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Factors Affecting Outpatient Consultation Length among Specialists in Tabriz, Iran

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ABSTRACT

Background: Sufficient length of consultations is of utmost importance for improving the quality of care and establishing a good physician-patient relationship. Multiple factors affecting outpatient consultation length were investigated among Sheikh Al-Raisi specialists. Sheikh Al-Raisi is a general medical institute in Tabriz, in 2018.

Methods: This study was a cross-sectional and performed at a specialty clinic in Tabriz. In order to select the samples, random sampling was used. The consultations of 400 patients with 18 specialists were analyzed. Length of Consultation and demographics of patients and physicians were collected in the year 2018. Checklists were used to collect the data and a multiple regression analysis was applied to investigate the association of the variables with consultation length.

Results: The mean and standard deviation consultation time was 6.9 and 2.6 min. In the multivariate model, the consultation time was longer for female patients. Lengthy consultation time was recorded in patients with bachelor's degrees or higher levels of education. The consultation time was longer in patients with gynecology problems (mean = 9.1) compared to those with other problems. In addition, older and female physicians provided longer consultation.

Conclusion: Clinical consultation time in specialists' practice is estimated as short and is associated with the characteristics of the patients and the doctors and the types of their specialty. The results can be applied to make specialty consultation more effective, which can ultimately result in the delivery of the most optimum consultation period for each and every patient.

Keywords: Consultation length, Physicians, Outpatient, Iran

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Introduction

Physician-patient communication is considered as a crucial factor in medical practice. The consultation time is surely a vital restrictive element which has an impact on the expectations of patients and doctors in their communication(1). Moreover, the duration of consultation is known as one of the key issues that can influence the quality of the medical care. Therefore, adequate consultation time is essential to create a doctor-patient relationship and to achieve favorable consequences in medical services (1, 2).

The duration of consultation is regarded as a yardstick that can be applied to evaluate the satisfaction of patients from the given health care (3, 4). Consultation time can be defined as the allocated time for each patient who comes to the examination room until he/she gets out of the room(3). The most standard and highly recommended consultation length is approximately 10 and 15 minutes for general practitioners and specialists in other countries, respectively(5). A systematic review of 67 countries showed that the average consultation time differs across the world, ranging from 48 second in Bangladesh to 22.5 min in Sweden (2). Usually, the time dedicated to patients is evaluated shorter in the developing countries due to the lack of doctors, high workload, poor communication with patients and the lack of quality of monitoring and supervision on the length of physicians' consultation (2, 6, 7). Furthermore, in some of these countries, several patients are visited together simultaneously, which would be the violation of the patients' rights (3).Nevertheless, consultation time in Iran is estimated shorter in comparison with other countries (3).

Generally speaking, it is widely accepted that the longer consultations appear to be better for both patients and health care systems (8-10). However, a systematic review study revealed that there is inadequate evidence to conclude whether longer consultation will be to the benefit of the patients or not. This study emphasized on the existence of some evidence that indicates longer consultations and expanded consultation periods have a positive effect on health promotion, patient enablement and the quality of record keeping (11).

Other studies showed that longer consultations can provide a more precise diagnosis of mental disorders and the fact that time pressures can be the main obstacle obstacles on the way of curing depression (11).

The evidence also shows that longer consultations in the patients with multi morbidity can lead to the better quality of life and patient enablement (12, 13). Patients are not generally satisfied with the short consultation time with their doctors. Apart from that, longer consultations lead to more cost-effective, more accurate prescriptions and less inappropriate referrals (1).

Several factors have been proved to have impact on consultation time including: the physicians themselves, the patients, reasons for the visiting a doctor, type of treatment, type of insurance, the relationship between the physician and the patient, organizational factors, the geographical region, culture, structure and the healthcare system(1, 7, 14). Although determining and controlling the optimum consultation time are not easy tasks in everyday practice, identifying the related factors that have impact on consultation time could be essential for the effective provision of the specialty services, which could ultimately lead to the delivery of satisfactory specialty care. On the other hand, there is the paucity of published studies that can prove the acceptable consultation time in specialty practice in Iran. The purpose of this study is to investigate the length of consultation time at a Government Specialized Clinic in Tabriz, Iran. Tabriz is located in the west of East Azerbaijan province of Iran, in the eastern and southeastern part of Tabriz plain. Also, the potential characteristics of the patients and physicians that could affect consultation time were scrutinized.

Materials and Methods

Design and Sample

A Cross-sectional descriptive design was used in this study which is conducted at the specialty

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outpatient clinic of Sheikh Al-Raisi, which is a general medical institute in Tabriz, Iran.

According to the published data by Tabriz University of Medical Science (TBZMED), the number of visited patients per year was almost 600.000 in 2017, most of whom were the residents of south west of Iran (West Azerbaijan, East Azerbaijan and Kurdistan). A total of 54 physicians (32 male and 22 female) including 17 internal specialists, 8 orthopedics, 12 surgeons, 9 cardiologists and 7 gynecologists participated in this study. The clinic is managed by the Treatment Affair of TBZMED that provides specialty care to the visiting patients every day.

In this care center, patients must call in advance in order to make appointments with physicians. In a typical consultation, the doctors discuss the patients' current illnesses, check the general condition of the patients and their laboratory data, recommend some instructions, and write prescription. All these processes are evidenced in a health record paper by the physicians during the consultation. All physicians involved in the study were familiar with the consultation procedures at the clinic.

All physicians recruited full time by the TBZMED. Physicians' fee for service was paid according to state tariff. 30 % of the visit cost for each patient is paid by insurances, and the rest, which is 70 %, is paid by the TBZMED and the patients themselves (55 % by TBZMED and 15 %by the patients).

The more patients with less consultation time, doctors visit, the more money he/she is going to make. The charge of each visit is set on predetermined tariff by the ministry of health. This fee is not dependent on the length of consultation. Our sample included all the patients who paid a visit in this clinic from April and May 2018. The including criteria were the patients' age, at least 16 years old, and the ability to speak Persian. The patients with psychological problems were excluded due to longer consultation time. For patients who frequently visited the clinic during the aforementioned period, only the earliest visit was included.

Finally, 400 patients were selected randomly to participate in this study that were divided into the five types of specialties including internal medicine, orthopedic, surgery, cardiovascular, and gynecology.

Tool and Data collection

The data was collected by a researcher-made check list that included the information about the doctors and the patients. Having designed the checklist, in order to increase the validity of the checklist, the opinions of professors and experts were also used. The characteristics of patients included their age, gender, and level of education. Regarding physicians, the age and sex were collected. Two questions were asked from the patients about their satisfaction of the treatment and their information about medicine.

These questions were measured using a five-point Likert scale: 1 = very low, 2 = low, 3 = medium, 4 = high, 5 = very high. The satisfaction scores were measured in the waiting room after each consultation in this study Consultation length was recorded by a chronometer. The chronometer measured the exact period of time when the physician invited the patient into the consultation room until he/she left the room.

Ethics approval and consent for participation

This research project was approved by the Ethics Committee of Tabriz University of Medical Science (IR.TBZMED.REC 1397.95-03-193). Informed writing consent was obtained from patients who participated in the study.

Data analysis

Data were analyzed using SPSS version 20 software. In the descriptive statistics, the mean and frequency values of the diverse variables were presented. With regard to the consultation length, both the mean and median values were reported because the distribution was right-skewed. Since the consultation length was measured in minutes, the variable can have only positive integer values. Therefore, count data regression models, namely the Poisson model or the negative binomial model are considered as proper for the analysis. Before starting the data

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collection, letter of introduction was received from Tabriz Medical Sciences Department. Then, questionnaires were completed after obtaining verbal consent.

In the model, the following variables were examined; patient's age (divided into four groups: 16 to 25 years old, 26 to35 years old, 36 to 45 years old and ≥ 46 years old), patient's sex (male/female), physician 's age (divided into three groups: 30 to 40 years old, 41 to 50 years old and ≥ 51 years old) and physician's sex (male/female). Total satisfaction and information score were divided into three categories: low, medium and high. Then, the ratio of the consultation length according to the variables was accounted by computing the exponent of the regression coefficients. All analyses were performed using SPSS version 20 (SPSS Inc., Chicago, IL, USA). All statistical tests were two-sided, and the threshold for statistical significance was P-value < 0.05.

Results

The demographic characteristics of the study participants are presented in Table 1. Maximum and minimum duration of consultation were related to gynecological (9.1 min) and surgical (5.1 min) patients, respectively. The mean and median consultation length for all patients was 6.9 min and 7 min, respectively.

Table 2 analyzes the mean consultation length according to different variables. Multivariate analysis showed significant differences in consultation length according to patients' sex and education, physician's age, sex and their type of specialties (15.1).

The consultation time was 0.51 times (95 % CI = - 1.02 to - .06) longer for females in comparison with male patients.

The consultation time was shorter for illiterate patients, those with diploma or under diploma, compared to those with bachelor's degree or higher with the ratios of 1.32 (95 % CI = - 2.23 to - 0.40), and 0.77 (95 % CI = - 1.41 to - 0.14), respectively.

The consultation time for patients with internal, orthopedic, surgery and heart problems were: 1.53 (95 % CI = - 2.42 to - 0.63), - 2.02 (95 % CI = - 2.88 to - 1.17), - 2.18 (95 % CI = - 3.27 to - 1.08) and - 1.89 (95 % CI = - 2.84 to - 0.95) times lower considering the consultation length, compared to those with gynecology problems.

Physician's sex and age were significantly associated with consultation length (15.1). The consultation time was 1.78 times (95 % CI = - 2.69 to 0.85) longer with females comparing to male physicians. Furthermore, the consultation time was 1.89 (95 % CI = - 2.83 – 0.97) times longer with physicians aged 30 to 40 years old, compared to those physicians aged < 51 years old. There was no significant association between consultation length and patient's age, their treatment satisfaction and patient's information.

Table 1. Demographic characteristic of study participants

Variable	Frequency (Percentage)
Number of all patients	400
Consultation length in minutes, mean (standard deviation)	6.9 (2.6)
Consultation length in minutes, median	7
Consultation length in minutes, mode (min , max)	6 (2 , 17)
Age, mean (standard deviation)	41.6 (15.1)
Man, n (%)	154 (38.5)
Women, n (%)	246 (61.5)
patients visited by Internal medicine specialist, n (%), mean (standard deviation)	118 (29.5), 7.0 (2.4)
Patients visited by orthopedic specialist, n (%), mean (standard deviation)	98 (24.5), 6.8 (1.9)
Patients visited by Surgeon, n (%), mean (standard deviation)	60 (15.0), 5.1 (2.0)
Patients visited by Cardiovascular, n (%), mean (standard deviation)	72 (18.0), 6.7 (2.6)
Patients visited by Gynecologist, n (%), mean (standard deviation)	52 (13.0), 9.1 (3.3)

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Table 2. Mean consultation length and the results of the negative binomial model

Characteristics	Number of all patients	Consultation length in minutes, mean (SD)	Multivariate model Ratio (95% CI)	P
Patient's age				
16-25	62	6.5 (2.1)	- 0.24 (- 0.96 to 0.49)	0.522
26-35	98	7.4 (2.7)	0.44 (- 0.21 to 1.09)	0.180
36-45	90	7.1 (2.8)	0.05 (- 0.58 to 0.69)	0.867
≥ 46	150	6.6 (2.6)	1.00 (reference)	-
Patient's gender				
Women	256	7.2 (2.8)	1.00 (reference)	-
Men	154	6.3 (2.1)	- 0.54 (- 1.02 to -0.06)	0.027
Patient's education level				
Illiterate	54	6.1 (1.9)	- 1.32 (- 2.23 to -0.40)	0.005
Under diploma and diploma	249	6.8 (2.7)	- 0.77 (- 1.41 to -0.14)	0.017
Top diploma	24	7.0 (1.8)	- 0.67 (- 1.75 to 0.42)	0.230
Bachelor's degree and higher	73	6.9 (2.6)	1.00 (reference)	-
Patient's information				
Low	193	6.6 (2.5)	0.09 (- 0.47 to 0.66)	0.741
Medium	91	7.2 (2.9)	0.22 (- 0.44 to 0.87)	0.515
High	116	7.1 (2.5)	1.00 (reference)	-
Patient's satisfaction				
Low	36	5.6 (3.5)	- 0.41 (- 1.24 to 0.43)	0.339
Medium	25	6.6 (2.1)	- 0.24 (- 1.19 to 0.73)	0.630
High	339	7.0 (2.5)	1.00 (reference)	-
Physician's age				
30-40	177	6.6 (2.5)	- 1.89 (- 2.83 to - 0.97)	< 0.001
41-50	165	6.9 (2.3)	- 0.38 (- 1.19 to 0.43)	0.358
≥ 51	58	7.8 (3.6)	1.00 (reference)	-
Physician's sex				
Men	306	6.6 (2.5)	- 1.78 (- 2.69 to - 0.85)	< 0.001
Women	94	7.9 (2.7)	1.00 (reference)	-
Type of specialist				
Internal medicine	118	7.0 (2.4)	- 1.53 (- 2.42 to - 0.63)	0.001
Orthopedic	98	6.8 (1.9)	- 2.02 (- 2.88 to - 1.17)	< 0.001
Surgery	60	5.1 (2.0)	- 2.18 (- 3.27 to - 1.08)	< 0.001
Cardiovascular	72	6.7 (2.6)	- 1.89 (- 2.84 to - 0.95)	< 0.001
Gynecology	52	9.1 (3.3)	1.00 (reference)	-

Discussion

The present study explored the potential factors that could affect the length of clinical consultation in specialty practice. Sheikh al-Rays Clinic in Tabriz, a public clinic facing a large number of patients from the northwest of Iran, is crowded with specialists. The findings of this study indicated that the average duration of clinical consultation was 6.9 minutes in Sheikh al-Raise clinic in Tabriz which is lower than of the time estimated in other studies conducted in other countries (5, 15).In studies conducted in various countries, it was found that average duration of clinical consultation was 34.3, 7 to 17.4, 14.5, 10.1, 11 minutes in China (5), Qatar(15), USA(16), Japan(17), and Turkey (18) respectively. However, the results of a meta-analysis showed that the mean visit time was 4.89 minutes in Iran (3).

Physician shortage, high workload of the physicians, long waiting lists, lack of proper guidelines, cultural-social conditions, disease types, personality types of the patients, and the structure of the health care system are among the factors which contribute to reduce consultation time in Iran (3). Along with visiting patients, some Iranian doctors have other managerial responsibilities and administrative duties(3). Evidence indicates that short consultation time has led to polypharmacy, overuse of antibiotics and poor communication with patients (2, 19).

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With regard to the associations of sex, the consultation time was longer in the female patients, in agreement with former studies in diabetes and GP practices (7, 14, 17, 20). This result can be due to two reasons. First of all, the duration of consultation for the female patients with female gynecologist was higher which increased the total consultation time. Secondly, culturally and psychologically, the female patients have more inclination to talk about their medical problems in comparison with their male counterparts.

Longer consultations positively correlate with higher levels of education. The results were consistent with those of former research, in which consultation time in well-educated patients was longer than those who didn't have any university degrees(7).

Our findings revealed that the consulting time among different specialist also varied significantly. Gynecologists were among the specialists who tended to visit their patients for a longer time in comparison with other specialists. The findings were in line with a research in Slovenia indicating that the physicians' visit length depends on the kind of disease and different health problems (7).

The effects of physician's gender and age on consultation length were also scrutinized. The findings were in line with previous researches in diabetes and GP practice, in which longer consultations were given by older and female physicians (17, 20). Female and older physicians had the inclination to have a positive reaction to patients' medical problems. Therefore, they tended to increase the consultation length (21, 22).One study came to the conclusion that female physicians try to cope with more psychological problems than their male counterparts, which could probably be one of the reasons in the current study in spite of the fact that the association could be multifaceted(23). It might be the case that older physicians have longer relationship with their patients and are more inclined to talk about psychological problems. In a study among six European countries which was conducted by Deveugele et al., it was revealed that physician's characteristics, such as gender and age, play a major role in the consultation length(14).

In our study, there are several limitations that need to be taken into consideration. Firstly, the study was conducted at one clinic in Tabriz. Therefore, factors identified in our study cannot be essentially generalized to other countries though these findings seemed rational. For the purpose of international comparisons in particular, variations in the structure of the healthcare system and the role of specialty physicians among different nations should be taken into account. Secondly, the majority of other factors may also impact the consultation time which was not investigated in the current research study. Considering physicians, it may include part-time working, ethnicity, and payment rate. Patient factors include: socio-economic group, first language, accompanied by another family member /or translator. Setting factors include: rural/urban, first or follow-up consultation, and planned booking rate. All these areas are absolutely in need of research.

Conclusion

Our findings showed that the consultation time in specialty practice in Iran is short. Also, five factors affecting the consultation length were identified. These factors can predict the consultation length: patient's sex, patient's education level, physician's age and sex and type of specialties. To the best of our knowledge, although this is the first study to analyze such factors, similar studies should be conducted in other settings to affirm the findings of the present study. It is hoped that these findings will be used to boost the efficacy of consultation, which in turn can eventually lead to the provision of optimum consultation time with individual patients.

Conflict of interests

None of the authors has conflict of interests.

Authors' contributions

Kakemam E designed research; Khodayari-Zarnaq R conducted research; Kakemam E analyzed data; Hajizadeh A and Kakemam E

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wrote the manuscript. Hajizadeh A and Khodavandi M collected data. All authors read and approved the final manuscript.

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