

## Research Article

## Open Access

# Calculating Consultation Time by Mobile Phone and Comparing to Perceiving Time in Primary Health Centers in Erbil City

Nagham Hani Jirjees Saoor

Department of Community Medicine, Canada

## ABSTRACT

**Background:** The consultation time reflects the level of responsiveness of the health care system. If the time is too short, the risk of misdiagnosis and mistreatment will increase. The consultation time in primary health care centers of Iraq is not measured by any formal institution Because of the lack of governmental monitoring on the services that are introduced by these primary health care centers.

**Methods:** The type of our study is cross sectional study; our research is conducted in three primary health centers in Erbil city. We chose 187 patient and the data collected by use questionnaires method and mobile to facilitate our work.

**Results:** Overall average consultation time was 2:28 min in primary health care centers of Erbil city, we found in PHCC1 was 2:58 min, PHCC2 0:58 min, PHCC3 4:02 minute Perceived time was more than actual consultation time and patient satisfactions were increase with more consultation time.

**Conclusion:** Consultation time in primary health care centers in Erbil city is extremely short in spite of the high percent of patient's satisfaction.

## \*Corresponding author

Nagham Hani Jirjees Saoor, Department of Community Medicine, Canada. E-mail: naghamhani22@yahoo.com

**Received:** November 10, 2022; **Accepted:** November 22, 2022; **Published:** November 28, 2022

## Introduction

The time spent by the doctor with his or her patient to explain and manage his complain to diagnose or prescribe a treatment [1]. Length of consultation time is very important to reach a better diagnosis and treatment. Most diagnosis can be reached [2,3].

Length of consultation time affected by many factors such as the characteristics of the doctors and the patients. The characteristics of doctors that have the most effect on consultation length are doctor's age, sex, and attitude and the size of the doctor's list of patients. The patient's age and social class are determinants of consultation length—the older the patient or the higher their social class, the longer the consultation [4].

Doctors spend more time with patients who have new problems than those with already discussed problems. Consultations about psychosomatic and behavioral problems are longer than those for other problems [5]. Doctors are less likely to prescribe during long consultations [4].

Lack of time is a frequently expressed patient concern, but actual measured consultation length is often not associated with patient satisfaction. Consultations where patients are more dissatisfied appear to the patients to have lasted a shorter length of time. Patient concerns about time may be as much about quality time as about actual time [5].

The mean length of consultation for all consultations in European countries was 10.7 minutes and in neighboring countries was less

than 5 minutes [4-6].

Up to now no study has been conducted in Iraq to calculate the length of consultation time but anecdotal evidence shows that it is very short. Because services are over utilized, doctors are forced to see a large number of patients per hour [7]. At health centers, most doctors work for 3 hours (9.00-12.00) during which they could see between 30-100 patients. As a result, the consultation time is 2-6 minutes [8].

The consultation time reflects the level of responsiveness of the health care system. If the time is too short, the risk of misdiagnosis and mistreatment will increase [7].

In the IHSS (Iraq Health System Strengthening) survey which covered a sample of PHCs staffed by doctors, the average time spent by doctors with patients was 7 minutes and the time spent in suburban PHCs was shorter (5.7 minutes). Compared to industrialized countries, the patient-doctor encounter is too short - only about one third of the time in the United States and one half of the time in the United Kingdom [7].

Patients' dissatisfaction with consultation length can be managed by making consultations longer. Alternatively, it could also be managed by changing how a given time is spent. In particular, a doctor who listens and tries to understand their patient may make the patient feel more satisfied with the consultation length and subsequently more motivated to follow any recommendations for change [9].

The aim of our study was to evaluate patient satisfaction with consultation time and estimation the quality of primary health care center [10,11].

### Objectives

1. Calculating actual consultation time.
2. Comparing between perceiving time and actual consultation time.
3. Estimation of patient satisfactions with consultation time.

Consultation is consult a service type provided by a physician whose opinion or advice regarding evaluation and/or management of a specific problem requested by the patient or another physician and consultation time is the time that the patient spent with doctor.

Doctors' behaviors in the consultation are most strongly associated with perceived medical need of the patient, which strongly confounds other predictors. However, a significant minority of examining, prescribing, and referral, and almost half of investigations, is still thought by the doctor to be slightly needed or not needed at all, and perceived patient pressure is a strong independent predictor of all doctor behaviors. To limit unnecessary resource use and pathogenesis, when management decisions are not thought to be medically needed, doctors need to directly ask patients about their expectations.

The initial aims of any first consultation are to understand the patient's own perception of their problem and to start or complete the process of diagnosis and this requires knowledge of disease and its patterns of presentation, and an ability to interpret a patient's symptoms and signs. During consultation time appropriate skills are needed to elicit the symptoms from the patient's description and conversation, and the signs by observation and physical examination. Difficulties posed by assessing the patients themselves, or by the variety of cultural and ethnic backgrounds found in modern life, must be accepted and factored into the interpretation of the data acquired during the consultation. This requires not only experience and considerable knowledge of people in general, but also the skill and interest in people to strike up a relationship with a range of very different individuals.

### Methods

#### Study Design

The type of the study is cross section study.

#### Setting

The research is conducted in three primary health centers in Erbil city

#### Time

The first visit was on Saturday 6th October, 2012, the second visit was on Tuesday 9th October, 2012 and the third visit was on Saturday 20th October, 2012.

#### Sampling

The plan is to select 200 patient in the study. I chose sampling by selecting three primary health centers in three different areas in Erbil city, one of them in public and crowded area, the other one in public area but not crowded as previous one and third one is new and have special health system and care measuring.

#### Data Collection

Before I started the work at primary health care center I took permission from directorate health of Erbil then I started the work at 8:00 am in primary health center and finished at 12:00 pm, there

were five volunteers, I divided them as following

1. One of them at reception who give number to each patient enter primary health center and calculate time of entering of patient by sending message via mobile.
2. In the first and third PHC visit, two of volunteers stay in front of two doctors room to calculate time spent of each patient with doctor by determine the time of patient get in and out of doctors room by sending two message one at entrance and other one at exist but in second visit the two student stay inside doctors room because it is more crowded than the first and third one PHC.
3. The other two volunteers stay near the gate of primary health center to full questionnaires by asking patient verbally by local accent (Kurdish language) and also calculate time of patients' discharging from primary health center also by sending a message.

#### The Data Collected by use

1. Questionnaires method and I tried it with patients in primary health center before started the study.
2. Mobile to facilitate our work and also we tested it between ourselves before began our study. We talked to patient gently and explain to them the research and ask their permission before full questionnaires before they go out from the primary health center.

#### Socioeconomic Scoring (SES)

1-giving scores for each state as the based on the following measurements:

1. house ownership: owner=10 rent=0
2. education: illiterate=0 primary=1 secondary=2
3. Preparatory=3 Bsc. = 4
4. job: housewife=1 employer=3
5. Student=1 shopkeeper=3
6. transportation method: walking=0 bus=2 car=4
7. no. of cars: for each one car we gave 2 score

2-then we collect each patient scores together then found that the highest score was 25 and the minimum one was 1score.

3-subclassifying for each 5scores a status

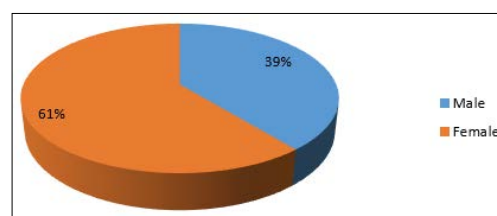
1. e.0-5=low SES status
- 6-10= low SES status
- 11-15=medium SES status
- 16-20=high SES status
- 21-25=very high SES status

#### Ethical Consideration

We went to directorate of health in Erbil to ask for their permission to visit the primary health care centers. We also asked for patients' permission to fill the questionnaire.

#### Results

The data were analyzed to describe patient's socio-demographic characteristics, aspects of consultation time, perceiving time and overall satisfactions the sample size of our study consists of 187 patients (female 112 more than male 73) as seen in Figure (1).



**Figure 1:** Gender distribution of the Sample

A maximum total of group age between (0-5) years as seen in Figure (2):

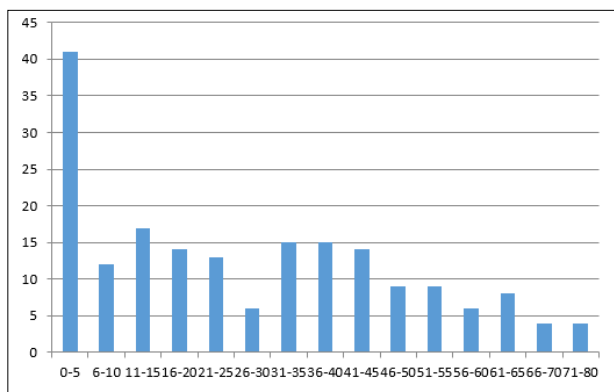


Figure 2: Age group distribution

The majority of patients were finished primary school only as shown in Figure (3)

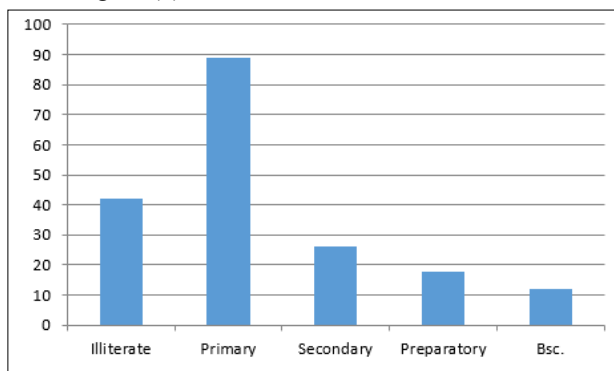


Figure 3: Education levels

The majority of patients who visit the primary health care center were housewife and other jobs which include students as shown in Figure (4)

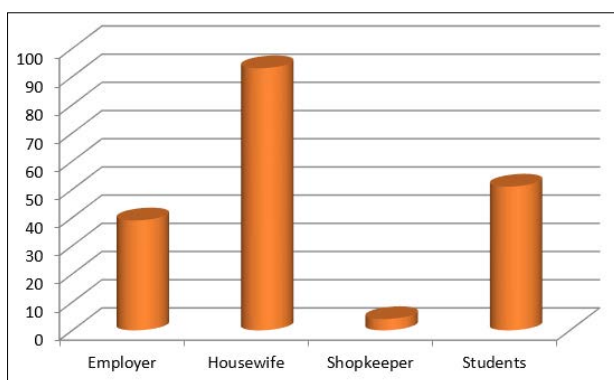


Figure 4: Jobs

Regarding the socio-economic state almost patients were at the medium level (for more details well described in method part) as shown in Figure (5):

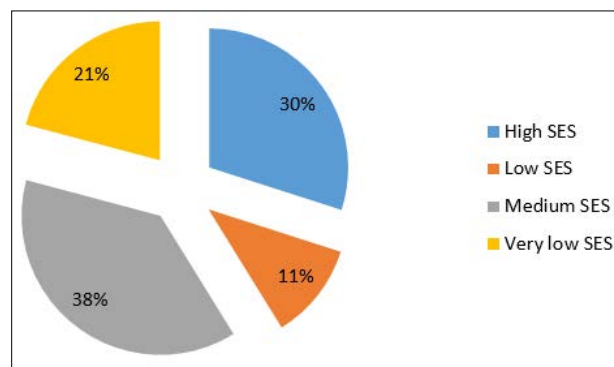


Figure 5: Socioeconomic Status

**About the Consultation Time we went to Three Primary Health Care Centers Each One has Different Values of Consultation Time, and as the following**

1. At the primary health center one the majority number of consultation time were more than one minute which was 2.58 min. because the number of admitted patients to these primary health center are somehow matching with the number of doctors and which is all most patients are satisfied.
2. At the primary health center two the majority number of consultation time are less than one minute which was 0.58 min. Because the huge number of patients admitted to these primary health center more than number of doctors, so not all patients satisfied.
3. At the third primary health center the majority number of consultation time between the range ( $\geq 1 - \geq 5$ ) minute which was 4.2 min. because the smallest number of patients admitted to that primary health center which is matching with number of doctors and all most patients were well satisfied and the average consultation time overall in these 3 primary health centers were 2.28 min. the different values between average consultation between the 3 HC was very different and statistically significant (p value < 0.001 and t value = 10,000,000) as shown in table (1)

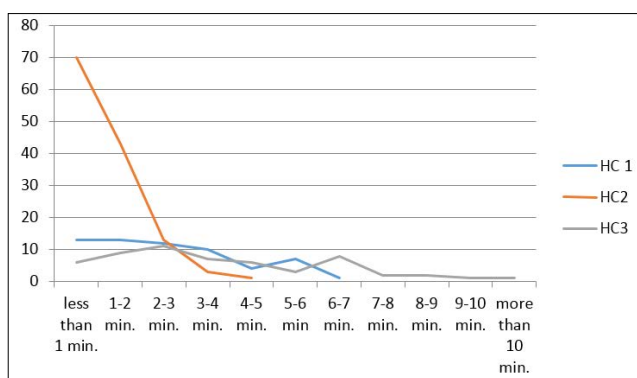
Table 1: Consultation Time in HC1, HC2, HC3

Consultation Time	HC 1 No(%)	HC2 No(%)	HC3 No(%)	Grand Total No(%)
< 1 min.	15(21.7)	72(54.5)	7(12.2)	94
1-2 min.	15(21.7)	43(32.5)	9(15.7)	67
2-3 min.	14(20.2)	13(9.8)	11(19.2)	38
3-4 min.	12(17.3)	3(2.2)	7(12.2)	22
4-5 min.	4(5.7)	1(0.7)	6(10.5)	11
5-6 min	7(10.1)		3(5.2)	10
6-7 min.	1(1.4)		8(14)	9
7-8 min.			2(3.5)	2
8-9 min.	1(1.4)		2(3.5)	3
9-10 min.			1(1.7)	1
> 10 min.			1(1.7)	1
Grand Total	69	132	57	258

But in general when we calculate the consultation time of these three primary health care centers together we found that as shown in Table (2) and Figure (6):

**Table 2: Consultation Time in General**

Consultation time	PHC No( %)
less than 1 min.	94(36.4)
1-2 min.	67(25.9)
2-3 min.	38(14.7)
3-4 min.	22(8.5)
4-5 min.	11(4.2)
5-6 min	10(3.8)
6-7 min.	9(3.4)
7-8 min.	2(0.7)
8-9 min.	3(1.1)
9-10 min.	1(0.3)
more than 10 min.	1(0.3)
Grand Total	258



**Figure 6: Consultation Time**

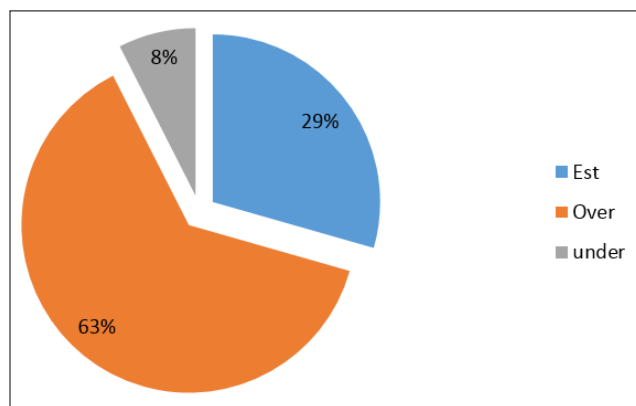
This different values depend on the number of doctors in primary health centers, the number of population lived nearby to that primary health center also effect and depend the type of technical use for investigation and modern instruments and laboratories. See Table (2)

The perceiving time is nearly to calculating time, but constantly the perceiving time more than the real time because it depends

on many factors such as education, doctor-patient relationship and age, or due to using new technology(by mobile) which was very accurate in calculating consultations time. See in Table (3) and Figure (7)

**Table 3: Patients' Estimation**

Patients' estimation	Count of patient No( %)
Estimated	55(29.4)
Overestimated	118(63.1)
underestimated	14(7.4)
Grand Total	187



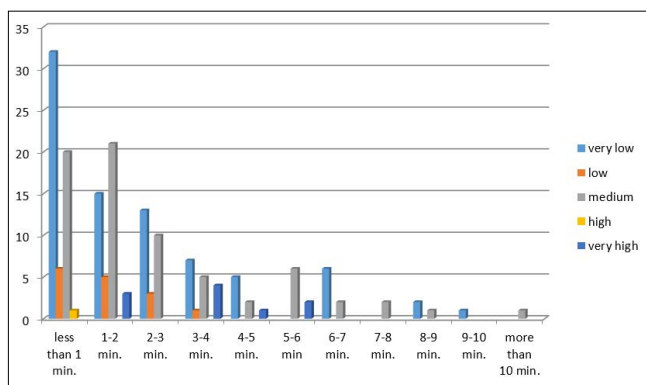
**Figure 7: Patients' Estimation of Consultation Time**

The study, it is important to solve patients problems and to know the causes of their dissatisfactions according to time spent with doctor if is sufficient to manage the patients complaint or not, and doctors way to treat them if he listen and clarify their problems and if he did examination them, and to support patients, also giving him the confidence for doctor treatment. All respect, sanitation of place and needs should be advanced to patients.

Noticeable increase in level of satisfactions with longer consultation time, few patients satisfied with short time, and overall patient's satisfaction depended on educational state, age, gender and socio-economic state of patients. See in Table (4) and Figure (8)

**Table 4: Patients' Satisfaction**

Patients' Satisfaction	Very low	Low	Medium	High	Very high	Grand Total
less than 1 min.	34	6	22	1		63
1-2 min.	17	5	23		4	49
2-3 min.	13	3	11			27
3-4 min.	7	1	5		4	17
4-5 min.	5		2		1	8
5-6 min			6		2	8
6-7 min.	6		2			8
7-8 min.			2			2
8-9 min.	2		1			3
9-10 min.	1					1
more than 10 min.			1			1
Grand Total	85	15	75	1	10	187



**Figure 8:** Patients' Satisfaction According to the Consultation Time

### Discussion

Successful health system in any country depends on the provision of high quality services by a health workforce that is sufficient in number, appropriately trained and equitably distributed [8]. People, who choose primary health care in Erbil for many reasons like location, cost of primary health care, relationship to other doctors and consultation time.

In this research in general I found that the number of patient who visit PHC were females that's because the most of women are housewives, pregnant or came with their children while the males in the work at morning, About education I found that high percent of them were either illiterate or only finished primary school because the areas I selected are public and poor, also I found that high number of patients there age group was between (0-5) years and that's belong to the season I do this research, bad hygiene, this age group need more health support because less immune and more susceptible to have diseases.

The data showed that the consultation time was between (0:08-11:01) minute, so the mean actual consultation time was about 2:28 minute which was too low for all consultations in European countries 10.7 minutes. Belgium and Switzerland had the longest consultation times, Germany and Spain had the shortest consultation times, and consultation times for the Netherlands and the United Kingdom were in between [4].

In Saudi Arabia the consultation time that is either too short (< 5 minutes) or too long (> 20 minutes) were associated with dissatisfaction [6].

And also they were 16.5 minutes in the US and with 15.0 minutes in New Zealand and 14.9 minutes in Australia, Visit lengths were longer in the US for all age and sex groups, Despite differences in the supply and financing across countries, many aspects of the clinical practice of primary care physicians are remarkably similar in Australia, New Zealand, and the US. There is a high level of agreement in primary care across countries in the number of problems that are managed per visit, the types of problems that are managed, and the duration of visits [10].

### In Spite of that our Patients Expressed High Level of Satisfactions and that's belonging to Many Factors such as:

1. Education: The illiterate patients satisfied more than educational patients while the educational patients need to have more time with their doctors for explaining their problems, examination and to know the way of treatment.

2. Economic state: In our study we saw the poor patient tend to be more satisfied than the rich patients.
3. Prime cost: In primary health care centers where health serves, lab investigations and
4. Medication bills were cheap and any patient can pay it.

Also Regarding the satisfaction as we say the high percent of patients were illiterate or only finished primary school so they satisfied because they lack of their familiarization with health care concepts and ideas about it.

In general the highest percentage of consultation time was between (0.08-2) minute and for more specific this percentage was more in the second primary health center because of more crowded public area and less number of doctors compared to the numbers of patients, and the percentage between (4-7) minute was more in the third health center compared to the other two because of new health system and more doctors according to the patients.

The results showed a significant difference between the perceived consultation times minute and mean actual consultation time (2:28) minute. The mean perceived time was longer than mean actual this refers to overestimation of consultation time expressed by most patient, and this due to inaccuracy of patients for time, and those who got benefit from their visit and get required information that wanted from the doctors and also patient approximate the time which also make the perceive time more than the actual time.

Other thing patients might think that we were a part of primary health center staff so this led them to satisfied from time and not say the actual time.

This is consistent with the hypothesis stating that patients perceptions of consultation length are influenced not just by actual consultation length, but by other aspects of their experience of the consultations, so that consultations that they experience has more positive are perceived to be longer than they actually are [5].

In our study we found that those who visit the doctor for the first time take less time than who visited it previously this may be due to better experience of the patient with the staff that works in that PHC so they choice better doctor which give more attentions and consultation time, and this inverse with other study which have been done in Ohio 1994 that showed those who had previous visit takes less time because they already have file, the doctor know their previous history and also they knew the structure of the building [9].

Also the personality of the doctor and how he deals with patients has great effect on consultation time and patients satisfaction.

### Limitations

1. We only five volunteers and the study required more staff to be done.
2. I have only a limited time and it required more time.
3. The study done in only three primary health centers so it needs more to be more accurate.
4. We faced a difficulty in taking permission from the college and the directorate of health.

### Strength

1. The research evaluates the staff of primary health centers regarding patients health through the time that patient spent with doctor and within primary health centers.

2. We use innovative method in calculating consultation time which is mobile phone method that was very accurate in calculating consultation time.
3. There is no research made in this subject in primary health centers in Iraq.
4. This research effect on population health system and affecting on morbidity and mortality rate.

### Conclusion

1. I found that consultation time of PHC in Erbil city was extremely short.
2. Patients Perceived time more than the actual consultation time.
3. Patients show satisfaction depending on perceiving time.
4. Patient's satisfaction depending on (age, gender, education, socio-economic....).

### Recommendations

1. Farther researches should be done to fill in gaps of our research which is taking of more than one PHC, more data along longer period of time.
2. Using of new systems for follow up of patient such as using computer and mobile systems which save patients data.
3. The patient should have time with doctor at least 10 minute with doctor.
4. Health education for community members in order to activate the goal of rational drug use.
5. Increasing the development of PHC and better progression of each health service and health equipment and requirements are:-
  - Availability of required specialties at PHC.
  - Concerning and improvement of laboratories of PHC to minimized the probability of false-negative errors.
  - Increasing number of doctors, nurses, laboratory workers may help to decrease patients waiting time and center crowded.
  - Improvement and re-initiation of home visit programs.

### Acknowledgments

All the praises and thanks to God, the most compassionate and most merciful who gave us the knowledge, courage and patience to accomplish this research and we would like to express our deep appreciation and gratitude to our supervisor Dr. Wali Omer for his helping, support and being with his students in any time we want.

Special thanks to the head of the community department Dr. Khalis Belal and all community department staff Special thanks to the Health Directorate of Erbil and all primary health centers we visited them for their permission and support. Thanks a lot for all the people who helped us in completing this research and to all the contributors of questionnaire survey in answering our queries that are gratefully acknowledged.

### References

1. Segen JC (2002) McGraw-Hill concise dictionary of modern medicine. The McGraw-Hill Companies, Inc, New York [https://www.scirp.org/\(S\(351jmbntvnsjt1aadkposzje\)\)/reference/ReferencesPapers.aspx?ReferenceID=869426](https://www.scirp.org/(S(351jmbntvnsjt1aadkposzje))/reference/ReferencesPapers.aspx?ReferenceID=869426)
2. Little Paul, Martina Dorward, Greg Warner, Katharine Stephens, Jane Senior, et al. (2004) "Importance of patient pressure and perceived pressure and perceived medical need for investigations, referral, and prescribing in primary care: nested observational study." *Bmj* 328: 444.
3. Hutchinson Sally A, Holly Skodol (1991) "Grounded Theory The Method" <https://journals.sagepub.com/doi/10.1177/1049>

- 73239100100206.
4. Myriam Deveugele, Anselm Derese, Atie van den Brink-Muinen, Jozien Bensing, Jan De Maeseneer (2002) Consultation length in general practice: cross sectional study in six European countries. *BMJ* 325: 472.
5. John cape (2002) Consultation length, patient-estimated consultation length, and satisfaction with consultation. *British Journal of general practice Br J Gen Pract* 52: 1004-1006.
6. Al-Faris E, Khoja T, Falouda M, Saeed A (1996) Patient's satisfaction with accessibility and services offered in Riyadh health centers. *Saudi Med J* 17: 11-17.
7. Ala'din Alwan (2004) FFPH; Minister of Health. Health in Iraq. 2nd ed. Place of publication: Iraq.
8. El-Jardali, Fadi, Diana Jamal, Ahmad Abdallah, Kassem Kassak (2007) "Human resources for health planning and management in the Eastern Mediterranean region: facts, gaps and forward thinking for research and policy." *Human Resources for Health* 1: 9.
9. David A Gross, Stephan J Zyazanski, Elaine A Borawski, Randall D Cebul, Kurt C Stange (1998) Patient satisfaction with time spent with their physician. *Journal of family practice* 47: 133-137.
10. Bindman Andrew B, Christopher B Forrest, Helena Britt, Peter Crampton, Azeem Majeed (2007) "Diagnostic scope of and exposure to primary care physicians in Australia, New Zealand, and the United States: cross sectional analysis of results from three national surveys." *Bmj* 334: 1261.
11. Ogden Jane, Kheelna Bavalia, Matthew Bull, Stuart Frankum, Chris Goldie, et al. (2004) "I want more time with my doctor": a quantitative study of time and the consultation." *Family practice* 21: 479-483.

**Copyright:** ©2022 Nagham Hani Jirjees Saor. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.