



## Average medical visit time in Iran: A systematic review and meta-analysis

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### Abstract

**Background:** Visit length is an indicator that can be used to assess patients' satisfaction of the health care services. In recent years, some studies have focused on the mean visit time in Iran. This study aimed at determining the average visit time in Iran by performing a systematic review and meta-analysis.

**Methods:** In this study, Embase, PubMed/MEDLINE, Scopus, ISI/Web of Science databases, and Google Scholar search engine, as well as Iranian national databases/thesauri, such as MagIran, SID, and Irandoc were used. These databases were searched from their inception until September 2017. The quality of retained studies was assessed using the STROBE checklist. Average visit length was reported using stochastic model with 95% confidence interval (CI). I<sup>2</sup> and Q tests were used to assess the heterogeneity of the studies. A sensitivity analysis was conducted to ensure the stability of the results.

**Results:** After searching the scholarly databases and reviewing the articles based on inclusion and exclusion criteria, 6 studies were finally selected. Based on the random model, the mean visit time was 4.89 minutes in Iran, ranging from 4.66 to 5.12 minutes (p=0.82). The most time visit in specialists belonged to psychiatrists with 9.12 (7.28 to 10.96) minutes (p=0.19) and the lowest belonged to internists with 3.59 (2.24 to 4.95) minutes (p=0.00), respectively.

**Conclusion:** The average visit time in Iran was estimated to be 4.89 minutes. To increase patients' satisfaction and provide a better disease treatment and management in Iran, the following suggestions could be helpful: properly distributing physicians across the country, reducing waiting lists, and implementing the use of guidelines to standardize the visit time.

**Keywords:** Visit length, Physicians, Specialists, Iran, Systematic review, Meta-analysis

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### Introduction

Organizations providing health care services are seeking high-quality medical care services, which are the basic right of patients and an indicator of a good, efficient organization. The patient has the right to benefit from the best treatments available and from state-of-the-art facilities; furthermore, a proper physician-patient relationship

makes the patient talk more comfortably about his/her disease condition, which in turn helps the physician in the diagnosis and selection of appropriate treatment. Adequately organized physician-patient appointments provide the possibility of such interaction (1). Moreover, visit length is considered an indicator that can be used to assess

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#### ↑What is "already known" in this topic:

Visit time depends on factors such as physicians' behavior, type of treatment, type of insurance, patient-physician relationship, geographical factors, culture, and structure/organization of health care system.

#### →What this article adds:

The mean visit time was 4.89 minutes in Iran, ranging from 4.66 to 5.12 minutes. To the best of our knowledge, there are still no overviews addressing this important issue in Iran, whose findings could be of great help to the health sector policymakers to monitor the duration of medical visits in Iran and make plans to increase the visit time if necessary.

the patient's satisfaction of the provided health care services (2, 3). Visit time can be defined as the time from the moment the patient enters the examination room until he/she leaves the room (4). An ideal visit is recommended to last for about 10 to 15 minutes, respectively, for general practitioners and specialists (5). A range in the average visit length from 7 to 34 minutes has been reported in studies conducted in different contexts worldwide (5-8). Usually, the time dedicated to patients is short in developing countries due to lack of man power and lack of quality monitoring and supervision on the length of physicians' visits (9). Further, in some of these countries, some patients are visited together at the same time, which would violate patients' rights (10).

Visit time depends on factors such as physicians' behavior, type of treatment, type of insurance, patient-physician relationship, geographical factors, culture, and structure/organization of the health care system (11). Appropriate visit length enables a more efficient health care delivery such that the patient will feel less need for next visits. Fewer referrals will lead to a reduction in both direct and indirect costs and to a decrease of additional overhead costs. Many referrals can lengthen, indeed, the waiting queue in healthcare centers. An unusually long waiting time can lead to a reduced patients' satisfaction (12).

Medical visit length is important for physicians to help them understand the precise illness that the patients are suffering from and their causes and to prescribe the best management option (13, 14); moreover, it is important for patients to understand the treatment they should adhere to (13). A review study showed that appropriate visit time has favorable effects on the processes and results of treatment between the physician and the patient (15). Some studies indicate that the duration of the visit affects the quality of the services provided (16, 17).

In recent years, some studies have focused on the mean visit time in Iran; and awareness of this topic could help health care providers to better organize their practice, make plans to monitor visit time and its impact on patients' level of satisfaction and their treatment status.

Health care policymakers in Iran are working to increase the duration of medical visits in such a way that patients would feel more comfortable to talk to their physicians about their disease and/or symptoms. To the best of our knowledge, there are still no overviews addressing this important issue in Iran. Thus, this study aimed at determining the average visit time in Iran by performing a systematic review and meta-analysis.

## Methods

The present study was conducted according to the PRISMA guideline, which is commonly used for assessing, synthesizing, and reporting primary studies in systematic reviews and/or meta-analyses (18).

To find relevant studies, we searched Embase, PubMed/MEDLINE, Scopus, ISI/Web of Science databases, and Google Scholar search engine, as well as Iranian national databases/thesauri, such as MagIran, SID, and IranDoc. These databases were searched from their inception until September 2017. The search strategy used was as

follows: a string of keywords such as "visit time", "length time", "visit length" "hospital", "physician" and "Iran" were properly connected by Boolean connectors. When appropriate, wildcard option and medical subject headings (MeSH) were used (The full search strategy used for searching in PubMed/MEDLINE is available in Appendix 1).

### Inclusion criteria

Studies that reported visit length or consultation length by the physician were considered potentially eligible for the present study.

### Exclusion criteria

On the contrary, studies without appropriate quantitative data or overlapping data were excluded.

Two authors independently assessed the quality of selected studies utilizing the STROBE checklist (19). Any disagreement was resolved through discussion and dialogue until consensus was reached. According to the quality scores, studies were classified into 3 classes: good, average, and weak. More specifically, studies that gained 1 to 9, 10 to 17, and 18 to 22 points were classified as poor, average, and good categories, respectively. After independently selecting the studies, two authors extracted information on articles including first author, year of publication, study setting, sample size, and reported mean visit length. Disagreement between the two authors was resolved by discussion or asking a third person as a judge (The STROBE is available in [www.strobe-statement.org](http://www.strobe-statement.org)).

Average visit length was reported using stochastic model with its computed 95% confidence interval (CI).  $I^2$  test was used to assess heterogeneity among studies (14). A sensitivity analysis was conducted to ensure the stability of the obtained results. Subgroup analysis was performed based on quality and publication year of the studies retained in the current meta-analysis and their sample size. The meta-regression analysis was performed according to the year of publication, sample size, and source of heterogeneity between studies. Considering that the number of studies was less than 10, it was impossible to examine the publication bias.

Data analysis was performed using STATA Ver.12 (Stata Corp, College Station, TX, USA) software, and *p*-values less than 0.05 were considered significant.

## Results

After searching the scholarly databases and reviewing articles based on inclusion and exclusion criteria, 6 studies were finally retained (20-25). Figure 1 displays the details of the search process.

Main characteristics of the studies included in the present meta-analysis can be found in Table 1.

Based on the random model, the mean visit time was 4.89 minutes in Iran, ranging from 4.66 to 5.12 minutes ( $p=0.829$ ) (Fig. 2).

The average visit time broken down by physicians' specialties is presented in Table 2 and Fig. 3.

Results of subgroups analysis based on year of publication, sample size, and quality of studies are demonstrated

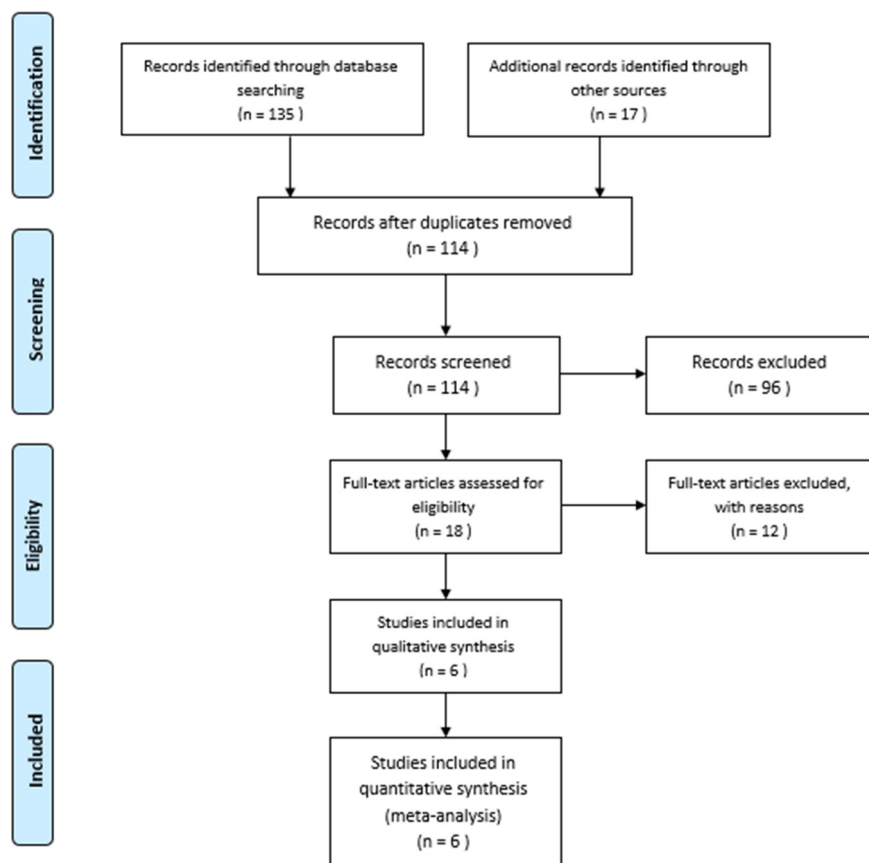


Fig. 1. Flow chart of the present meta-analysis

in Table 3.

Results of meta-regression analysis based on publication year and sample size are presented in Table 4 and Fig. 4.

Sensitivity analysis revealed that obtained results were robust and consistent, as no change could be detected before and after analysis (Fig. 5).

Table 1. Characteristics of studies included

First author	Year	Type of study	Sample size	Mean (minutes)	City	Score of quality
Mosadegh rad	2004	Cross-sectional	1336	4.34	Ghazvin	14
Khori	2012	Cross-sectional	620	6.9	Gorgan	15
Mohebbifar	2014	Cross-sectional	160	NA	Ghazvin	19
Hasanpoor	2015	Cross-sectional	428	4.67	Ghazvin	16
Faraji Khiavi	2016	Cross-sectional	550	NA	Ahvaz	20
Janati	2017	Cross-sectional	540	8.25	Tabriz	19

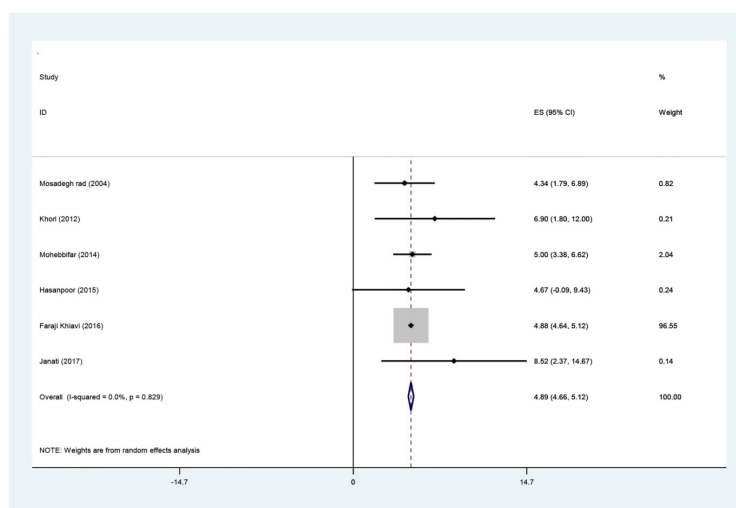


Fig. 2. The overall mean visit time in Iran

Table 2. The average visit time broken down by physicians' specialties

Type of specialty	Number of studies	Mean of minutes (95%CI)	I <sup>2</sup>	p
Internal medicine	4	3.59 (2.24 to 4.95)	87.9%	<0.001
Cardiology	3	5.06 (1.08 to 9.05)	99.5%	<0.001
Infectious diseases	2	5.91 (0.52 to 11.30)	77.7%	0.034
Neurology	3	3.8 (3.60 to 4.14)	37.5%	0.202
Obstetrics and Gynecology	4	4.21 (2.77 to 5.64)	93.3%	<0.001
Ophthalmology	4	5.31 (3.69 to 6.94)	95.6%	<0.001
Orthopedic	4	5.42 (3.93 to 6.92)	96.4%	<0.001
Pediatrics	4	4.83 (3.13 to 6.53)	88.3%	<0.001
Psychiatry	2	9.12 (7.28 to 10.960)	40.5%	0.195
Surgery	4	4.29 (3.59 to 4.99)	44.3%	0.145
Urology	4	4.55 (3.50 to 5.60)	82.1%	<0.001

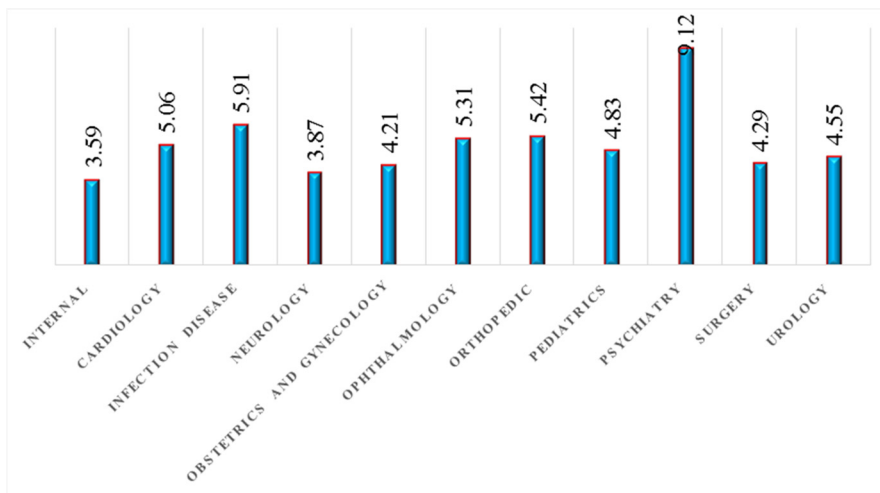


Fig. 3. Graph of average visit time by physicians' specialties

Table 3. Result of subgroup analysis of average visit time in Iran

Variable	Number of studies	Mean in minutes (95%CI)	I <sup>2</sup>	p
Year of publication				
<2013	2	4.85 ( 2.57 to 7.13 )	0%	0.378
>2013	4	4.89 ( 4.65 to 5.12 )	0%	0.713
Sample size				
<500	2	4.97 ( 3.43 to 6.50 )	0%	0.898
>500	4	4.88 ( 4.65 to 5.12 )	0%	0.548
Quality of studies				
Good	3	4.89 ( 4.66 to 5.12 )	0%	0.506
Medium	3	4.82 ( 2.76 to 6.87 )	0%	0.677

Discussion

Patients' satisfaction is an important part of a dynamic process that can result from a good and effective patient-

physician relationship (26). The extant literature indicates that a good relationship between physicians and patients leads to a more effective treatment (27). For many diseas-

Table 4. Result of meta-regression of average visit time in Iran

Variable	Coef	SE	T	p
Year	-0.000	0.001	-0.39	0.719
Sample size	0.030	0.1041	0.29	0.788

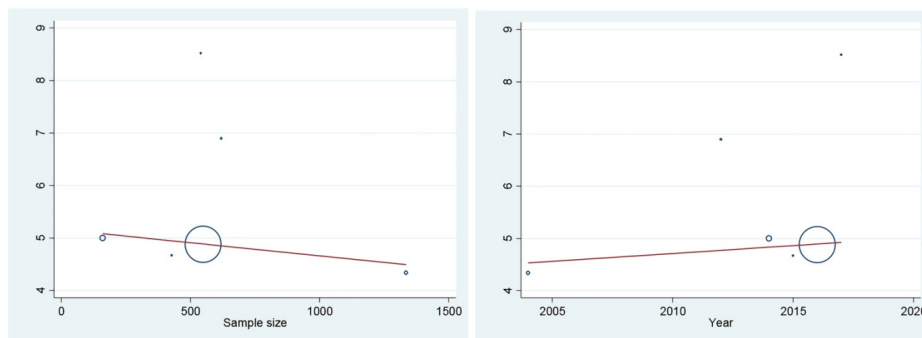


Fig. 4. Meta-regression based on sample size and year of publication

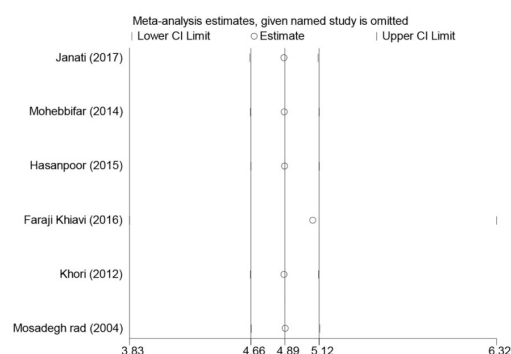


Fig. 5. Sensitivity analysis

Table 5. Visit time in other countries in comparison with Iran

Author	Country	Average of visit
Chen	China	34.3
Bener	Qatar	From 7 to 17.4
Tähepold	Estonia	9
Migongo	USA	14.5
Aomatsu	Japan	17

es, behavioral changes and patient adherence to treatment regimen can be induced by an appropriate physician visit.

The finding of this study indicated that the average visit time was 4.89 minutes in Iran, which is comparable with that of other studies conducted in other countries (Table 5) (5-8, 28).

In a study conducted in 6 European countries, it was found that average visit time was 7.6, 7.8, 9.4, 10.2, 15, 15.6 and 10.7 minutes in Germany, Spain, England, the Netherlands, Belgium, and Switzerland, respectively (29). However, visit length in Iran is significantly shorter. Physician shortage, high workload of physicians, long waiting lists, lack of proper guidelines, cultural-social conditions, disease type, personality characteristics of patients, and features of the health care system are among the factors which contribute to reduced visit time in Iran (29, 30). On the contrary, women and elderly patients are more likely to be visited for longer time (5). Another important factor is the place of residence (urban versus rural areas) (31). Also, physician characteristics, such as gender, age, and attitude towards patients, play a major role (29). Older and female physicians tend to have a positive attitude towards patients' problems, so they are more inclined to increase the visit length (32-34). Changes in the health care system can affect the visit time as well (11).

Furthermore, besides visiting patients, some Iranian physicians have managerial duties and administrative responsibilities (35).

The findings of our study showed that psychiatrists tended to visit their patients for longer time. The physician's visit length specifically depends on the type of disease. In the case of patients with mental health problems, physicians need more time to better diagnose the disease to talk to the patient and listen to his/her problems for longer time. Studies show that psychiatrists spend more time with their patients (36).

The findings of the current meta-regressions showed that visit time in Iran increased and decreased based on

publication year and sample size, respectively, even though this trend was not statistically significant. Recently, the Iranian Ministry of Health and Medical Education (MOHME) delivered a national guideline for standardizing visit time and indicated that an appropriate visit should last 15, 25, and 30 minutes for general practitioners, specialist physicians, and psychiatrists, respectively. Iran's health system underwent a major change in its health system. The plan of the 2014 health reformation has many goals, one of which is standardization of the visit time (16). This study found that there is still a gap between the current visit time and the announced standards.

However, this study had several limitations: first, the number of studies included in this meta-analysis was small; therefore, there is a need for further studies to better comment on the visit length in Iran. Also, the conducted studies were limited to few Iranian provinces, and considering the size and distribution of population in Iran, future studies should be performed in all provinces of Iran.

## Conclusion

The average visit time in Iran was estimated to be 4.89 minutes. Thus, to increase patients' satisfaction and provide a better disease treatment and management, the following actions may be useful: properly distributing physicians across the country, reducing waiting lists, and implementing the use of guidelines to standardize the visit time.

## Conflict of Interests

The authors declare that they have no competing interests.

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## Appendix 1

Search strategy in Pub med:

```
#1 visit time
#2 length time
#3 visit length
#4 #1 OR #2 OR #3
#5 hospital
#6 physician
#7 specialist
#8 #5 OR #6 OR #7
#9 Iran
#10 #4 AND #8 AND #9
```