

Conformity assessment of Minimal Standard Terminology (MST) in the reports of endoscopy and colonoscopy done by internal specialists and gastroenterologists in Tehran

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ABSTRACT

Aim: This study reports the prevalence observed in Minimal Standard Terminology (MST) writing in three hospital endoscopy centers in Tehran.

Background: In 1991 European association decided to recognize the minimal essential terms for preparing the endoscopy reports using computer software. These activities have led to the arrangement of MST.

Patients and methods: The cross - sectional study in 2070 endoscopy and colonoscopy reports from three hospital endoscopy centers in Tehran to review their information by using a check list that includes all the items available in MST, were collected. Main variables were including indication, describing findings, anatomy, diagnosis, diagnostic procedures, treatment procedures and examination limitations. Based on MST our collected data were divided to three main groups, the standards group, close to the standard and non-standard groups.

Results: Of total reports in the three hospitals surveyed, 19% of indications, 25.9% of finding descriptions, 58.4% of digestive system anatomy, 41.6% of diagnosis, and 15.5% of examination limits were recorded as standard. Of all diagnostic and therapeutic procedures performed, 26.3% of diagnostic procedures and 2.3% of treatment processes were recorded as non-standard form.

Conclusion: Considering the existence of multiple headlines in MST criteria, accurate and complete application in handwritten reports is a widespread problem and it is recommended to use the computer software that includes all the headlines of the MST for endoscopy and colonoscopy reporting.

Keywords: Minimal standard terminology, Patient information, Endoscopy, Colonoscopy.
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Introduction

Importance of accurate and standardized language to describe medical findings should not be underestimated. All medical activities are based on observation and communication. Because of international communication, the need for standardization of sand text preparing necessary reports, computer help, and doctors should be able

to provide standard reports of observations for the people that are involved in the process of treating patients. Gastrointestinal endoscopy is a process that the GI doctor should report the information in the image and text format. The purpose of standardization is to improve working and reduce the cost of reporting as well as the Improvement of access to information (1-3).

In 1991, the Ninth World Congress of Digestive Diseases in Sydney, European Community of Gastrointestinal Endoscopy

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decided to select minimal necessary vocabulary for reporting by the aid of computers. For this reason endoscopy reports were examined, Anatomical terminology and words that were used for describing the findings in more than 5% of reports, were selected. Words chosen were posed at council meetings. Finally, after clinical studies in European countries, Japan and the United States, a final list of terms for reporting endoscopy findings by the aid of computers, Minimal Standard Terminology (MST) was prepared (2-4).

MST criteria are one of the important findings for standardization of medicine. For example it helps to prevent the arbitrary usage of words. This loss of freedom is a charge necessary for moving toward evidence-based medicine [2-4]. Reporting with the aid of computer software based on MST compared to traditional methods is a time effective method. It also leads to improved quality, lowered costs of data collection, and provides research information. The value of digital information is the possibility of easy storage, modification, and study without harming basic information (5). Considering the importance of applying standard criteria in the reporting of diagnostic and treatment processes and the fact that there is no published comprehensive review on the compliance of international reporting standards in writing processes in Iran, in this study we purposed to evaluate compliance of MST standards in the report writing in endoscopy centers of Tehran hospitals.

Patients and Methods

In this cross-sectional study, all reports of endoscopy and colonoscopy at the three Endoscopy Centers of Tehran were studied. The study protocol was approved by Medical Ethics Committee of AJA University of Medical Sciences. Ethical considerations for compliance and in order to protect the rights of physicians and patients, we did not register the name of patients

or hospitals. A total of 2070 reports include 1530 endoscopy and 540 colonoscopy reports were surveyed. With the help of a checklist, all MST items were collected. Based on the amount of compliance criteria, data were divided into three groups, namely MST standard, close to the standard and non-standard. To compare the writing reports from internal medicine specialists and gastroenterologists, a scoring method was used.

Score of standard report was 1, close to standard was 0.5 and nonstandard was 0, and the scores were multiplied in frequency. Thus, score of a physician with 100% standard frequency for describing a word, was 100.

The main studied variables, including indications from the standard MST, describing findings, anatomy, diagnosis, diagnostic process, treatment process and examination limitations. Statistical analysis of collected data was performed using SPSS software version 13.

Results

From the review of 2070 endoscopy and colonoscopy reports in three hospitals in Tehran, following results were obtained. A total of 81 percent of indications of endoscopy and colonoscopy were non-standard written. Of all described findings related to endoscopy and colonoscopy, 37 percent were non-standard and 37.1 percent were close to the standard. Gastrointestinal anatomy in 58.4 percent of reports was based on the MST criteria and in 37 percent of cases was reported as non-standard, and overall the anatomy of the upper gastrointestinal tract had been mentioned more incomplete than lower GI. Diagnosis in 41.6 percent as standard and 58.4 percent were non-standard. The diagnostic process in 50.1 percent of cases and treatment process in 86.7 percent were not registered. Report of the diagnostic process that were registered, 26.3 percent were non-standard. This value on the

Table 1. Compliance rates of various parts of reports with MST criteria.

Variable	Standard	Close to Standard	Non-Standard	undone
Indication	313 (19%)	-	1757(81%)	-
Description of Findings	438 (25.9%)	792 (37.1%)	840(37%)	-
Anatomy	981 (58.4%)	1012(37.9%)	77 (3.7%)	-
Diagnosis	757 (41.6%)	-	1317(58.4%)	
Diagnostic Procedure	-	528(23.6%)	327 (26.3%)	1148 (50.1%)
Treatment Procedure	55(2.7%)	113 (8.3%)	27 (2.3%)	1095 (86.7%)
Limitations of Examination	283 (15.5%)	-	265 (18.8%)	1521 (65.7)

treatment process in cases which were registered was calculated to be 2.3 percent. In 65.8 percent of reports entered into the study, the limitations of endoscopy and colonoscopy were not mentioned and in 18.8 percent of cases, were reported non-standard. Note that all the reports reviewed were handwritten and non-typed. Five percent of reports were non-legible and more than 70 percent of them were written in English. Also, 35 percent reported instances of words and expressions used were unconsidered. In total 11 percent of endoscopy and 47 percent of colonoscopy reports were recorded as incomplete (Table 1).

Comparing the endoscopy and colonoscopy reports performed by internal medicine specialists to that of gastroenterologists, a significant difference between the two groups was not observed, as the compliance of MST criteria. Number of endoscopy and colonoscopy procedures performed by gastroenterologists was more than that performed by internal medicine specialists group. In total, none of these two groups were adherent to MST criteria completely.

Discussion

MST has a world-wide acceptance and in order to optimize and make it far more compatible with modern day technology, it has been edited several times (6, 7). However, our study results showed that about half of the reports of endoscopy and colonoscopy performed in three hospitals in

Tehran were non-standard and they have not complied with MST criteria. However, in two similar studies conducted in France, 95 percent compliance level of MST was observed. In a study done in 2000 in France, 6232 endoscopy, colonoscopy and ERCP reports, in nine university hospitals in Europe were collected and evaluated. In total they found that in 91 percent of endoscopy reports, 99.5 percent described the findings, 95.8 percent of words used to diagnose, 98.9 percent of the diagnostic processes, 94.8 percent of treatment processes were in compliance with MST criteria, and only in less than 5 percent of reports, free text was used (8, 9).

According to the observing part of the MST criteria in endoscopy reports from Iran, we can conclude that physicians are familiar with these standards and there is no need to develop training programs urgently. But application of the criteria in the handwritten reports is difficult, because of abundance of existing topics in MST. That's why some compress and applied software is produced that encourages the physicians toward the use of MST criteria in writing the reports and improves the reports quality and prevents from neglected important headlines of the report (1).

In the study conducted by Waye and colleagues in 2001 showed that unlike the results of earlier studies, reporting by the aid of computer software than traditional methods, does not consume more time (In this study, registration of each report using software was recorded five minutes) (3, 10).

In another study at three endoscopy centers that was done during a six-month period, three different methods of reporting endoscopy were compared. They reached the conclusion that the report prepared by computer software, will not take more time than handwritten reports and also using the computer software provides the possibility that the reports recorded in the hospital database can be kept classified and can be utilized for research and statistical studies on them easily done (11). Evolution of consecutive endoscopic procedures and constant changes in digestive disease screening programs on one hand, and the differences, between centers and endoscopy procedures in different countries on the other hand will necessitate the need for the endoscopy reporting software with variability feature (4, 12, 13). Per Say, software available for endoscopy reporting software based on MST is Endobase III (Software Olympus) that provides three different methods for endoscopic reporting for physicians.

The preparation of this software was assisted by guidelines of two medical universities, and four hospitals and instructions of gastrointestinal endoscopy forums (13). Final edition of MST criteria (third edition) completed the main part of the endoscopy report and makes it standard. Nonetheless, yet does not cover fully all findings and endoscopy descriptions. Accordingly OMED groups for more complete context introduced recommendations to the third edition of MST criteria, including Minimal Standard Reporting (MSR) and the Minimal Standard Imaging (MSI) and these additional parts will cover all of the original practical steps of endoscopy and also offers recommendations for recording images (2, 3 14).

Finally it recommended the use of country endoscopist's comments about the MST criteria, and made possible reforms needed to localize these standards to expand its application. Considering the various headings of MST, it is better to use it in the form of software to provide

fully standard endoscopy reports and in prints. Keeping hospital records also provides good assistance to research activities.

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