



Comparison of the training status of medical students of pediatric ward based on their logbooks

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Abstract

Introduction: Logbooks show whether medical students have been exposed to a particular disease and whether they are able to perform particular practices or not. To evaluate the training status of the medical students in the pediatric ward of Shiraz University of Medical Sciences, the data about the students' knowledge of different diseases in different parts of the pediatric ward in 2011 was collected based on their logbooks and compared with similar data in 2005.

Methods: In this descriptive study, medical students' electronic notes were designed and completed by 90 medical students trained in the pediatric ward in 2011. Then the information was compared with the data of the previous study conducted in 2005.

Results: In the pediatric outpatient clinic, neonatal emergency room, pediatric emergency room, and general pediatric ward, 50% of the diseases listed in the diaries were observed by the students. However, 19% of the patients were observed by the students in subspecialty wards.

Conclusion: Using daily notes (logbooks) is a useful method for educational evaluation of the students. It can show the education acquired by the students, and clarify the defects and inadequacies in education. It seems that using electronic diaries in data collection increases the students' participation and facilitates training. In general, expansion and development of new wards facilitate the exposure of medical students to more diseases and this fact has been shown about pediatric neurology ward in the present study.

Keywords: Electronic logbooks, Medical students, Pediatric department, Education

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Introduction

Due to the importance of proper education in clinical settings, various methods are used in order to evaluate medical students' educational status (1-2). One of these methods is based on the daily notes written by the clinical medical students in each ward. Logbooks show whether medical students have been exposed to a particular disease and whether they are able to perform particular practices or not (3-5).

In general, there are three types of daily notes: handmade notes, electronic logbooks, and scan able logbooks. In 2005, a study on the logbooks was conducted on 45 medical students in the pediatric ward and the results showed that the exposure of medical students to the expected diseases was low in subspecialty wards. Development of electronic

logbooks not only facilitated their completion by the students, but it also facilitated the statistical analyses (6). In this study, the daily electronic notes of 90 medical students in Shiraz were investigated and the obtained data were compared to those in the previous study in order to clarify how the students have progressed during the 4 year period.

Methods

The present study aimed to compare the medical students' training in different departments of the pediatric ward. This descriptive study was conducted on the pediatric medical students' community, including 90 medical students, at Shiraz University of Medical Sciences, in the first 6 months of 2011.

At first, electronic logbooks, including student's

name, name of the pediatric wards spent during the three month period of pediatrics studentship, and diseases observed by the medical students in different wards, including inpatient wards, outpatient wards, general pediatric wards, and subspecialty wards, were designed. These logbooks were provided in the format of Excel software on www.sums.ac.ir/ped.dept/studentlogbook. It should be noted that the students were not obliged to complete the logbooks, but if they did, they would receive one positive point from the pediatric ward. The students were required to mark the names of the diseases they had observed on the logbook list. However, in case the disease name did not exist in the list, they had to add the name to the "others" column.

Excel software was used in order to create a database. In addition, the SPSS and Chi-square test were used to analyze the study data. Then, the results were compared to those obtained in the previous study performed in the pediatric department of Shiraz University of Medical Sciences.

Results

Based on the students' electronic logbooks, the common diseases in pediatric wards were as follows:

In general pediatric wards, on the average, 50% of the diseases specified in the daily notes had been observed by all students. In the subspecialty wards, on the other hand, averagely 19% of the diseases had been observed by the students.

In outpatient pediatric clinics, 84% of the diseases listed in the logbooks were submitted by the students. Moreover, the diseases mostly observed by the students in outpatient clinics were gastroenteritis (99%), anemia (99%), and pneumonia (97%). On the other hand, less commonly observed diseases included vaccination problems (32%) and Enuresis (45%).

In the study conducted in 2005, the students in pediatric outpatient clinics were exposed to 67% of all the patients and the least common diseases were vaccination problems and Enuresis.

In pediatric infectious disease ward, averagely 22% of the diseases determined for the students were observed. Besides, the least commonly observed diseases were HIV and malaria. In the study performed in 2005 also, 22% of all the infectious diseases were observed by the students, with HIV and malaria being the least common ones.

In the pediatric immunology ward, averagely 15% of the diseases specified by each student were observed and immunodeficiency disease was the scarcest one. In 2005, 5% of the students were exposed to the mentioned diseases in the pediatric Immunology ward. At that time, Henoch-Schonlein purpura and

immune deficiency disease were the least commonly observed diseases.

In pediatric endocrinology ward, 10% of the diseases specified by each student had been submitted and the least common disease was sexual differentiation defects. Yet, the previous study showed that 16% of endocrine diseases were observed by the students and the rarest ones were hypothyroidism and sexual differentiation defects.

In pediatric neurology ward, averagely 45% of the diseases specified in the logbooks by each student were observed. In addition, the least common disease was Floppy baby syndrome. In the study carried out in 2005, 13% of the students had been exposed to the expected diseases in the pediatric neurology ward. At that time, Floppy baby syndrome was the rarest disease, as well.

In the pediatric gastroenterology ward, 22% of the gastrointestinal diseases specified by each individual were observed. Besides, malabsorption was the least commonly observed disease. The results of the study conducted in 2005 also showed that 19% of the gastrointestinal diseases were observed by the students, with malabsorption being the rarest disease.

In the pediatric cardiovascular disease ward, almost 10% of all the students were exposed to the specified diseases and bacterial endocarditis was the least common disease. In the study performed in 2005, however, cardiovascular diseases were observed by about 27% of the students and rheumatic fever and bacterial endocarditis were the rarest diseases observed.

In the neonatal emergency room, 52% of all the diseases mentioned in the logbooks were observed by the students. Besides, neonatal hypocalcaemia was the least observed disease. In the study performed in 2005, 73% of the students had been exposed to the expected diseases in the neonatal emergency room. In addition, neonatal hypocalcaemia was the least common disease.

In the pediatric nephrology ward, 12% of the students observed the diseases specified in the list submitted to the logbooks, while this measure was obtained as 24% in the study performed in 2005. Moreover, nephrotic syndrome was the least commonly observed disease in both studies.

In the general pediatric ward, 30% of the diseases were observed by the students. Besides, anemia was the scarcest observed disease. In 2005, on the other hand, the students had been exposed to 53% of the expected diseases and bronchiolitis and Aseptic meningitis were the least common ones.

In Nemazee hospital pediatric emergency room, 34% of the diseases were observed by the students and the least commonly observed disease was near drowning.

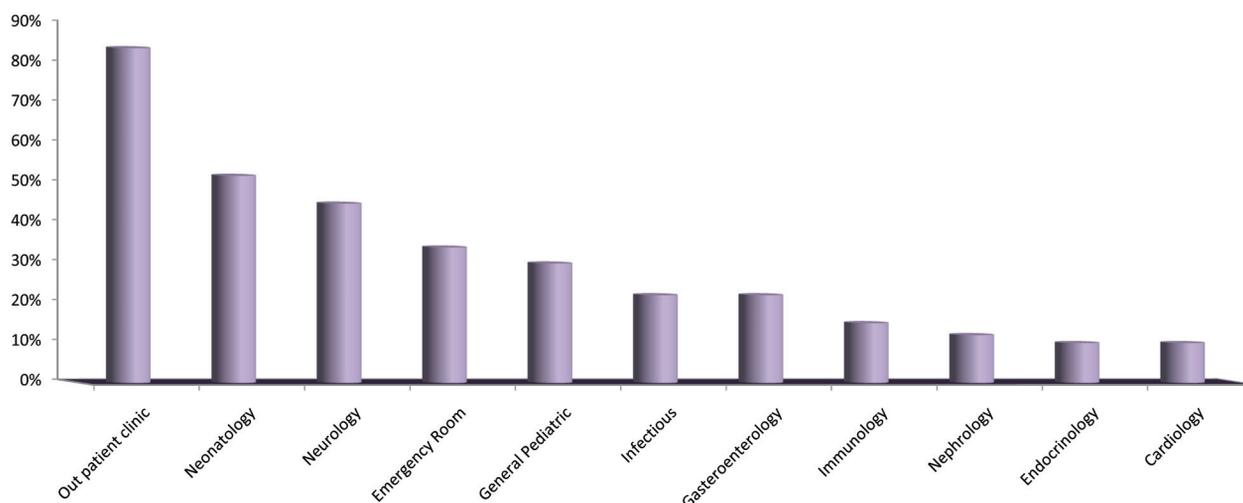


Figure1. Percentage of the students' exposure to various diseases in the pediatric wards in 2011

In the study carried out in 2005, however, the students had observed about 50% of the expected diseases and near drowning was the least common one.

Percentage of the students' exposure to various diseases in the pediatric wards in 2005 and 2011 are shown in figures 1 and 2.

Discussion

Using student logbooks in different clinical wards, such as internal medicine ward, surgery ward, and pediatric ward, can help to understand the current status of the students' training and clarify the defects and inadequacies of clinical education. Therefore, using the methods which increase the students' motivation to complete the logbooks seems to be necessary. In this study, using the electronic logbooks provided the researchers with the opportunity to evaluate the medical students by the digital system which was accessible via home computers as well as pocket personal computers. This also increased the students' motivation to fill the logbooks. Denton GD et al. showed a significant under reporting of medical

problems by the students. Therefore, they concluded that logbook sensitivity was not good enough for high-stakes evaluations of the students or medical school licensing (7).

Yet, another study which was conducted by Gerald D. Denton and Steven J. on 110 medical students in North America in 2007 showed that computer-assisted learning options might facilitate clerkship adjustments for lack of exposure to core problems and that clerkship directors were using logbooks appropriately to meet the LCME charge to monitor the core problems and the clinical conditions (8).

Comparison of the present study with the one conducted in 2005 revealed a significant increase in the percent of the diseases observed by the students in outpatient pediatric clinics (from 67% in 2005 to 83% in 2011).

In most of the subspecialty wards, no significant difference was found regarding the patient exposure; except for the pediatric neurology ward where the percentage of student exposure rose from 13% to 45%. Separation and expansion of pediatric

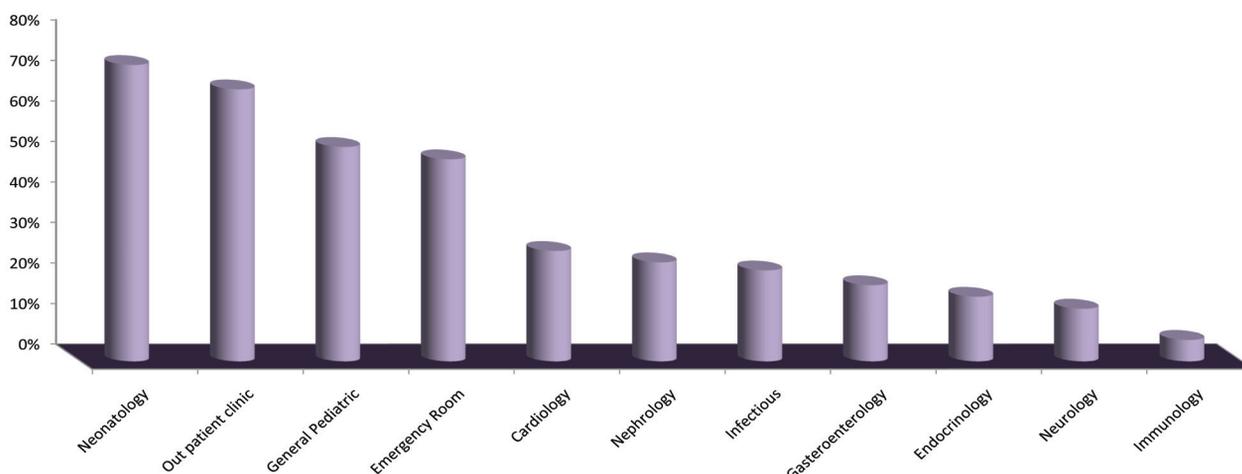


Figure2. Percentage of students' exposure to various diseases in the pediatric wards in 2005

neurology ward might have played an important role in raising the students' exposure to the patients. In 2005, the pediatric neurology patients were admitted in pediatric ER, while a separate pediatric neurology ward had been constructed for these patients in the present study.

In general pediatric wards, the disease observation and exposure by the students had reduced from 53% and 49% to 30% and 34%, respectively which is an alarm for the educational planners. According to the studies conducted in this field, the students' exposure to diseases was more significant in general pediatric wards compared to that in the subspecialty wards.

The list of rare diseases observed by the medical students in different wards, including pediatric outpatients' clinics, pediatric infectious diseases ward, pediatric immunology ward, pediatric endocrinology ward, pediatric neurology ward, pediatric gastroenterology ward, pediatric cardiovascular ward, and neonatal ward, was the same in both studies.

In general pediatric wards, the least common diseases exposed by the students in 2005 were bronchiolitis and aseptic meningitis, while the present study showed anemia as the rarest observed disease. This difference may be due to the diversity of the diseases in the general wards.

In the pediatric emergency room, near drowning was the least common disease observed by the medical students in both studies.

Conclusion

Electronic logbooks encourage the medical students in the clinical wards to participate in completing the logbooks. In the present study, 90 students voluntarily participated in logbook writing, while only 45 students had taken part in the study conducted in 2005. Uncommon diseases observed by most students were repeated in both studies. Therefore, the students should get familiar with these diseases

through using films, compact discs, and other teaching aids. Low percentages of students' exposure in certain subspecialty wards diseases were reported in both studies. Therefore, the medical students are recommended to spend more time of their clinical programs in clinical outpatient, general wards, and neonatology wards.

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References

1. Perkoff, GT. Teaching clinical medicine in the ambulatory setting: An idea whose time may have finally come. *N Engl J Med.* 1986; 314(1):27-31.
2. Wooliscroft, JO. Schwenk, TL. Teaching and learning in the ambulatory setting. *Acad Med.* 1989; 64:644-8.
3. Patil, NG. Lee, P. Interactive logbooks for medical students: are they Useful? *Med Edu.* 2002; 36:672-7.
4. Vanek, EP. Barrigua Unal, RM. Hekelman, FP. Hull, AL. Lindley, BD. Barley, GE. Krackov, SK. Packman, CH. Use of patient encounter documentation (log) systems at three medical schools. *Teaching Learning Med.* 1993; 5:164-8.
5. Whitcomb, ME. Using clinical outcomes data to reform medical education. *Acad Med.* 2005; 80(2):117.
6. Amoozgar, H. Haghghat, M. Qolami, M. Evaluation of medical clerkship training in pediatric department of Shiraz University of Medical Sciences based on students' logbooks. *Iranian Journal of Medical Education.* 2007; 7(1):7-13.
7. Denton, GD. Hoang, T. Prince, L. Moores, L. Durning, S. Accuracy of medical student electronic logbook problem list entry. *Teach Learn Med.* 2007; 19(4):347-51.
8. Gerald, D. Denton & Steven, J. Internal medicine core clerkships experience with core problem lists: Results from a National Survey of Clerkship Directors in Internal Medicine. *Teaching and Learning in Medicine: An International Journal.* 2009; 21(4).