

**Selecting the patients for morning report sessions: case-based vs. conventional method**

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**Type of article:** Original

**Abstract**

**Background:** One of the most important issues in morning report sessions is the number of patients. The aim of this study was to investigate and compare the number of cases reported in the morning report sessions in terms of case-based and conventional methods from the perspective of pediatric residents of Mashhad University of Medical Sciences.

**Methods:** The present study was conducted on 24 pediatric residents of Mashhad University of Medical Sciences in the academic year 2014-2015. In this survey, the residents replied to a 20-question researcher-made questionnaire that had been designed to measure the views of residents regarding the number of patients in the morning report sessions using case-based and conventional methods. The validity of the questionnaire was confirmed by experts' views and its reliability by calculating Cronbach's alpha coefficients. Data were analyzed by t-test analysis.

**Results:** The mean age of the residents was  $30.852 \pm 2.506$ , and 66.6% of them were female. The results showed that there was no significant relationship among the variables of academic year, gender, and residents' perspective to choosing the number of patients in the morning report sessions ( $P > 0.05$ ). T-test analysis showed a significant relationship among the average scores of residents in the selection of the case-based method in comparison to the conventional method ( $P < 0.001$ ).

**Conclusion:** From the perspective of residents, the case-based morning report was preferred compared to the conventional method. This method makes residents pay more attention to the details of patients' issues and therefore helps them to better plan how to address patient problems and improve their differential diagnosis skills.

**Keywords:** number of patients, morning report, case-based method, conventional method

**1. Introduction**

The morning report is a conference on patients in which the medical professors, residents, and other medical students come together to discuss patients (1). In other words, the morning report is a teaching process in which participants try to solve diagnostic problems by discussing patients (2). The morning report was done initially in non-teaching hospitals; doctors and nurses reported patient treatment problems in writing prior to their shift to the head of the section (3). Due to the remarkable achievements of the program in the abovementioned hospitals, the program currently runs in most teaching hospitals, and the morning report is considered to be one of the key elements in the training programs of medical students in teaching hospitals (4, 1). Studies show that the morning report is the most valuable educational conference in hospital sections (1), and is known as an important tool for evaluating clinical services and quality assurance. It can also play important roles in teaching, teaching communication and social skills of learners, improving professional criteria, enhancing thinking skills, planning and asking questions and problem-solving, evaluating learner performance, and discussing desirable or undesirable

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Received: May 25, 2015, Accepted: July 12, 2015, Published: August 10, 2015

iThenticate screening: July 28, 2015, English editing: August 04, 2015, Quality control: August 05, 2015

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consequences of performed actions (5). The main applications of morning reports include getting a general overview of the activities carried out in section, analyzing various aspects of diagnosis and treatment, understanding adverse events and their causes, and interaction among medical personnel (6-8). Various departments participate in morning report sessions, but the main participants are residents (9). Residents take part in sessions and discuss problems of diagnosis and treatment (10). However, the selection and presentation ways of patients are very diverse in the other programs and are done by senior residents or physicians (11). Presenting of patients is diverse, including a brief introduction of all patients with equal emphasis on each of them, and introducing one or two detailed interesting cases (12). Other unusual methods include selecting and introducing patients including those from the last one or two days, selecting the simple cases at the beginning of the academic year and more the complicated ones over the next months (13) and providing summaries to discharged patients (14, 15).

Some studies show that residents prefer fewer patients to discuss in depth (16). A study by Jerard et al. showed that residents were more interested in selecting patients to present whose diagnosis has changed during their hospitalization period (17). In a study by Houghtalen et al., residents prefer discussing only one patient and having more time to submit more comments and express a more differential diagnosis. For them, flexibility and skills in guiding discussion toward effective questions strengthen the participants more in sessions (18). The results of a study by Haghdoost et al. showed that the process of holding morning reports in sections is very diverse in aspects such as the number and length of reports, the role of students and interns, and presentation of outpatients (19). Since in most cases the morning report process is not standardized across hospitals, the reports' format—that is, duration of morning session, number and type of participants, number of reported cases, and emphasis on specific issues—is different from institution to institution (20).

The general objective of this study was to investigate the views of pediatrics residents of Mashhad University of Medical Sciences about the quality of morning report sessions in terms of reported number of patients in each session. The specific objectives of this study include the following:

- 1) Comparing case-based and conventional methods in introducing patients in morning report sessions
- 2) Determining the relationship between the gender of residents and their views toward conventional and case-based methods
- 3) Determining the relationship between the academic year and the residents' views toward conventional and case-based methods.

## **2. Materials and Methods**

This study was cross-sectional to compare the views of the pediatric residents of Mashhad University of Medical Sciences about selecting the number of patients in morning report sessions in terms of case-based and conventional methods in the academic year 2014-2015 by means of a researcher-made questionnaire. The population of study was 30 pediatric residents of Mashhad University of Medical Sciences (the second and third year of pediatric residency). The reason for selecting the first-year residents was that they had not taken part in morning report sessions for at least 1 year, and therefore were not aware of holding of the sessions. The sample size included 30 pediatric residents of Mashhad University of Medical Sciences. Since the populations of study and sample size were consistent, data were collected by census.

The study tool was a questionnaire consisting of demographic characteristics and technical questions about the residents' view of the advantages or disadvantages of case-based and conventional methods in selection of patients' number for the morning report sessions. In the case-based method, a limited number of patients is proposed per session (2 or maximum of 3 patients) and are examined from various dimensions and angles. However, in the conventional method, more patients are proposed but instead reviewed more briefly. The questionnaire included 20 graded questions using a 5-point Likert scale with the options "much worse", "worse", "moderate", "better", and "much better". Each of the options were given scores of 1 to 5 in order, and the participants were asked to give a score of 5 to the option most similar to their view; the other options were given 1, 2, 3, and 4 in order based on their similarity. Each option represented one advantage or disadvantage of each feature of the case-based method compared to the conventional method. A total score was obtained from the sum of questions that reflected the degree of agreement or disagreement of residents with the case-based method compared to the conventional method. To determine the face validity, the number of 8 questionnaires was given to the first year pediatric residents, and to determine the content validity, the questionnaire was given to 7 professors of pediatrics to resolve the uncertainties.

To determine the reliability of the questionnaire, Cronbach's alpha coefficient was used and the coefficient of this questionnaire was equal to 0.95.

In order to comply with research ethics, questionnaires were completed anonymously and participants were assured that their information would remain confidential. In the end, the participants completed a total of 24 questionnaires. Due to non-completion of some questions, 6 questionnaires were excluded from the study.

The collected data were analyzed with the help of SPSS software version 16 and statistical test of t-test, and were considered statistically significant ( $P < 0.05$ ).

### 3. Results

The study was done on 24 pediatrics residents of Mashhad University of Medical Sciences (the second and third year of pediatrics) in the academic year 2014-2015. The mean age of residents was  $30.852 \pm 2.506$  and 16 of them (66.6%) were female and 8 (33.3%) were male. Among the studied residents 14 of the 24 (58.3%) were in the second year of pediatrics and 10 (41.7%) of them were in the third year. There was no significant relationship among the variables of academic year, gender, and residents' view compared with selection of the number of patients in the morning report sessions ( $P > 0.05$ ). In this study, the residents' view of Mashhad University of Medical Sciences of the case-based method compared to the conventional method in morning report sessions were examined by using t-test. The results showed that the mean scores of pediatric residents in the case-based method were higher than conventional method and the difference was statistically significant ( $P < 0.001$ ). The findings summarized are shown in Table 1. The data in Table 1 show that the amount of t-test at the 0.05  $\alpha$ -level is significant for all components of the questionnaire ( $P < 0.001$ ).

**Table 1.** Comparison of Residents' View about the Selecting patients for morning report sessions

No.	Variables	Mean	SD <sup>1</sup>	t	P
1	Focus on teaching and learning different skills	4.041	0.857	5.943	<0.001
2	Learner familiarity with disease process (from beginning to the end)	4.041	0.954	5.346	<0.001
3	To cover educational purposes	3.958	0.806	5.822	<0.001
4	Provide sufficient time to study	4.041	0.954	5.346	<0.001
5	Observe the time required for presentation	3.958	0.999	4.699	<0.001
6	Respect to professors	3.916	1.100	4.082	<0.001
7	Lead and guide the sessions	4.250	0.794	7.713	<0.001
8	Question asking and problem-solving	3.958	0.806	5.822	<0.001
9	The number of presented cases in each session	3.583	0.974	2.933	0.007
10	Attention to details of patients	4.166	1.090	5.243	<0.001
11	Engage residents in the learning process	4.041	1.122	4.548	<0.001
12	Review patient problems and plan to address them	4.166	0.916	6.234	<0.001
13	Prevention of duplicate cases	3.916	1.059	4.237	<0.001
14	Ability to discuss non-medical issues such as ethics and economics (cost-effectiveness of performed treatment)	3.916	0.880	5.100	<0.001
15	Fit with academic year and residents ability	3.750	0.896	4.097	<0.001
16	Sufficient time to perform evaluation and provide feedback	4.041	0.858	5.943	<0.001
17	Improving presentation skills	3.875	0.797	5.376	<0.001
18	Emphasis on clinical reasoning rather than mere recitation from memory	3.750	0.896	4.097	<0.001
19	Differential diagnosis skills	4.125	0.679	8.109	<0.001
20	Motivate residents	3.875	0.899	4.764	<0.001
Total		79.375	13.357	7.106	<0.001

1: Standard deviation

### 4. Discussion

The morning report is a conference in which members of the medical team (attending physicians, residents, interns, and students) discuss the patients admitted in the past 24 hours (19). Clinical training in medical environments is presented in various forms; the morning report has been the basis of educational programs for local residents for years and consists of various groups of professors and students with different educational goals (21). Studies show

that many factors determine the success or failure of any training program. The most important of them is being in line with real resources and the convergence between students' motivations and professors' attitudes, which provide a good educational environment. Student satisfaction is an important factor in creating better educational outcomes. When morning reports are run in a correct way, they provide an educational experience with the central focus on students, linking residents with university professors and strengthening cooperation and competition to develop a sense of competence and confidence. In fact, the morning report is a useful tool for conveying an educational experience to less experienced residents as an important step in professional development (22).

The results of this study showed that there was no significant relationship between gender and academic year of residents and the selection of the case-based or conventional method. The sample size of this study was limited, which could affect the obtained statistical results. This study also showed that pediatrics residents of Mashhad University of Medical Sciences generally prefer a fewer number of patients to be examined in each morning report session to have the opportunity to consider necessary and important points in-depth. Of course, if it is necessary to discuss some patients in-depth, those patients should be representative of the training curriculum and should particularly include common clinical patients (23). It should also be noted that the way of holding the sessions and the number of reported patients depend on the target audience and the purpose of holding the sessions. Good morning reports for residents and students of general medicine are certainly different. This is why the educational authorities in each section should pay necessary attention in holding these sessions (24, 25). The number of patients introduced in the morning reports on various studies is different. In one study, most residents liked to introduce a new patient every 20 to 25 minutes; however, in another study, residents wanted the whole hour of morning report session to be devoted to discussion of one patient. It seems that the best and most appropriate method is selection of a limited number of patients (2-4 patients). The standards approved by the Ministry of Health and Medical Education of Iran have determined the good duration mean of reporting a patient in a morning report to be 5 minutes, and the appropriate number of discussed patients 2 to 4 (13). The majority of studies mentioned the 2 to 3 reported patients. If the goal is to further deepen understanding of the content, reporting on 3 patients in 1 hour is good (5).

Most medical universities pay a lot of attention to holding regular morning report sessions. Universities and faculty members are sensitive to the importance of the morning report as an important educational session (13). Of course, paying attention to the way of holding morning reports as one of the most effective methods of clinical training is very important. The morning report can provide an opportunity to learn scientific issues related to the management of inpatients or outpatients. Obviously, due to time constraints, only the intended and planned use of this opportunity can lead to learning (10, 15). The limited number of residents participating in this study was the most important limitation of the study.

## **5. Conclusions**

In summary, the findings of the study indicated that the pediatrics residents of Mashhad University of Medical Sciences prefer the case-based method to the conventional method and prefer a fewer number of patients to be examined in each morning report session. The practical importance of this finding is that when a limited number of patients are examined in morning report sessions, this leads to improvement of residents' differential diagnosis skills and to more ample opportunities to evaluate patients by residents. It is recommended that similar initiatives be performed in other departments of Mashhad University of Medical Sciences. Doing a supplementary study of pediatrics residents' views of case-based as compared to conventional methods in morning report sessions in other medical science universities would be a good path for future research on this topic.

## **Acknowledgments:**

We appreciate all pediatrics residents of Mashhad University of Medical Sciences who helped us cordially in the implementation of the study.

## **Conflict of Interest:**

There is no conflict of interest to be declared.

## **Authors' contributions:**

All authors contributed to this project and article equally. All authors read and approved the final manuscript.

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