

Perception of Patients and Health Workers about Directly Observed Treatment Short Course (DOTS) Program Implementation in AL-Anbar Governorate.

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Abstract

Background:- DOTS Program is widely accepted as an essential strategy for achieving (TB) control. DOTS has been adopted by WHO as hopeful strategy for treatment of TB since early nineties. Iraqi health authorities started DOTS implementation since 2001 in Baghdad. Coverage expanded gradually till it reached 100% in 2003.

Objectives:- This study aimed to assess the application of DOTS program in Al - Anbar governorate ,and to define obstacles that facing the implementation of this program

Patient and Methods :- This Cross –Sectional TB patients and Health employees-based Study was conducted in consultation clinic in Ramadi City and Diagnostic units of Health Centres in Al-Anbar Governorate for the period of October 1 ,2012 to March 31,2013. Direct interviewing was applied by structured questionnaire , which consists of (10) ten questions to (200 TB patients) about the treatment application and their agreement with different aspects of care regarding DOTS program implementation was conducted. While a self-administered questionnaire was applied confidentially with a sample group involving (60) health care providers for their satisfaction on all aspects of the implementation of DOTs program. Socio-demographic information for this convenient sample were also collected .

Data were analysed using the Epi-Info statistical package. Frequency distribution and frequency rates were calculated ,and compared with other studies.

Results: Out of 200 TB patients 51% were males, and 49% were females with male to female ratio 1.04:1, with a mean age of 28.4 ± 6.5 years ,and 28.5% of male patients were illiterate ,and two thirds of them were unemployed . The agreement result for subjected individuals to structured questionnaire revealed a low assessing score(39.8%) for daily supplying of medication , while social stigma facing subjected patients was of high assessing score(88.3%) ,followed by effect of the disease on work and monthly income was (86.6%) . However ,the satisfaction of 60 health workers regarding motivation with financial monthly income was low (52%) ,followed by satisfaction of Health education given to TB patients was (73.8%) , while the overall mean satisfaction of the (60) health workers for the (10) questions was (78.35%) .

Conclusions: Although the proper follow up and health education are the cornerstone of TB management, there was no daily supply of medication to TB patients under supervision. Because of seriousness of the disease and low financial motivations, the health workers showed no desire to work in this program

Key words : DOTS .TB . mean agreement. mean satisfaction.

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Introduction

Tuberculosis (TB) is an infectious disease and in spite of a major advances in its diagnosis, treatment and prevention, it still constitutes a major global health problem .Each year, there are around nine million new cases of TB ,and close to two million people that die from TB ⁽¹⁾.

Deaths from TB comprise 25% of all avoidable deaths in developing countries and 75% of these deaths are in the economically productive age group (15 - 59 years) ,and thus TB has huge economic, social and familial repercussions ⁽²⁾.

World Health Assembly (WHA) recognized TB as a major global public health problem. Two targets for TB control were established- detection of 70% of new smear positive cases and cure of 85% of such cases . In 1994, the internationally recommended control strategy, later named (DOTS), was launched. In Iraq by 2006, new smear-positive TB cases had reached 46% and treatment success rate was 87% ⁽³⁾.

The world health organization (WHO) is working dramatically to reduce the burden of TB, and halve TB deaths and prevalence by 2015 compared with 1990 and to eliminate the disease (<1 case per million population) by 2050 through its Stop TB Strategy ⁽⁴⁾. DOTS refers to a method of treatment of TB in which each prescribed dose of medication is taken under observation of a supervising person ,usually but not necessary a health professional. ⁽⁵⁾.

WHO has evaluated the performance of DOTS in the course of specific studies ^(6,7) as well as detailed annual reports since 1997 ^(8,9). These publications make use of two major indicators of program performance ;treatment results among patient cohorts and percent of incident TB cases detected by national programs .

AIMS:- To assess the application of DOTS program for treating TB Patients in Al - Anbar governorate , and to define obstacles that facing the implementation of this program .

Patients and Methods :-

This Descriptive cross- sectional Health employee and TB patients-based study was conducted in consultation clinic in Ramadi city and diagnostic units in the health Centres in Al-Anbar Governorate . Patients with pulmonary and extra pulmonary tuberculosis (TB) ≥ 15 years old attended consultation clinic for chest and respiratory diseases in Ramadi city and TB units in health Centres in Al-Anbar Governorate , who received DOTS at the time of data collection. ,in addition to Medical and paramedical staff in these Health units were enrolled in this study . There were thirteen cases of multidrug-resistant TB Patients, they were excluded from the study because of unavailable data regarding their health condition and their fate was vague.

The appropriate sample size for the study was achieved through consecutive visits of the researcher to consultation clinic and TB units in Al-Anbar health directorate two days per week for the period of October 1, 2012 to March 31, 2013 and each patient met the inclusion criteria included in the study . A convenient sampling technique was used for selection of the patients sample and the total sample collected were 200 TB patients.

The researcher explained the study and its objectives according to ethical approval taken. The data were obtained by face to face interviewing with the patients ,while Medical and paramedical staff completed a prepared questionnaire for this purpose . No objection was faced and response rate was 100%.

The structured questionnaire was developed according to the guidelines of WHO case management which was taken from national tuberculosis control program (NTP), and includes 2 parts:

Part I- Assessment of TB patients' agreement:

This patient-based study was carried out to assess the perceived quality of care provided to TB patients that attending consultation clinic and TB units in health centres. The sample of TB patients ≥ 15 years of age (whether pulmonary and extra-pulmonary) from both sexes were asked through face to face interview in a friendly atmosphere in the reception area.

The questionnaire form consisted of ten questions to TB patients about the application of DOTS program strategy in the management of TB disease, and to determine their agreement with different aspects of care for assessment of DOTS program implementation.

The measurement scale of agreement was based on three points Likert scales (No=1, do not know=2 and Yes=3). The mean percent evaluation and satisfaction scores for each item was calculated as follows:

Total scores for all participants in the item $\times 100$ / maximum possible scores for all participants in the same item.

Where total scores for all participants in the item = [(No. of No $\times 1$) + (No. of don't know $\times 2$) + (No. of Yes $\times 3$)]^(10,11)

And maximum possible scores for all participants in the same item = [No. of all participants $\times 3$]. It is based on Likert scale.

Part II- Assessment of employees' satisfaction for DOTS Program implementation :-

This health employees-based study was carried out to assess employee satisfaction.

For this reason, a self-administered questionnaire was applied confidentially with a sample group involving 60 health

care providers. The questions to health workers included their satisfaction on all aspects of the implementation of DOTS program in Al-Anbar health directorate.

The measurement scale of satisfaction was based on three points Likert scales (Not satisfied =1, fairly satisfied=2 and very satisfied=3)

The mean percent evaluation and satisfaction scores for each item was calculated as follows:

Total scores for all participants in the item $\times 100$ / maximum possible scores for all participants in the same item.

Total scores for all participants in the item = [(No. of Not satisfied $\times 1$) + (No. of Fairly satisfied $\times 2$) + (No. of very Satisfied $\times 3$)]^(10,11)

And maximum possible scores for all participants in the same item = [No. of all participants $\times 3$]. It is based on Likert scale.

The information about the obstacles which faced DOTS program implementation were obtained from TB patients and health workers especially the manager of consultation clinic by direct interview.

The Research Ethical Approval Committee of the Medical College, AL-Anbar University, Iraq, approved the research.

Data were analyzed using the Epi-Info statistical package. Frequency distribution and relative frequency rates were calculated and compared with other studies.

RESULTS:-

A total of 200 TB patients answered the assessing questions. They were 102 (51%) males and 98(49%) females, with male to female ratio of 1.04:1. The mean age of the patients interviewed was 28.4 ± 6.5 years, 28.5% of males were illiterate and two thirds of them were unemployed. Urban resident patients were 83 (41.5%) and rural resident cases were 117 (58.5%).

Illiterate patients were 57 (28.5%), primary 73 (36.5%), secondary 42 (21%) and graduated patients were 28 (14%). Public

servants represented 15% of the cases, housewives 33.5%, unemployed 26.5%, retired 14% and pupils 11%, table (1).

Table 1. Demographic characteristics of patients asked for their DOTS program assessment, in Anbar, 20012-2013

Variable	No.	%
Age mean age \pm SD (28.4 \pm 6.5) years		
Gender		
Male	102	51.0
Female	98	49.0
Total	200	100.0
Residence		
Urban	83	41.5
Rural	117	58.5
Total	200	100.0
Education level		
Illiterate	57	28.5
Primary	73	36.5
Secondary	42	21.0
Graduate	28	14.0
Total	200	100.0
Employment		
Public servant	30	15.0
Housewife	67	33.5
Unemployed	53	26.5
Retired	28	14.0
Pupil	22	11.0
Total	200	100.0

Satisfaction and Agreement of (200) TB patients in Al Anbar Governorate about the application of DOTS program, revealed a low assessing score (39.8%) for daily supplying of medication, while social stigma facing subjected patients was of high assessing score (88.3%), followed by effect of the disease on work and monthly income was (86.6%) , (Table 2).

Table 2. The satisfaction and agreement of the TB patients of in Anbar Governorate about the application of DOTS program

Questionnaire Item	Yes		Don't		No		Total		Evaluation score
	N	%	N	%	N	%	N	%	
Availability ,adequacy and from international origins treatment	128	64.0	55	28.0	17	9.0	200	100.0	86.5%
Medication given daily and under supervision	12	6.0	15	8.0	173	87.0	200	100.0	39.8%
Medication taken properly according to instruction of program	142	71.0	23	12.0	35	18.0	200	100.0	84.5%
Good dealing of staff of program with patients	139	70.0	18	9.0	43	21.0	200	100.0	82.6%
Suffering from side effects of the medication	152	76.0	10	5.0	38	19.0	200	100.0	87%
Continuous and proper follow up and health education by medical staff	131	66.0	7	4.0	62	30.0	200	100.0	78.1%
Visiting the TB unit regularly	144	71.0	13	7.0	43	22.0	200	100.0	83.5%
Are there any effects of the disease on your work and the monthly resource of your family? .	157	79.0	6	3.0	37	18.0	200	100.0	86.6%
If there any social problems (social stigma) with your community related to the disease? .	161	81.0	8	4.0	31	15.0	200	100.0	88.3%
Receiving lectures of health education about TB disease	79	40.0	68	33.0	53	27.0	200	100.0	71%
Overall mean agreement	78.79%								

The satisfaction and conviction of the Medical and Paramedical staff in the consultation clinic for chest and respiratory diseases in Ramadi city and the diagnostic units in the health centres about the application of the DOTS program, revealed that the motivation with financial monthly income satisfaction mean

was low (52%) ,followed by Health education given to TB patients satisfaction mean was (73.8%) , while the satisfaction mean of (85.5%) for both , Cooperation of Medical staff about DOTS application ,and Training and information receiving by Medical staff (table-3) .

Table 3. The satisfaction and conviction of the medical and paramedical staff in the consultation clinic for chest and respiratory diseases in Ramadi and the diagnostic units in the health centre about the application of the DOTS program.

Questionnaire Item	Not satisfied		Fairly satisfied		Very satisfied		Total		Satisfaction Mean
	N	%	N	%	N	%	N	%	
Type of work and responsibility in the application of the program	6	10.0	18	30.0	36	60.0	60	100.0	83.3%
Co-operation and the support of the medical staff with you about the application of the program to success the program.	5	8.33	17	28.3	38	63.3	60	100.0	85.0%
The training and information that you have got through your work for the success of the program.	12	20.0	14	23.0	34	57.0	60	100.0	78.8%
The motivation with financial monthly income including dangerous incentive for your work in the program.	38	63.0	10	17.0	12	20.0	60	100.0	52.2%
The availability of infra-structure, the provision of essential appliances and equipment in consultation clinic to discover TB.	8	13.0	18	30.0	34	57.0	60	100.0	81.1%
The behaviour and the attitude of the TB patients towards doctors and medical staff.	7	12.0	17	28.0	36	60.0	60	100.0	82.7%
The compliance of TB patients	12	20.0	26	43.0	22	37.0	60	100.0	72.2%
Your satisfaction and opinion about the services of clinic and diagnostic units towards the patients.	8	13.0	16	27.0	36	60.0	60	100.0	82.2%
The financial incentive and the moral support to TB patients give a help to success the program.	9	15.0	12	20.0	39	65.0	60	100.0	83.3%
Your satisfaction in applying the public-private mix (PPM) program in DOTS strategy	7	12.0	17	28.0	36	60.0	60	100.0	82.7%
Overall satisfaction for all items	78.35%								

Discussion:

Despite the enormity of the issue and constant effort of World Health Organization (WHO), understanding and awareness on many aspects of TB, among the general public as well as many health care professionals, remains hesitant. Surveys carried out worldwide assessing not only the knowledge, but also attitude and practices of health care workers, have identified calamitous deficiencies warranting a well-coordinated global effort in order to achieve WHO stop TB partnership targets⁽¹²⁾

This study illustrated that most of TB Patients were of middle age (mean age 28 ± 6.5 years), with equal of male and female gender, and one third of males were illiterate, and two thirds of them were unemployed. These findings might be explained due to more exposure and the more activity of that age group.

These socio demographic characteristics were close to findings of Bassili study conducted in 7 eastern Mediterranean countries⁽¹³⁾. National Tuberculosis control Program (NTP) in Iraq announced that TB cases were between 15-54 years, 61% of them were males⁽¹⁴⁾, which is more or less similar to distribution of most regional countries declared by WHO⁽¹⁵⁾. Rural residence of the TB patients was more prevalent than urban residence, which explained that the majority of Al-Anbar Province were of Rural origins and duties with more exposure for infection and to its related mode of transmission, and these findings were inconsistent with other studies in Iraq⁽¹⁶⁾ and these might be attributed to Urban nature of the performed study.

Mean agreement of the patients regarding special questions was 78.79%, the patients were satisfied and the agreement score was high for availability of treatment (86.5%), intake of treatment according to instructions (84.5%), cooperation of staff with them (82.6%), side effects of medications (87%), regular

visits of TB units (83.5%), social stigma (88.3%) and economical burden (86.6%), the family may sell assets because of reduced income pushing them further into poverty and losing their future potential for earning and may end up begging. These findings are close to results of Hashem DS and his colleagues study in Baghdad (2008) which assessed the knowledge and behaviour of TB patients⁽¹⁷⁾. The patients were unsatisfied and the agreement score was low for daily treatment supply under supervision (39.8%), continuous and proper follow up of the patients (78.1%) and health education in TB units (71%). As the more than half the patients were from rural areas so the daily treatment supervision was delayed⁽¹³⁾.

Proper follow up and health education are the cornerstone of TB management⁽¹⁸⁾, and poor knowledge of the patients regarding TB disease that affect their treatment outcome⁽¹⁹⁾.

The mean satisfaction of the health workers was 78.68%; this rate of satisfaction in this study was within the range of rates listed by studies in other countries. For instance, Taman study showed that the overall satisfaction with health centre staff in Oman was 79.44%⁽²⁰⁾, while a study by Budor revealed that the overall providers' satisfaction with primary health care services in Turkey was 76.0%⁽²¹⁾.

The health workers were satisfied with their responsibilities in DOTs program (83.3%), their cooperation and medical support (85%), training and information (78.8%), availability of infrastructures (81.1%), their behaviour with TB patients (82.7%), diagnostic services (82.2%) and applying public-private mix (82.7%).

The health workers were unsatisfied with financial motivations (52.2%), compliance of TB patients (72.7%) and The financial incentive and the moral support to TB patients give a help to

success the program (83.3%) . The communication with TB patients is important chain in the management of TB that requires additional training of health workers and adoption of health extension workers (HEWs) strategy by training of community workers which improved the cases detection rate ⁽²²⁾.

Applying Public-Private Mix program is of great benefit for DOTs program and especially for case detection rate of new sputum smear positive TB cases in which the private health care play a central role in detecting and health-caring of TB patients ⁽²³⁾.

The most important obtained obstacles and problems facing DOTS program implementation in AL-Anbar Governorate according to patients and health workers direct interview ,in addition to the manager of consultation clinic were as follow :

-lack in the number of medical staff particularly specialist respiratory physician

-shortage in the training courses for the staff particularly paramedical staff ,in addition to changing of their places from time to time

-lack of cooperation of medical staff of private hospitals and clinics regarding the referral of TB cases leading to multidrug resistant TB.

-weak participation of the leadership of the community, and media role in health and educated messages about the disease

-Bad security situation and lack of full stability, which sometimes prevent the patients from going to the medical institution .

Conclusions:

- DOTS is widely accepted as an essential strategy for achieving tuberculosis control, and was played an important role in improving registration and management of TB cases in Al-Anbar governorate

There was low daily supplement medications due to the unstable security and environmental factors, in addition to low satisfaction of employees financial motivations and low TB patients compliance might affect the better program implementation.

In order to improve TB control program and its implementation of DOTS strategy in Al-Anbar Governorate, we recommend the followings:

-There must be a secure government commitment and help for the program.

-The new policies about DOTS strategy need abroad support from governmental ,non –governmental organizations and co-operating agencies ,civilian community organizations.

-Re-plan the activities against tuberculosis on solid grounds and reorientation of the tuberculosis control policies towards DOTS implementation through involvement of the heard and sight media.

-Involvement of public health and academic institutions in TB control program through their theoretical and practical seasons.

- A comprehensive program review with improving the quality of reporting in health facility accompanied by monitoring and evaluation of program by cohort analysis.

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