International Journal of Multidisciplinary and Current Research ISSN: 2321-3124
Research Article Available at: http://ijmcr.com

A comparative study to evaluate Primary Health Care centers with Family and non-family Medicine doctors in Basra

Riyadh A. Hussein[1], Rajaa A. Mahmoud[2*] and Nihad Q. AL-Hamadi[3]

[1]University of Basra, College of Medicine, Department of Community Medicine, Iraq
[2]Basra Health Directorate, Training and Human Development Unit, Iraq
[3]Basra Health Directorate, Quality Management Unit, Iraq

Received 12 Oct 2017, Accepted 15 Dec 2017, Available online 28 Dec 2017, **Vol.5 (Nov/Dec 2017 issue)**

Abstract

Introduction: *In recent years, family medicine has been applied in primary health care centers and a number of family doctors have been working in these centers. However, the number of family doctors is not enough to cover all the centers and the rest of the experience is limited to specific centers in Iraq as well as in the province of Basra*
Aim of the study: *it's to compare between primary health care centers operated by the family medicine system and other non-family medicine centers through evaluating the different services provided by both types of the centers.*
Methodology: *the study is a cross sectional study conducted in 24 primary health care centers in Basra governorate during May 2017. A total of 12 primary health care centers in Basra with at least one family medicine doctor were included in the study in addition to another 12 primary health care centers directed by a general practitioner and had no family medicine doctor.*
Results: *The study found a big difference in the load of primary health care centers attendees per primary health care center and per doctor between both types of the centers. The majority of the non family medicine centers were found by the study to be badly documenting the symptoms, examination notes of the patients with non communicable diseases and the investigations done for the patients. In addition, both types of the primary health care centers were found to be bad in using the available protocols of treatments.*
Conclusions and recommendations*: The family medicine centers are found by the present study to be not fulfilling the standard criteria of Iraqi Ministry of Health in comparing the services provided with the non family medicine ones. Therefore, a program for developing the capacity of family medicine and primary health care doctors is recommended by the study which includes strengthening of the leadership and research strategies in Basra. In addition, focusing on strengthening of the current weaknesses found by the study should be included.*

Keywords: *Family Medicine, Primary Health Care, Basra*

Introduction

The Primary Health care Centre is the basic structural and functional unit of the public health services in developing countries. Primary health care centers were established to provide accessible, affordable and available primary health care to people, in accordance with the Alma Ata Declaration of 1978 by the member nations of the World Health Organization(1).

In Iraq (at all governorates), primary health care centers form a basic part of the health care system, is consistent with the essential elements of primary health care outlined in the Alma-Ata declaration.

The adopted primary health care approach (especially its maternal care, emergency obstetric care, family planning, immunization, nutritional improvement and the integrated approach of child management) will result in substantial reduction of morbidity and mortality among women of child-bearing age and children that altogether represent a large disadvantaged segment of the Iraqi population(2).

Problems facing primary care system in Iraq include inappropriate health service delivery (mainly this is expressed through irrational use of health services, irrational treatment, poor referral system, poor infrastructure and poor hygiene), health manpower challenges (high number of specialists, uneven distribution of the health manpower, rapid turnover, lack of training and educational opportunities and inconsistencies in the salary system), shortage in resources (shortage and low quality of medical supplies and shortage in financing), poor information technology and poor leadership/governance(3)

*Corresponding author's ORCID ID: 0000-0002-6814-5463
DOI: https://doi.org/10.14741/ijmcr.v.5.6.42

The greatest highlighting was placed on poor institute of health services delivery, particularly the irrational use of health services and the related overcrowding and overload on primary care providers and health facilities. Suggestions for improving the system included application of a family medicine approach and ensuring effective planning and monitoring[4].

Doctors working in primary health care centers are mainly general practitioners. General practitioners in Iraq usually have not received any additional formal training after graduation from medical school, apart from a two year clinical internship and one year working in a remote primary health care centre or a hospital. With the increasing number of specialized doctors in Iraq in recent years and the limited number of positions in hospitals and specialized centers, more and more specialists are assigned to work in primary health care centers [5].

In recent years, family medicine has been applied in primary health care centers and a number of family doctors have been working in these centers, However, the number of family doctors is not enough to cover all the centers and the rest of the experience is limited to specific centers in Iraq as well as in the province of Basra [6]

Family medicine is a relatively new area of specialization which evolved in the 1960s in the USA and UK with systematic training programs on equivalence with the MRCP and FRCS fellowships. The general practitioner is the key provider in National Health System in the UK. In Cuba, the family physician is the chief provider in their comprehensive health plan. Family practice is also active in South Korea, Malaysia and Singapore[7].

In the Arab world, family medicine specialty training started in 1979 with the establishment of a department of family medicine at the American University of Beirut. In the 1980s and 1990s, several family medicine training programs emerged in several Arab countries, including Bahrain, Saudi Arabia, Jordan, Egypt, Oman, and the United Arab Emirates. According to a study published in 2007, there were approximately 20 family medicine training programs in the Arab world that graduate an average of 150 family physicians annually [8].

In trying to explain the elements composing family medicine, we conclude that it's the medical specialty which provides continuing and comprehensive health care, for the individual and the family. Family physicians have distinctive approach, skills, and knowledge which qualify them to provide enduring and comprehensive medical care and preventive services to each member of the family regardless of sex, age or type of problem[9].

In the second half of the 20th century, family medicine developed significantly, starting with the exploration of the different scope of the patient-centered approach, developing the bio-psycho-socio-ecological model, training appropriate consultation-models, development of Evidence based medicine and serving patients and populations throughout their lives. Increasingly, using the family physicians became underpinned with results from both quantitative and qualitative research, strengthening the evidence base of the discipline[10].

According to recent studies, the Arab world needs more than 160,000 family physician specialists. However, what is available is much less than that number. The majority of graduates in the Arab world work in clinical practice, with the majority of specialized care over primary care health services**[11].**

Iraq universities started the post graduate family medicine program In 1990s (Arabian and Iraqi Family Medicine Fellowship Program). All family physicians begin their training by graduating from medical college and after at least two years of their graduation, the next step is to complete four years residency in family medicine[12].
Iraqi Ministry of Health goals regarding family medicine rules in community include[12]:

- To ensure continuity of care, and provide an integrated service in the health center with comprehensive care.
- Chronic disease patients will be taken care of by qualified and well trained doctors.
- Maintaining good relationship with the patients and their families.
- Reducing unnecessary visits to the primary health care centers.
- Promote health education and awareness to the community.

Aims of the study

Comparison between primary health care centers operated by the family medicine system and other non-family medicine centers through:

- Evaluating the availability of facility needs at the primary health care centers (according to Iraqi Ministry of Health standards or not) for both types of centers (with the family medicine doctors versus the general practitioners).
- Estimating the daily work load in both types of primary health care centers (doctor/family and doctor/population).
- Estimating the coverage rate of antenatal care and immunization
- Evaluating the registration in the patient's medical records in addition to the filing record system of the non communicable diseases.

Methodology

Official agreement: Prior to data collection an official written permission was obtained from Basra Health directorate and the general Director of the scientific committee of the researches in Basra.

Type of study: it's a cross sectional study conducted in 24 primary health care centers in Basra governorate during May 2017.

Sample size

All of the primary health care centers in Basra with at least one family medicine doctor were included in the study. Total number of primary health care centers with this criterion is 12. Another 12 primary health care centers directed by a general practitioner and had no family medicine doctor was also included within the same geographical area of the first 12 family medicine centers.

Study tools

Special check lists were prepared for each part of study. These lists were designed for the following aims:

- Evaluating immunization coverage rate of the last year (2016) for BCG, penta2 vaccination coverage, 3rd dose coverage of polio and measles vaccines.
- Evaluating the annual coverage rate of antenatal care (4thvisit the) during (2016), postnatal care (at least one visit was included), infant and child care (4th visit).
- Evaluating the filing system of non-communicable diseases including registration of patient's examination, investigation and follow up of his disease progress.
- Evaluating completeness of the patient's medical record, full documentation of his/her name ,age and sex, diagnosis whether according to International Classification of Diseases number 10 , and weather the case was managed according to available management protocols or not.
- Evaluating the availability of facility needs at the Primary Health Care Centers (whether they are according to Iraqi Ministry of Health standards or not)
- Check list to evaluate the registration at family filing system of the family medicine system (only for family medicine primary health care centers).

Data collection and analysis

Five well trained teams, each team consist of 3 members, visited the selected study locations. Data were collected from patients' medical records and files, primary health care center statistics, and observation for facilities available at the primary health care centers. All data were analyzed by Excel and SPSS.

Results

Table 1 shows that only (6) which is the half of family centers included at the study are managed by a family medicine doctor, the others managed by a general practitioners while the non-family centers are managed by a general practitioner (10 primary health care centers) with two centers by non-medical staff.

The study found that doctors whose working in a family medicine center aren't all family medicine doctors. The highest percentage (80%) are worked at Aljubela center while only 33% of the doctors in Alzahra, Almuhandseen and Almuteiaha are family medicine ones.

Table 1: Type of doctors working at the primary health centers

Families medicine centers	Total doctors at the PHC	Family doctor		PHC's manager
		No.	%	
Basra training center	5	3	60	General practitioner
Alrazi	4	2	50	General practitioner
Mohamed Aldura	5	3	60	General practitioner
Alrebat	4	3	75	Family medicine
IntefathatAlaqsa	3	2	67	Family medicine
Aljubela	5	4	80	Family medicine
Azaldeen	5	3	60	Family medicine
Aljunina	3	2	67	Family medicine
Alzahra	3	1	33	General practitioner
Alburatia	3	2	67	Family medicine
Almuhandseen	3	1	33	General practitioner
Almutiaha	3	1	33	General practitioner
Non family medicine centers				
Alkawther	4			General practitioner
Alkaleej	3			Non medical staff
Alashar	2			General practitioner
Alasmaee	4			Non medical staff
AlemamAlhassen	4			General practitioner
Almushraq	3			General practitioner
Alseef	4			General practitioner
Almuafkia	3			General practitioner
Aljumhuria	3			General practitioner
Alqaeem	3			General practitioner
Aljehad	2			General practitioner
Alqebla	3			General practitioner

The study confirmed that there is a difference in population within the geographical area of primary health care centers where the range of population is from (5377-38831) at the family medicine centers and (13400-47792) in the non family medicine ones .This was also reflected on the numbers of population per doctors which ranged from (1075-12944) for family medicine centers and (5480-15931) for non-family medicine centers. (Table 2)

Table 2: Population per doctor for each primary health care center

PHC center name	Population	Total No. of doctors	Population per doctor	Number of Families per doctor
Family medicine PHC centers				
Basra training center	5377	5	1075	179
Alrazi	10455	4	2614	436
Mohamed Aldura	17300	5	3460	577
Alrebat	17536	4	4384	731
IntefathatAlaqsa	14043	3	4681	780
Aljubela	24112	5	4822	804
Azaldeen	27619	5	5524	921
Aljunina	32000	3	6400	1778
Alzahra	19416	3	6472	1079
Alburatia	23869	3	7956	1326
Almuhandseen	27481	3	9160	1527
Almutiaha	38831	3	12944	2157
	Range: 5377 - 38831	Range: 3-5	Range:1075-12944	Range: 179-2157
Non family medicine PHC centers				
lAlkawther	21920	4	5480	913
Alkaleej	19877	3	6626	1104
Alashar	13400	2	6700	1117
Alasmaee	30100	4	7525	1254
AlemamAlhassen	32880	4	8220	1370
Almushraq	29883	3	9961	1660
Alseef	40692	4	10173	1696
Almuafkia	31974	3	10658	1776
Aljumhuria	39455	3	13152	2192
Alqaeem	41818	3	13939	2323
Aljehad	28087	2	14044	2341
Alqebla	47792	3	15931	2655
	Range: 21920-47792	Range: 2-4	Range: 5480-15931	Range: 913-2655

The present study revealed that there is a big difference in the load of primary health care center's attendees ' per primary health care center and per doctor. The range of attendees per doctor for the family medicine doctors is (5-63) compared to (13-50) for the non-family medicine centers.

Table 3: Number of attendees to primary health care centers per day

PHC center name	No. of patients seen by doctors	No. of children attended for vaccines	No. of pregnant women attended the PHC	Total Attendees	Attendees per doctors
Family Medicine centers					
Basra training center	16	5	3	24	5
Alrazi	15	19	5	39	10
Mohamed Aldura	35	15	10	60	12
Alrebat	50	20	10	80	20
IntefathatAlaqsa	58	28	14	100	33
Aljubela	40	29	10	79	16
Azaldeen	100	35	10	145	29
Aljunina	30	21	9	60	12
Alzahra	65	19	21	105	35
Alburatia	50	22	7	79	26
Almuhandseen	50	30	15	95	32
Almutiaha	100	70	20	190	63
Average	**51**	**26**	**11**	**88**	**24**
Non family medicine centers					
lAlkawther	28	18	5	51	13
Alkaleej	52	16	6	74	25
Alashar	22	19	4	45	15
Alasmaee	50	25	20	95	32
AlemamAlhassen	40	50	0	90	23
Almushraq	60	48	14	122	31
Alseef	76	46	12	134	34
Almuafkia	75	0	10	85	43
Aljumhuria	58	37	16	111	37
Alqaeem	60	33	12	105	35
Aljehad	28	29	8	65	22
Alqebla	50	30	20	100	50
Average	**50**	**29**	**11**	**90**	**30**

Table 4 a: Details of Availability of facilities at both types of centers

		No. of family medicine centers N=12						No. of non-family medicine centers, N =12					
		Available		Not enough		Not available		Available		Not enough		Not available	
		No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Doctor's room	Desks	12	100	0		0		11	91.7	1	8.3	0	
	Couch	10	83.3	2		0		11	91.7	1	8.3	0	
	Sphygmomanometer	12	100	0		0		11	91.7	0		1	8.3
	Stethoscope	12	100	0		0		12	100	0		0	
	Thermometer	12	100	0		0		12	100	0		0	
	Torch	12	100	0		0		12	100	0		0	
	Ophthalmoscope	3	25	5	41.7	4	30	5	41.7	1	8.3	6	50
	auroscope	3	25	6	50	3	25	3	25	3	25	6	50
	Paravan	6	50	5	41.7	1		7	58	5	41.7	1	8.3
	Uniform	9	75	2	17.6	1		10	83.3	2	17.6	0	
Average		9	75	2	17.6	1		8	66.7	2	17.6	2	17.6
	Items	Available		Not enough		Not available		Available		Not enough			
		No.	%	No.	%	No	%	No.	%	No.		%	
Nursing	Tables, chairs	12	100	0		0		1	8.3	0			

room	Suckers	1	8.3	1	8.3	10	83.3	0		12	100
	capote	11	91	1	8.3	0		0		12	100
	Cabbage container	11	91	0		1	8.3	2	17.6	0	
	Isolation of	11	91	0		1	8.3	0		12	100
	nebulizer	11	91	1	8.3	0		4	33	0	
	ECG	1	8.3	1	8.3	10	83.3	0		12	100
	Oxygen	0		0		12	100	0		12	100
	DC shock	0		0		12	100	0		12	
Average of nursing room		6	50	1	8.3	5	41.7	1	8.3	8	66.7
Antenatal room	Sonic aid	10	83.3	2	17.6	0		2	17.6	4	33.3
	Exam. set	7	58.4	2	17.6	3	25	0		5	41.7
	IUL set	4	33.3	0		8	66.7	0		10	83.3
Average of antenatal room		7	58.4	1	8.3	5	41.7	1	8.3	6	50
diagnostic aid	X rays	2	17.6	2	17.6	8		0		12	100
	Ultra sound	3	25	3	25	6	50	1	8.3	9	75
	Lab inv	10	83.3	2	17.6	0		3	25	0	
	CBP	0		0		12	100	0		12	100
	Blood film	0		0		12	100	0		0	
	L F test	1	8.3	0		11	91	0		11	91
	Renal function test	1	8.3	0		11		0		11	91
	Liver FT	3	25	1	8.3	9	75	1	8.3	7	
Average		2	17.6	1	8.3	9	75	1	8.3	9	75

Table 4 (b): Availability of facilities at both types of centers (Summary)

	Number of family PHC, N=12							Number of non-family PHC, N =12					
	Available		Not enough		Not available			Available		Not enough		Not available	
	No.	%	No	%	No	%		No	%	No	%	No.	%
Doctor's room items	9	75	2	17.6	1			8	66.7	2	17.6	2	17.6
Nursing room instruments	6	50	1	8.3	5	41.7		3	25	1	8.3	8	66.7
Antenatal room items	7	58.4	1	8.3	5	41.7		5	41.7	1	8.3	6	50
Diagnostic aids	2	17.6	1	8.3	9	75		2	17.6	1	8.3	9	75

Table 4 (a: detailed table, b: summary table) shows that only (75%, 66.7%) of doctors rooms are available in family and non-family centers, while half of need in nursing room at family centers and quarter of need in non-family center are available in nursing room. The antenatal room about half of need is available in both type of centers (58.4%, 41.7% respectively). The diagnostic aids are similar on both type of primary health care centers and less than quarter (17.6% are available).

About half of the study primary health care centers (58%) had a screening of the families in the catchment area and had an organized system for the flow of patients, while a quarter of them (25%) follow a special system of distributing the families per doctor. The study also found that (67%) of the primary health care centers uses a proper filing system for the medical records.

None of family medicine centers was found by the study as having a good registration of the patient filing system. Only 17% of the family medicine centers were found to have a good registration especially for the general information and the patient's medical history, while 50% of them had an acceptable level of registration of the patient's examination and 67% of them had a bad level of registration of follow up condition of the patents (Table 6).

Table 5: Specific activities implemented in the family medicine centers. N=12

Activities	Number and percentage of PHCs			
	Yes		No	
	No.	%	No.	%
Screening of families at the catchment area	7	**58**	5	**42**
Families are distributed per doctor	3	**25**	9	**75**
Organized Flow of patients	7	**58**	5	**42**
Uses a filing system	8	**67**	4	**33**

Table 6: Assessing the level of registration in the patient's filing system (N = 12)

Activities	Number of PHCs					
	Good		Acceptable		Bad	
	No.	%	No.	%	No	%
Registration of general information and medical history	2	17	4	33	6	50
Registration of Patient examination	0		6	50	6	50
Registration of follow up	0		4	33	8	67
Overall registration	0		0		12	100

Registration in the patient management card was found to be good in both family and non-family medicine centers especially for the patient's ID (92%, 92%). For writing the diagnosis, non family medicine centers were 92 % good compared to 83% of the family medicine canters. Both of them were found to be bad in using the available protocols of treatment (0nly 42% and 58% were found to be good in treating the patients according to protocols) (Table 7).

Table 7: Assessing the level of registration in the patient's management card

	PHCs with family medicine doctor							PHCs with general practitioners					
	Good		Acceptable		Bad			Good		Acceptable		bad	
	No.	**%**	**No.**	**%**	**No.**	**%**		**No.**	**%**	**No.**	**%**	**No.**	**%**
Patient ID (name, age &sex)	11	92	1	8	0			11	92	1	8	0	
Diagnosis according ICD 10	10	83	0		2	17		11	92	0		1	8
Treatment according to PHCs protocols	5	42	0		7	58		7	58	0		5	42
Over all evaluation	26	72.2	1	2.8	9	25		29	80.6	1	2.8	6	16.7

Table 8: Assessing the level of registration of the filing system for non- communicable disease

indicators	Family medicine PHCs						Non family medicine PHCs					
	good		Acceptable		Bad		Good		Acceptable		Bad	
	No	**%**	**No.**	**%**	**No.**	**%**	**No.**	**%**	**No**	**%**	**No**	**%**
Patient ID	10	83.3	2	16.7	0		10	83.3	2	16.7	0	
Life style	7	58.3	2	16.7	3	25	10	83.3	2	16.7	0	
Clinical history	7	58.3	4	33.3	1	8.3	4	33.3	7	58.3	1	8.3
Drug history	3	25	6	50	3	25	3	25	3	25	6	50
Body measurement (BMI)	3	25	3	25	6	50	0		7	58.3	5	41.7
Symptoms	1	8.3	3	25	8	66.3	0		0		12	100
examination	1	8.3	3	25	8	66.3	0		5	41.7	7	58.3
other investigation	1	8.3	1	16.7	10	83.3	0		0		12	100
next visit	0		4	33.3	8	66.3	3	25	1	8.3	8	66.7

Table 9: Vaccine coverage rate

Type of vaccine	PHCs with family doctors								PHCs with general doctors							
	more than 90		69-89		50-69		Less than 50		more than 90		69-89		50-69		Less than 50	
	No	**%**	**No**	**%**	**No**	**%**	**No**	**%**	**No**	**%**	**No**	**%**	**No**	**%**	**No**	**%**
Penta 2 vaccine	6	50	4	33	2	17	0		4	33	3	25	4	33	1	9
Polio	6	50	5	42	1	9	0		2	17	4	33	5	42	1	9
Measles	8	67	5	42	0		0		1	9	6	50	5	42	0	

Table 8 shows the level of registration in the filing system for non-communicable diseases. The study found that registering the Patient's ID was good in both types of primary health care centers (83% in each type). Only 58.3% of the family medicine centers were found to have a good registered of the life style history compared to a better registration in the non family centers (83.3%).

Documenting the patient's clinical history was found to be registered in a good was in 58.3% of the family medicine centers compared to the same percentage in the non family medicine centered but with an acceptable level of documenting the clinical history of patients with non communicable diseases.

For the drug history, 50% of the family medicine centers were found to be in an acceptable level compared to the same percentage with a bad documentation of the drug history in the non family medicine centers

Documenting the body mass index was badly registered in 50% of the family medicine centers compared to 58.3% of the non family centers who had an acceptable level of registering the BMI of the patients with non communicable diseases.

All of the non family medicine centers were found by the study to be badly documenting the symptoms of the patients with non communicable diseases compared to 66.3% in the family medicine centers.

Similarly, for registering the examination notes, 58.3% of the non family medicine centers were found to be badly documenting it compared to 66.3% in the family medicine centers.

Furthermore, both types of the primary health care centers were found to be badly documenting the investigations done for the patients (100% of the non family medicine & 83.3% of the family medicine centers).

A similar percentage was also found by the study for documenting the next visit of the patients in both types of the centers (66.3 % in the family medicine centers & 66.7% in the non family medicine centers).

Table 9 shows that about half of the family medicine centers achieved more than 90% coverage rate for Penta 2 vaccine, Polio and Measles (50%, 50%, 67% respectively). For the non family medicine centers, about one third of them achieved more than 90% coverage rate for Penta 2, polio and measles (33%, 17%, and 9% respectively).

About half of the family medicine centers achieved more than 90% coverage rate for infant care 4th visit) compared to only 17% of the non family medicine centers who achieved more than 90% coverage rate for the 4th visit of infant care. Both types of centers (family and none family medicine) achieved less than 90% as a coverage rate for the 4th visit of antenatal and post natal care. (Table10).

Table 10 Antenatal and under-five years' care coverage rate

	PHCs with family doctors								PHCs with general doctors							
	more than 90		69-89		50-69		Less than 50		more than 90		69-89		50-69		Less than 50	
	No	%	No	%	No	%	No	%	No	%	No	%	No	%	No	%
Infant care(4th visit)	6	50	0		4	33	2	17	2	17	6	50	3	25	1	9
Child care(4th visit)	0		1	9	3	25	8	67	0		1	9	2	17	9	75
Antenatal care(4th visit)	0		0		1	9	11	93	0		0		0		12	100
Post natal care(4th visit)	0		5	42	3	25	4	33	0		2		8		2	

Discussion

According to the standards of Iraqi Ministry of Health, there should be one family medicine doctor for each 500-1000 families, and one doctor for each 10,000 of population in the general non family medicine center[12].
The present study revealed that the study population didn't fulfill this criterion, neither for the family medicine centers nor in the general non family medicine ones. Only five PHCs are within the criteria of Iraqi Ministry of Health standards of the families/doctor.

The general non family medicine centers were found by the study to have the highest number of families per doctor with a range from 916 – 2655. In five of the study primary health care centers, numbers of the population per doctor exceeds the MOH standards.

This result is similar to those found by a study done in Saudi Arabia which revealed that the actual staffing number was exceeding the Ministry of Health staffing requirements with respect to the physicians' number per primary health care center [13].

The number of patients seen by each physician has long been used as a tool for measuring the quality of health care. The present study shows a big variation in the number of patients seen by each doctor in both types of the centers (family medicine and general non family medicine). It was confirmed by the study also that the number of patients per doctor in the non family medicine centers is higher than those in the family medicine ones (24/ per doctor / per day, 30/ per doctor per day).

Internationally, there's no special standard for the number of patients to be seen by the doctor. Canada depends on something called "panel size" which is defined as "the number of patients (regularly) under the care of a full time equivalent physician[14]. Other countries use the "workload" which is the amount of time that activities consume or the frequency at which activities take place[15].

Others use the "productivity" which includes the production of an output per unit of effort [16].

For the availability the facility needs, the doctor's room was found to be having more than 50% of the needed facilities in both types of the centers, (75% for the family medicine centers and 66% for general non family medicine centers).

For the nursing room, in spite the finding that both types of the centers have a severe shortage in the basic needs of the facilities (much less than the standard list of Iraqi Ministry of Health, but this was found more noted in the nursing room of the non family medicine centers

The availability of the diagnostic aids on the other hand, was found to be available in only 17.6% of the study groups (for each type of the centers).

In the study done to evaluate primary health care in Al Riyadh, Saudi Arabia, a variation was found in the availability of the facility needs between three different types of primary health care centers that were included in the study[13].

According to the Iraqi Ministry of Health strategy for family medicine, all families should be screened in the catchment area of the primary health care center. Then, each family then should be given a unique serial number. The total number of families is based on the distribution of families according to the number of doctors in each center (generally it's calculated as 500 - 1,000 families per doctor). And each patient should have a file for registering all his/her medical history[12].

The study shows that more than half of the studied families have been screened with only a quarter of them have been distributed according to the number of doctors available at the primary health care center. It was also

found that less than two thirds of the families have a file system within the center.

For the registration in the file system of each patient, the study revealed an obvious incompleteness for the required information, examination and the follow up of the patient's condition (especially for those with non communicable diseases). This result might be attributed to the shortness of doctors; crowding and the use of mixed both types of doctors in each of the study locations.

In the patient's management card (which is usually given to the patient to be taken home), the study confirmed no difference between both types of primary health care centers. Both were found to be good in recording the patient's ID and his/her diagnosis on the time of visit.

Regarding the vaccine coverage rate, there were clear different between family medicine centers and general non family medicine ones in the coverage rate achievements of vaccines (penta2, polio and measles). More rates were achieved in the family medicine centers than those at the general non family ones.

There was also a clear difference between family medicine centers and the general non family medicine ones in the coverage rate achievements of infant visit coverage rate. While for the antenatal care and child care, the study found no difference between both types of primary health care centers with both covering less than 50% of the Iraqi Ministry of Health annual target of visits.

The coverage of antenatal care visits is all the time under-registered as many women can get the care by visiting other sources of care giving facilities other than the primary health care centers (hospitals, public and private clinics) and there's no official registration or statistical system from these institutes.

Conclusions

- Only (6) which is the half of family centers included at the study are managed by a family medicine doctor. Doctors whom are working in a family medicine center aren't all family medicine doctors.
- Population per doctor ranged from (1075-12944) for family medicine centers and (5480-15931) for non-family medicine centers.
- There is a big difference in the load of primary health care centers attendees ' per primary health care centers and per doctor. The range of attendees per doctor for the family medicine doctors is (5-63) compared to (13-50) for the non-family medicine centers.
- Only 17% of the medicine centers were found by the study as having a good registration of the patient's filing system.
- Both types of the primary health care centers were found to be bad in using the available protocols of treatment.
- The majority of the non family medicine centers were found by the study to be badly documenting the symptoms & the examination notes of the patients with non communicable diseases compared to 66.3% in the family medicine centers.
- Furthermore, both types of the primary health care centers were found to be badly documenting the investigations done for the patients (100% of the non family medicine & 83.3% of the family medicine centers).
- There was a clear difference between family medicine centers and general non family medicine ones in the coverage rate achievements of vaccines (penta2, polio and measles). More rates were achieved in the family medicine centers than those at the general non family ones.

Recommendations

- A program for developing the capacity of family medicine and primary health care doctors is recommended by the study. This program includes strengthening of the leadership and research strategies in Basra. In addition, focusing on strengthening of the current weaknesses found by the study should be included. These are:
    - Improving the registration of the patient's filing system.
    - Assuring the use of the standard treatment protocols.
    - Improving the documentation of the symptoms & examination notes of the patients with non communicable diseases in addition to the investigations done for the patients
- An extended study is recommended to improve the human resource capacity in relation with the exact work load in each type of health center in Basra.
- Another study is recommended to assess the causes behind better vaccination coverage in the family medicine centers compared to the non family medicine ones.

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