



## **Evaluation of Structure, Content and Quality of Morning Report Sessions in Ahvaz Jundishapur University of Medical Sciences**

Nasrin Khajeali<sup>1\*</sup>, Fatemeh Ahmadi<sup>2</sup>, Sara Heidari<sup>3</sup>, Maryam Aslami<sup>4</sup>, Masoumeh Kalantarion<sup>5</sup>, Marzieh Najaf Kochak<sup>6</sup>

- <sup>1</sup> Faculty member EDC, Ahvaz Jundishapur University of Medical Sciences, Ahvaz, Iran.
- <sup>2</sup> Associate Professor, Jundishapur University of Medical Sciences, Ahvaz, Iran.
- <sup>3</sup> MS. Department of Medical Education, Ahvaz Jundishapour University of medical sciences, Ahvaz, Iran.
- <sup>4</sup> MS. Department of Medical Education, Shiraz University of Medical Sciences, Shiraz, Iran.
- <sup>5</sup> PhD student, Department of Medical Education, Shahid Beheshti University of Medical Sciences, Tehran, Iran.
- <sup>6</sup> General physician, Jundishapur University of Medical Sciences, Ahvaz, Iran.

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Morning report is an important and influential method in the clinical training of the medical field. This program has some characteristics and standards that, when properly applied, will play an effective role in students' clinical learning. The main aim of this study is to the evaluation of structure, content, and quality of morning report sessions in internal medicine wards affiliated with Jundishapur University of Medical Sciences, and also to assess students' viewpoints on the structure, content, and quality of morning report sessions. In this cross-sectional study, the structural characteristics of morning report sessions and the students' rate of benefit from their content were investigated in the year 2019-2020. A sample of 224 internship and clerkship medical students were asked to fill in a standard questionnaire. The validity and reliability were confirmed by experts and the calculation of Cronbach's alpha respectively. The mean duration of morning reports was 57/30±12/5 minutes. The average number of meetings was 5 times a week, the average duration of sessions was 16 minutes, the patient presenter in most cases was a senior resident, the cases presented were complicated ones, the leader of sessions was one of the specialist professors. The main audience at the sessions was not defined. Usually, the experts of other fields such as pharmacists, nutritionists, pathologists, or radiologists were absent. The total benefit rate according to the students was 42 people (18.5%) high, 115 people (51%) moderate and 67 people (30.5%) low. There was a significant correlation between their benefit rate and most of the structural parameters of morning report sessions ( $P<0/005$ ). Develop a standard and appropriate educational objectives model for morning reports, in educational programs of clinical sections that seem necessary.

\* Corresponding Author Email: [nasrinkh2009@yahoo.com](mailto:nasrinkh2009@yahoo.com)

## Introduction

The morning report has been recognized as one of the most significant practices in medical sciences (Moharari et al. 2010). It is a common and worthwhile practice in medical education along with the grand rounds (Malejan et al. 2006). This educational process is a kind of patient-based conference where assistants, professors, and other medical learners come together to discuss patients and clinical cases (Brass 2013). Participants in the morning report attempt to dissolve a diagnostic puzzle by discussing a patient's problems. The patients' introduction can range from a short discussion about each of the patients admitted in the previous night to a complete introduction of a new inpatient or interesting and unusual findings (Beasley & Woolley 2002). The morning report is a common and valuable method of clinical education. It has some characteristics and standards that, when properly applied, will play an effective role in students' clinical learning (Zarezadeh et al. 2017). It is known as a tool for evaluating clinical services and quality assurance (Reilly & Maurice Lemon 1997). The main applications of the morning report include teaching communication and socializing skills, strengthening thinking skills, asking questions and problem solving, achievement of an overall view of the activities performed in the ward, analysis of different diagnostic and therapeutic aspects of patients, evaluation of the learners' performance, assessment of the services provided to patients, recognition of unfavorable events and their causes, and interaction among the medical staff (Amin et al. 2000). A successful morning report requires planning and organizing in various ways before, during, and after the morning report. In most of the universities of medical sciences, regular morning reporting is an essential part of clinical education, and its main purpose is to educate learners about various aspects of the disease, in other words, patient-centered education (Huffman, Kaufman & Saint 2010).

The morning report as one of the main pillars of clinical education has indicators and standards that, if observed, will lead to improving the professional skills of graduates (Sacher & Detsky

2009). However, there is no definite model for the implementation of the morning report that can be adapted without thinking and reflection and can be applied to all conditions, sections, and disciplines in the country (Brass 2013). According to the needs of learners and the educational goals of each clinical department, it is possible to provide more effective and better sessions and encourage the active participation of participants. Therefore, reviewing the current status of each educational program and eliminating its weaknesses is one of the most important tasks of medical education administrators in each university (James, Mintz & McLaughlin 2006). According to the above, this study was conducted to investigate the status (structure, content, and quality) of morning reports in teaching hospitals in Ahvaz.

## Methodology

The present study is a cross-sectional descriptive study that was conducted in 2019-2020 with the presence, observation, and distribution of questionnaires at the morning reporting sessions in the internal wards of four major teaching hospitals affiliated to Ahvaz Jundishapur University of Medical Sciences.

The statistical population consisted of apprentices and interns who attended the morning reports. Criteria for inclusion in the study were interns and interns who were undergoing internships and participated in at least two morning reporting sessions. Incomplete answers to the questionnaires and participated in only one session of the morning report were the exclusion criteria.

After the pilot study, the required number of 224 samples was calculated. Using the convenience sampling method, all eligible individuals who attended the morning reporting sessions participated in the study. At the beginning of the morning report, the researcher distributed the questionnaire to the apprentices and interns who intended to enter the session and collected the completed questionnaires at the end of the meeting.

The data collection tool was a standard questionnaire (Razavi, Shahbaz Ghazvini &

Dabiran 2012) consisting of 61 questions and 3 sections including demographic information, information related to the structure, and educational content of the morning report, and the extent to which students benefited from the content of the sessions.

Demographic characteristics include age, gender, level of education. Questions related to the structure of the morning report were: session start time, duration of each session, number of sessions per week, the student who introduced the patient, number of patients per session, type of reported diseases, duration of each patient introduction, presence or absence of the patient, the presence of specialists from other fields in the meeting, the moderator of the sessions, the physical condition of the sessions and the range of audience of the sessions.

The questionnaire also examined the extent to which participants benefited from each item. The purpose of this study was to create a positive attitude about a subject, increase information about that subject, or increase the medical abilities of learners from their perspective. Learners' benefit from the content of morning reports was measured using a graded table with a 3-point Likert scale, and the scoring method was high (3), medium (2), and low (1).

The content and face validity and reliability of the questionnaire were confirmed based on the opinion of experts and Cronbach's alpha (0.85), respectively (Razavi, Shahbaz Ghazvini & Dabiran

2012). In order to observe the ethical points, the questionnaires were completed without mentioning the names of the individuals, and the participants were assured that the information obtained from it will be kept confidential. Mean, standard deviation, median, amplitude, frequency, and percentage were used to describe the data. ANOVA statistical test was used to compare questions between different groups of students. Chi-square and independent t-test were also analyzed to compare the benefit of learners. Data were analyzed using SPSS Version25. The significance limit of P was considered less than 0.05.

### Findings

This study was performed on 224 medical students, including 55 (24.6%) samples from hospital A, 57 (25.4%) samples from hospital B, 57 (25.4%) from hospital C and 55 (24.6%) from D hospital. Based on the obtained results, 55.8% (125) of the study population were apprentices and 44.2% (99) were interns. 152 (68%) samples were women and 72 (32%) were men.

Apprentices and interns of Hospital B had the lowest score and Hospital A had the highest score in benefit, and this difference is statistically significant with P-value = 0.054.

However, there is no significant difference in the score of the subjects among the hospitals.

**Table1.** The level of benefit and emphasis on the subjects of morning reports separately in four teaching hospitals of Ahvaz Jundishapur University of Medical Sciences

Hospital	Benefit rate		Emphasis on the subjects	
	Mean±Standard deviation	Medium (range)	Mean±Standard deviation	Medium (range)
A	2.08±0.6	2 (1,3)	2.13±0.52	2.02 (1.43,3)
B	1.79±0.5	1.81 (1,3)	1.97±0.47	1.95 (1,3)
C	1.78±0.6	1.8 (1,3)	2.15±0.52	2.09 (1.14,3)
D	1.92±0.54	1.91 (1,3)	2.07±0.48	2.02 (1.14,3)
P-value	0.054		0.236	

P-value based on ANOVA test

Tables 2 and 3 show the structure of the sessions.

**Table2.** Values of morning report program structure indicators in the internal departments of Ahvaz Jundishapur University of Medical Sciences

Variable	Mean±Standard deviation	Range
Start time	8.16±0.24	9-7.30
Meeting duration (minutes)	57.30±12.5	30-90
Number of meetings per week	8.34±21.67	1-6
Number of patients introduced per session	4.94±14.27	2-5
Introduction time of each patient (minutes)	16.04±14.70	10-45
Student age (years)	26.44±5.01	22-47

**Table3.** Structure of morning report meetings in the internal departments of the university

Variable	Status	Number	Percentage
The person responsible for introducing the patient	Often "senior resident"	132	58.9
Diseases under discussion	Often problematic and complicated diseases	155	69.2
Patient attendance at meetings	Often negative	174	77.7
Meeting manager	Often specialty professors	103	46
Presence of professors in meetings	Often always	202	90.2
Light of meeting place	Often desirable	131	58.5
Sound condition at the venue	Often desirable and relatively desirable	167	74.6
Ventilation condition in the meeting place	Often relatively desirable	113	50.4
Heating and cooling of the place	Often relatively desirable	113	50.4
The location of the professors in the meeting	Often in the front row and back to the contacts	177	79
The main audience	Often undetectable	176	78.6
Presence of specialists in other fields	Usually not present- Clinical Pharmacist (6 people mentioned)	171	76.4

The relationship between the indicators of the structure of the morning report program and the level of learners' benefit and emphasis on the issues raised according to the ANOVA and T-test is briefly shown in Table 4.

**Table4.** The relationship between the indicators of the structure of the morning report program with the level of benefit and emphasis on the subjects of the morning report

Morning Report Program Structure Indicators	Items	Benefit rate	Emphasis on the subjects
Start time	7.5	1.91±0	-
	8	1.97±0.58	2.14±0.51
	8.5	1.79±0.54	1.96±0.45
	9	2±.	
	P-value	0.03 (2-3)	0.01 (2-3)
Meeting duration (minutes)	30	1.7±0.555	2.22±0.67
	45	1.72±0.55	2.06±0.59
	60	1.96±0.54	2.08±0.46
	90	1.9±0.71	2±0.36
	P-value	0.01 (2-3)	0.75
Number of meetings per week	1	1.95±0.54	2.05±0.49
	2	1.8±0.51	1.96±0.47
	4	1.88±0.57	2.12±0.48
	6	1.94±0.6	2.19±0.62
	P-value	0.587	0.187
Number of patients introduced per session	2	1.95±0.56	2.1±0.46
	3	1.75±0.52	2.03±0.56
	4	1.81±0.56	2.01±0.55
	5	2.06±0.52	2.13±0.5
	P-value	0.026 (2-4)	0.451
Introduction time of each patient (minutes)	10	1.81±0.54	2.01±0.53
	15	1.96±0.56	2.1±0.45
	30	1.8±0.62	2.25±0.62
	45	2.07±0.61	2.07±0.67
	P-value	0.058	0.194

P-value based on ANOVA and T-test

## Discussion

In this study, the morning report educational programs in the internal departments of hospitals affiliated to the Ahvaz Jundishapur University of Medical Sciences have been evaluated in terms of structure, content, and quality.

In terms of the structure of morning reports, in the educational centers affiliated to the Ahvaz Jundishapur University of Medical Sciences, in about 90% of cases, morning reporting sessions start at 8 am, which is consistent with the results of many other studies (8,9). In some studies, the

beginning of the meetings is mentioned at 9 in the morning (Reilly & Maurice Lemon 1997), in the middle of the day (12), and the afternoon (12-13). In our study, the rate of learners' benefit at 8 o'clock was higher than other hours ( $P < 0.05$ ), so it is better to start sessions at 8 o'clock.

According to the results of the present study, the average duration of meetings in most cases was about 1 hour, which is consistent with the results of other studies (Wenderoth, Pelzman & Demopoulos 2002; Wenger & Shpiner 1993; Pupa & Carpenter 1985; Razavi, Shahbaz Ghazvini & Dabiran 2012; Banks et al. 2007). In other studies,

although the time mentioned for each session of the morning report was from 30 minutes (8) to 2 hours (16), it seems that the duration of one hour is more desirable. Learners' benefit level was also higher during this period ( $P < 0.05$ ). The standard duration of the morning report for the university departments should be determined through the standardization committees of the training programs, and they are required to observe the appropriate period, which in most cases is one hour.

The average number of morning reporting sessions in our study was 8 times a week. But in most of the related studies, these sessions have been mentioned 4 times a week (Pupa & Carpenter 1985; Westman 1999; Wenger & Shpiner 1993). In other studies, the number of morning reporting sessions during the week has been mentioned from 1 time (Schwartz et al. 2000; Spickard et al. 2000) to 6 times (Amin et al. 2000; Battinelli 1996; Parrino & Villanueva 1986). Therefore, in terms of the number of morning report sessions, Ahvaz Jundishapur Medical Sciences has been a pioneer. In the present study, the number of sessions is significantly different from the benefit rate, and in cases where the number of sessions was 6 times a week, the benefit rate of students has increased, which may be because increasing the number of sessions causes more repetition of educational topics, coverage of more topics, increasing the experience of the moderators and identifying strengths and weaknesses, and as a result, students benefit from the sessions increases.

In this study, in most cases, the patient is introduced in the morning reporting sessions by the senior resident, which is in line with the current trend in the world; In most of the studies that have been done in this regard, usually, the assistants are responsible for introducing the patient (Reilly & Maurice Lemon 1997; Banks et al. 2007; Battinelli 1996; Spickard et al. 2000; D' Alessandro & Qian 1986). In some studies, the on-duty intern is responsible for introducing the patient (Reilly & Maurice Lemon 1997; Pupa & Carpenter 1985; Barbour & Young 1986). The introduction of the patient by the senior resident leads to a better introduction of the patient and has

an educational aspect for the apprentices and interns. On the other hand, if the patient is introduced by the interns, it can increase their experience in history taking and also strengthen the skills of diagnosis, clinical decision making, problem solving and create a sense of social interaction and strengthen their sense of responsibility.

In most cases, the patients who are selected and introduced in our morning reporting sessions are patients with complications and problems. In other studies, all hospitalized patients (Pupa & Carpenter 1985; Amin et al. 2000; Parrino & Villanueva 1986; Rahnavardi et al. 2008; Ways et al. 1995), abnormal and rare patients (Westman 1999; Ramratnam et al. 1997), common patients (Wenderoth, Pelzman & Demopoulos 2002), and patients who are interesting in terms of the presenter (D' Alessandro & Qian 1999) introduced in the morning report meeting. It seems that if only patients with problems and complications are emphasized, patients who have less disease severity and complications and are more prevalent in the community will be forgotten and interns will not gain enough experience in these fields. In the study of Gross et al., most of the reported cases were patients with common diseases (Gross et al. 1999) and in the Wise study, in most of the meetings; patients with complications were introduced (Ways et al. 1995).

In the present study, the number of patients referred in each session had a statistically significant relationship with the level of benefit and the highest score was related to the introduction of 5 patients ( $P$ -value 0.026). Most studies have mentioned the introduction of 2 to 3 patients (Pupa & Carpenter 1985; Wenderoth, Pelzman & Demopoulos 2002; Ways et al. 1995), on the other hand, in our study, the time of introduction of each patient in most cases is about 16 minutes, but based on the results of most studies, the introduction of each patient is 5 minutes. Or it takes less (D' Alessandro & Qian 1999; Rahnavardi et al. 2008; Ways et al. 1995). Therefore, it seems that it is better to reduce the time of patient referral in morning reporting

programs and increase the content diversity of programs. Of course, if the goal is to deepen the content, it is appropriate to introduce 3 patients in one hour (Razavi, Shahbaz Ghazvini & Dabiran 2012).

In this study, in cases where the condition of ventilation, cooling, and heating of the place was relatively "favorable", the rate of students' benefit from the sessions was higher (Westman, 1999).

In the present study, only in limited cases, patients were present at the meeting, which is therefore consistent with the results of other studies (Wenger & Shpiner 1993; Battinelli 1996). Of course, since dealing with patients have inevitable benefits; more reflection should be done to confirm the accuracy of this process.

In most cases in the present study, the director and moderator of the morning reporting program were one of the expert professors of the faculty members. According to other studies, one of the senior assistants (Reilly & Maurice Lemon 1997; Banks et al. 2007; Battinelli 1996; Wenger & Shipner 1993; Ways et al. 1995; Gross et al. 1999) or one of the faculty members (Ways et al. 1995; Ramratnam et al. 1997; Gross et al. 1999) conducts the meetings. In cases where one of the faculty members is in charge of meeting management, the students benefit rate increases due to higher motivation. Therefore, considering more benefits, managing a meeting with faculty members can be more fruitful and will be more practical for all groups of learners.

In our study, almost all professors attended most of the sessions. According to other studies, professors attend all sessions (Razavi, Shahbaz Ghazvini & Dabiran 2012) or more than half of the sessions (Amin et al. 2000; Parrino & Villanueva 1986; Gross et al. 1999) regularly. In another study, the presence of professors has been mentioned as one of the most important factors in improving the educational quality of sessions (Ways et al. 1995).

The main audience of the sessions in this study is not learners of a specific level, but according to the results of most studies, the main audiences of the sessions are residents (Pupa & Arpenter 1985; Amin et al. 2000; Wenger & Shpiner 1993;

Rahnavardi et al. 2008). It seems to be better if the content of the morning reports is appropriate for all sections.

In the present study, specialists in other fields (usually clinical pharmacists) attended only a small number of sessions. The results of this case, based on other studies, are that in more than 70% of cases, specialists from other fields such as pharmacy and ethics attend meetings (Amin et al. 2000; Battinelli 1996). In the study of Ghanadi, 27.7% of the morning report sessions at the Lorestan University of Medical Sciences were attended by professors of other disciplines, including paraclinical disciplines (Farhadifar et al. 2016; Ghandi & Anbari 2015). The presence of professors in other fields makes the sessions more fruitful and deals with the diagnostic aspects of the disease and teaches how to interpret patients' diagnostic tests correctly.

In terms of content, the topics that were most emphasized were medical history taking, teaching logical requests for tests, and examining patients, respectively. While issues such as communication skills, health economics, medical law, and emphasis on the epidemiology of diseases were less discussed.

In various studies, various topics such as management, professional ethics, critical thinking, evidence-based medicine (Moharari et al. 2010), history taking, medical examinations, radiological and pathological examinations, medical consultations, patient care (Reilly & Maurice Lemon 1997), etrogenic diseases Hospitalization indications, Clinical skills (Parrino & Villanueva 1986), Initial evaluation of patients, Diagnosis and differential diagnoses (Pupa & Carpenter 1985), Complications of drugs (Sivaram et al. 1996), pathophysiology of diseases (D' Alessandro & Qian 1999), Reasonable request for diagnostic tests, Interpretation of data, Complications of diseases, Causes Death (Ways et al. 1995), proper professional communication (Moharari et al. 2010; Gross et al. 1999), health economics (Reilly & Maurice Lemon 1997; Amin et al 2000; Ways et al. 1995), the consequences of abuse (Battinelli 1996; Welsh, Pedot & Anderson 1996) and examination of the disease process (Gross et al.

1999; Pupa & Carpenter 1985) are mentioned as the contents of the morning report. Therefore, it is better to pay more attention to the subject diversity of morning reports.

### Conclusion

The morning report sessions in the internal departments of the Ahwaz Jundishapur University of Medical Sciences are structurally consistent with what has been experienced in the world. The extent to which learners benefit from the subjects is relatively acceptable, but to increase the level of benefit, more effort must be made on content diversity, the full presence of faculty members, the presence of specialists in other fields, and addressing ethical and social dimensions. It is necessary to develop standard models following the educational goals of clinical departments for morning report meetings, and it is suggested standardizing morning report education by reviewing valid scientific sources and formulating solutions based on local facilities. According to the results of this study, it is better that morning report sessions are conducted by experienced people and achieve the main goal, which is to change attitudes, strengthen critical thinking and foster learners' creativity, all aspects of patient care, both clinical and laboratory aspects. And social, moral, nutrition, and rehabilitation aspects of patients should be considered in the content of the program.

Limitations of the research: One of the limitations of this research is the non-participation of a number of professors in the study and also the use of convenience sampling. This type of sampling in cross-sectional studies can lead to increased sampling error and reduce project accuracy.

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