santos, 2010). In this study, 76.6% of the students used the atlas book for consultation during classes and monitoring of Pathology demonstrating the importance of the atlas as pedagogical support and facilitator of the teaching-learning process. However, 46.6% of the interviewees reported as a limitation in the monitoring the insufficient number of histological slides of some diseases. Most atlas offers a greater number of visual and interactive resources to the user, which makes them increasingly used by students and professionals. These resources, together with the textual descriptions of the structures, further contribute to the absorption of the information available there (Machado *et al.*, 2004).

In Anatomy, many educators highlighted the importance of the large number of the visual and interactive resource of the virtual anatomical atlases as a facilitator and stimulator for learning (Netter, 2014). In the classes and monitoring of Human Anatomy, the textbooks and the atlas of anatomy represent the primary source of theoretical knowledge for the students (Leite *et al.*, 2011). Pathology monitoring fulfilled another significant role in student training, directing the interest of most students to the teaching career. For Carvalho *et al.* (2009), among other monitoring functions, is an activity whose purpose is to arouse interest by teaching career. Assis *et al.* (2006) mention out that monitoring improves the professional training process and promotes the improvement of teaching quality, creating conditions for the theoretical deepening, but also is responsible for the development of skills related to the teaching activity of the monitor. Monitoring in higher education has been characterized as an incentive, especially for teacher training. The diverse theoretical and practical activities developed by the monitors in the academic works, contribute to the critical formation in the graduation, awakening to the higher education (Dantas *et al.*, 2014). The Pathology monitoring is a pedagogical support service that aims to promote the development of technical skills and theoretical deepening, providing the academic perfection and a broader view of the topics addressed in the classroom contributing significantly to the teaching-learning process in the Pathology discipline.

Conclusion

It is concluded that the introduction of Pathology monitoring had an enormous attribution in the teaching and learning modality, contributing to the functioning of the discipline, satisfactory performance in the Pathology discipline, teaching-learning process and students' awakening of the Nursing undergraduate to the teaching. Since it is understood as instrument for the improvement of academic teaching, through the establishment of new practices and pedagogical experiences that aim to strengthen the articulation between theory and practice and the curricular integration in its different aspects, with the purpose of promoting the interactive cooperation between student and teacher. It is important to emphasize that monitoring is an important instrument in the

teaching-learning process, but higher education institutions should encourage the initiation of teaching by increasing the number of fellowships and restructuring of non-functioning and adequate monitoring.

Conflict of interest

Conflict of interest declared none.

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