An investigation of factors affecting patients waiting time in primary health care centers: An assessment study in Dubai

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CHRONICLE	ABSTRACT
	This study tends to investigate and assess the average waiting time (WT) in Dubai primary healthcare services centers. Healthcare centers will face critical problems if WT is not solved properly. Accordingly, this study tries to dig a deep insight on such problem and provides proper suggestions to reduce WT. An Electronic Medical Record audit is used to count the patients' WT during a four-week period in health care service centers employing a universal sampling approach. All patients who visit the health medical centers during such period are considered for the study purpose except those need emergency services. A self-administered questionnaire is used to collect the needed records about WT longevity causes from direct employees who use to interact patients in a continuous basis. The questionnaires are distributed in 12 healthcare centers throughout Emirate of Dubai in UAE. A total of 76,780 electronic medical records are audited for patients and 938 responses are analyzed for the employee survey. The study finds that about 45.2% of the patients were registered within less than 7 minutes of their visit and the mean WT was 11.7 minutes of entrance. While more than two third of them (75.3%) waited less than 30 minutes and the average consultation WT was 34.2 minutes. 65.9% of patients waited less than 28 days to get their appointment and the average appointment WT was 35 days. The data collected from employees denoted that the main causes of patients' WT were high workload level, insufficient work procedure, employees- supervisor interaction problems and adequate facilities availability. There is a need for healthcare leaders and managers in charges in this sector to reduce patients' complaints while waiting and to solve the WT problem in a planned manner.

1. Introduction

The Dubai Health Authority has thirteen primary healthcare centers across Dubai and in the year of 2018, around 740,345 patients walked in to the family medicine practitioners at these stations (Dubai Health Authority, 2019). Moreover, the numbers have continuously dwindled annually, which shows that the patients do not seek medical attention despite making appointments and confirming a day before, through call or SMS (Bridge, 2019). This deficiency in taking up medical assistance has become an issue of concern among administrators in primary healthcare centers and also politicians with the aspect of concern being the outpatient waiting time (WT) that tends to discourage patients from seeking service from primary healthcare centers. Notably, the delivery of treatment for patients has been a very significant issue in many healthcare organizations around the world. The longer WT has been constantly recognized as a key barrier to care and affect both service quality and

building friendly customer relationship with customers (Gutacker et al., 2015; Alshurideh et al., 2019). WT is being considered by healthcare administrators and policy-makers as a serious problem especially in primary healthcare centers as it is the most wearisome part of the process in the healthcare system since it acts as a barrier in the efficiency of flow of patients and also leaves the patients distressed and dissatisfied (Dinesh et al., 2013). According to Pillay et al. (2011) and Alshurideh (2014), waiting for treatment can be a frustrating and affect patients' satisfaction as it is wasted on performing unproductive activities. Therefore, healthcare organizations should adopt various strategies to better measure and manage WT. Commonly, the WT accounts from patients based on reviewed literature taint a negative perspective and in the long run, tend to affect the overall satisfaction of patients with the service offered in primary healthcare centers (Bielen & Demoulin, 2007; Pillay et al., 2011; Fenny et al., 2014; Alsharqi et al., 2017). Generally, waiting a little time is acknowledged by patients when they plan to visit their medical centers to see their doctors and got treatment; however, such time and acceptable level of it is not clear (Azraii et al., 2017).

According to Al-dmour and Alshurideh (2008), Pillay et al. (2011) and Al-Duhaish et al. (2014), customers hold different perceptions, which are typically shaped by beliefs and attitudes, where norms and values predominate which all influence their action and reaction behaviors. Evidence shows up from some of the heath care centers' visitors declared that 30 minutes waiting is a long time, but some others do not mind if they wait for more than one hour without getting the stress feeling (Landi et al., 2018). Some studies showed that some patients do not mind to wait on an average between 30 and 45 minutes to get their treatments (Barlow, 2017; Bielen & Demoulin, 2017). In general, the experience of lengthy WT can be influenced by large number of factors such as the number of patients, shortage of both administrative and specialists' staff and the long registration time and even the work process and procedures (Oche & Adamu, 2013; Alsharqi et al., 2017; Al-Zoubi et al., 2012). Sufficient employees and suitable training according to (Alshraideh et al., 2017) can reduce WT and provide high quality services for medical centers visitors. A review of the literature indicates that not that much studies can be found regaridng the acceptable WT level specially in Dubai -UAE. Consequently, the aim of this study is to investigate patient's WT in Dubai primary healthcare centers and to identify the main perceived WT causes and consequences specially those perceived by medical service employees. This study also tends to help a nationwide effort that is carried out to study and follow the WT of Dubai primary healthcare clinics. Thus, the study will provide valuable causes and treatments to the policy-makers and managers to help them design and execute new strategies to manage the WT issue.

2. Literature Review

Patient WT can be described as the period during which a patient waits in a clinic before he/she actually sees the primary healthcare provider (Gijo & Antony, 2014). The efficiency and effectiveness in primary healthcare are affected by various factors but the critical element is the extended WT that has been a major point of complaint for most patients (Zhu et al., 2009; Tang et al., 2013). In healthcare, time has been considered to be one of the significant measures of service quality (Alshurideh et al., 2017; Al-dweeri et al., 2017) and a source of dissatisfaction among patients as this WT can affect the outcomes of patient care (Sriram & Noochpoung, 2018). Oche and Adamu (2013) argue that it is a critical indicator of the quality of the services that were present in primary healthcare facilities and usually influences the utilization of healthcare services. Through various studies patients view lengthened WTs as a limitation for accessing services. By making patients wait needlessly, an element of stress may develop between the patient and the primary healthcare provider. Furthermore, Bergenmar et al. (2012) claim that WT is a relative matter regarding the evaluation of the service quality received from an individual against his expectations. Moreover, the dilemma of lengthy WT in healthcare can be indicated to resources avialbility and/or sourcest that are not used properly to enahnce patients' medical trearment and medical visit conditions (Uehira & Kay, 2009; Assad, 2014). Longer WT is an important factor leading clinics to lose their patients and reputation and creating discomfort for staff (Pillay et al., 2011). Notably, it has been found that WT issue can affect customers service satisfaction and can also moderate satisfaction-loyalty relation specialy within the service context (Bielen & Demoulin, 2007; Obeidat et al., 2012).

Bielen and Demoulin (2007) and Alshurideh et al. (2012) found that the experience while waiting can also affect patient satisfaction and is influenced by other factors such as doctors expereince, medical cntres cleaniess, doctors and stuff expereince and friendly behaviour, and type of information provided in case of delays. Principally, the attractiveness of the primary healthcare center is also a critical aspect that tends to affect the perception of the patient WT (Oche & Adamu, 2013; Krczal et al., 2016). For example, entertainment means avialbility such as reading materials may improve the anticipation patient WT and happenies (Obeidat et al., 2019). Research studies have shown that if the primary healthcare waiting time is more than 30 minutes, patients are likely to be dissatisfied with the medical service offered; however, meeting this mark is a hard task due to the excess demand that may be common (Alarcon-Ruiz et al., 2019). Furthermore, if the WT in a primary healthcare center is utilized to achieve a productive activity, higher levels of satisfaction are recorded. By reviewing some of the WT previous studies in healthcare setting indicates that there are many factors tend to increase the lengthy WT. According to Maluwa et al. (2012), overcrowding of patients, few healthcare provider and inadequate healthcare facilities can prolong patients WT in clinics. Another focus of studies on WT in healthcare is how it influences the delivery services perception and patients' clinic experience. In Nairobi healthcare services, Wafula (2017) found that the availability of doctors in a clinic was associated with patients WT. In this study, 384 patients were surveyed. Results indicated that the average time witnessed during the study period was 55 minutes; however, the longest WT was found when waiting to see the doctor which was about 13 minutes. A study conducted by Oche and Adamu (2013) about the factors affecting patient WT in outpatient department

of tertiary health institutions in northwestern Nigeria. Both scholars found that 'large number of patients' was one of the main factors that contribute well to patients WT. Another factor was found that patients usually take long times to receive the medical services which cause the stress and anxiety for both staff and patients. In this paper, out of 100 surveyed patients, 62% waited more than 90 minutes in outpatient department from entry to exit and 38% waited more than 180 minutes. The most common long WT triggers were large number of patients available during a specific period of time which increase the work load and limited number of doctors. In Malaysian primary healthcare clinics, Azraii et al. (2017) assessed patients WT and doctors' consultation time. Findings denoted that more than 50% of the patients were recorded within 15% and the mean of WT to see the doctor was about 41%. Also, 99% of medical centers visitors waited less than thirty minutes. The scholars recommended to increase the number of both administrative staff and doctors and the importance of applying work systems such as registration systems, booking systems and follow- up systems in healthcare clinics.

Hasanpoor-Azghdy et al. (2014) conducted a study to analyze the WT of patients in outpatient department in Iran and reported that the average WT was 161 minutes from entry to exit. In their study, seven factors contributed to the lengthy WT including registration process and practices, skilled staff unavailability, shortage of specialized doctor, types of models to minimize the WT, having electric booking systems such as using FIFO Model in the medical centers which suggested to serve who come first to go first. Furthermore, according to Pillay et al. (2011), Abu ELSamen and Alshuraideh (2012) and Alkalha et al. (2012), employee attitude and beliefs, work procedures and environment, the availability of high workload, employees-supervision management problems, and medical and administrative facilities availability were the most WT problem causes in healthcare settings. In some studies, patients wait for more than two hours from registration to getting the prescription slip, while the contact time with medical personnel was only 15 minutes on average. Based on the results obtained from various studies, it can be concluded that there are common causes to long WT in primary healthcare clinics including overcrowding of patients, few healthcare provider, inadequate healthcare facilities, employee attitude, work process, heavy workload and management problems. Long WT is mostly caused by the presence of more patients who require attendance which then causes overcrowding (Zhu et al., 2012). In this case, more patients often seek treatment, which overwhelms the current number of healthcare practitioners available in a healthcare center. Overcrowding, especially in specialist primary care centers around Dubai, may discourage individuals from visiting primary healthcare centers and specialists may be overwhelmed by these high numbers (Gardiner & Hussein, 2015). Other countries and regions outside of Dubai also grapple with longer WTs based on WT surveys that have been carried out worldwide (Jaakkimainen et al., 2014).

WT studies have been carried out since the 1900s from engineering and industrial environments and the central element has been on decreasing the deficiencies in human effort and assets during the production procedures (Zu'bi et al., 2012; Wagenaar et al., 2016). These time-motion studies are critical for the realization of bottlenecks to heighten the performance of the system through the use of retained data in a consistent manner. These time-motion studies must be done in Dubai in order to see how health workers allocate their time in primary care systems, such as those carried out in sub-Saharan African environments and these examinations should be able to follow the progression of the patients throughout their primary care visits (Were et al., 2015). Furthermore, these time-motion studies will be critical in understanding the wait and consult periods that look into the experience of patients during their visits to primary healthcare centers across Dubai. The findings will be important in informing the suggestions that would touch on recruitment allotment, infrastructure efficiency, the revisions to workplace values and traditions and the examination of the influences of novel programs using affordable analysis. Various studies have been able to show that elongated WT for people has negative effects on health-seeking actions, patient contentment, and remediation observance while more consultation time has better effects on the patient's perception and health (Bleustein et al., 2014; Ghannajeh et al., 2015). Other studies have stated that better patient satisfaction leads to better utilization of health services and contented patients are also more willing to adhere to the healthcare provider's directions and even proceed with follow up care (Kreitz et al., 2016).

Various authors offer suggestions aimed at decreasing WT for primary care clinics. One of the suggestions, alternate methods for delivering treatment such as telemedicine method, reduces the wait times for patients (Nakhwa & Kadam, 2016). In various regions across the world such as the United States and Canada, it has been realized that group-based models among physicians have instituted for better after-hours treatment that is divided among healthcare practitioners (Ansell et al., 2017). Physicians can thus offer patients better chances at being addressed in an adequate manner. Even though primary healthcare practitioners in Dubai have been able to make appointments through phone and messaging platforms, suggestions are that there is the full utilization of electronic media and other follow up communications (Ammari et al., 2017; Obeidat et al., 2019) to decrease the number of unwarranted and time-wasting face-to-face appointment while still establishing the consistency of care. Finally, policymakers and care providers in Dubai should take up the challenge of coming up with decisions that are of the implementation of suggestions to decrease the WTs for primary care schedules even further, though recent activities have been centered on addressing this pertinent issue, especially for the elderly. Therefore, as this study moves towards its purpose of determining the WT in Dubai primary healthcare centers, it hopes to provide models and strategies to improve the management of WTs in such centers.

3. Methodology

This research is a descriptive analytical study using a universal sampling method in which all electronic medical records of Dubai primary healthcare patients are audited to assess patients' WT. This study was conducted at primary healthcare clinics in Emirate of Dubai involving 12 healthcare centers from 1 August 2019 until 28 August 2019. This study was last for four weeks to collect the needed data including clinics that not only run just by family medicine services "walk-in clinics" but also those run by specialist services "appointment clinics". In those medical centers, the walk-in patient who come to the clinic can be seen by any of the family medicine doctors available while follow-up patients are those who used to be given an appointment to see a specific doctor who usually used to see them as a continuous basis.

All patients who attended the predetermined medical clinics during the period was included in the study except those who have an emergency medical situation or those who come for a repeated medical prescription or come for routine medical procedures without a real need to see the doctor. In this study, an electronic medical registration system was used to collect the needed information about patients WT they experienced based on three sort of groups, namely WT registration (i.e. the time needed form the patients arrival until the patients met one of the needed administrative staff) , consultation WT (i.e. the time taken from the visitor patient's registration until seeing one of the medical doctor or specialist) and appointment WT (i.e. the time taken from the given appointment time until the patient was seen by a medical doctor). The process of recorded timing started with the time the patient arrived and pressed the queue management system (QMS) button so that the time of arrival was taken using QMS and then at every station patient was issued a timing which had to be automatically captured by the electronic medical record system, which is Epic Health Information System (HIS). All relevant data were extracted from Epic HIS in audit list before being moved to the SPSS version program 25.0 to be screened and analyzed as required. Descriptive analysis was performed with central tendency analysis (Mean) and measures of dispersion (Standard Deviation). Notably, there have been several published studies on WT in primary healthcare settings; nevertheless, the acceptable standards of practice were difficult to establish. Therefore, the standard for this study was defined according to a set of targeted criteria established by The Executive Council (DHA) 2019.

A sum of 77,249 patients who visited the medical centers during the study period were collected and screened out of this, 469 fulfilled the exclusion criteria, and therefore, a total of 76,780 patients were included in the study. Furthermore, this study uses a cross-sectional survey in which many random clinics staff of Dubai primary healthcare sector are included to identify factors perceived by healthcare providers which contribute to the WT problem. It is a single cross-sectional design in which the collection of information from the research population and respondents are performed once only. A questionnaire as the main quantitative tool was adopted to collect data through a self-administered method using the drop-off technique. The questionnaire was designed to identify factors which contribute to the WT problem in the targeted healthcare centers. In this study, the sample unit includes all administration and clinical staff at those healthcare centers. Due to the inability to get the list of sampling frame in those healthcare centers, non-probability sampling method using the convenience sampling technique was adopted. Convenience sampling was considered as the cheapest and the least time consuming sampling technique and has easy access to a big enough sample (Easterby-Smith et al., 2012).

In addition, it is very common in research because it is "-well- convenient". Accordingly, the questionnaires were handed to the targeted respondents based on their number in each healthcare center. The questionnaires were distributed in Dubai primary healthcare centers within several regional areas of the city. The data collection was administered by handing out the questionnaires to the targeted employees with full consideration to represent various professions when distributing and collecting the questionnaire. Later, a follow-up processes such confirmation calls and multi visits to the targeted centers were made to collect the questionnaires in person. Notable, the measurement instruments should be reliable and valid. Reliability and validity analyses were carried out on the instrument that provided precious insight into the perception of the employees themselves with regard to patient WT. In evaluating measurement instruments, Cronbach alpha and factor analysis were performed to understand whether measurement instruments were reliable and valid. The SPSS 25 program was used also in evaluation. The study population represented the total primary healthcare sector personnel. The total population was 1400 individuals working in the primary healthcare sector. A sample of 302 was required in this study at the confidence level of 95 percent. Notably, this study needs a large sample to reduce the sample error of the non-probability sampling and to improve the accuracy of the sampling result and its generalizability. Accordingly, 1,200 surveys were circulated and 938 employees responded. Accordingly, the response rate was 78.2%.

4. Data Analysis

4.1 Analysis on patients WT

The sample included both males and females. Fig. 1 shows that 55.5% of patients were female while 45.5% were male. The demography of the patients also shows that more than 67.1% of patients were less than 59 years old. The composition of the patients according to nationality were Emirati 68.3% and non-Emirati 31.7%. The higher percentage of Emirati patients resulted in this study is due to the fact that this study was carried out in the public sector, where the majority of Emirati patients are insured and gotten free charge services. Concerning the distribution of patients by visit type, Fig. 1 shows that the majority

of the patients, about 52.6%, were followed up patients, while 47.4% of them were visiting the walk-in clinics. Fig. 1 shows the details of the sample demography. As seen in above figure, 76,780 patients record were included in the study purposes. The finding indicates that the mean WT that the patients need form arrival stage until the patients were registered by one of the medical record staff was 11.7 minutes, while the average time taken from the medical registration unit until the patients were seen by one of the medical specialists was 34.2 minutes. In addition, the finding indicates that the average time taken from the given appointment time until the patients were seen by one of the medical doctors was 35 days. Table 1 shows the average WT for each phase process and the percentage achievement according to the set criteria established by DHA 2019. The results indicate that the average WT in Dubai primary healthcare centers appears to be lengthy. The results also indicate that less than 50% of the patients were registered within about 7 minutes (45.2%), while more than two third of them (75.3%) waited less than thirty minutes to be seen by one of the medical doctors. In addition, the finding indicates that large portion of the patients, about 65.9%, waited approximately less than 28 days to get their appointment.
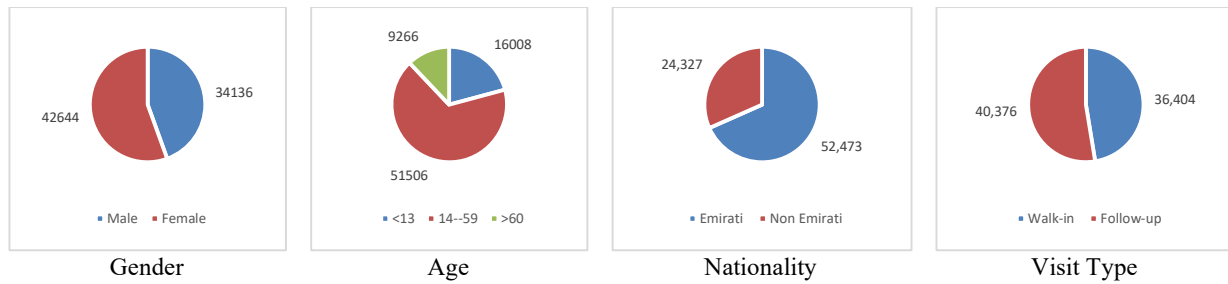

Fig. 1. Patients main demographic categories

Table 1
Average WT in Dubai primary healthcare centers

WT	Target Criteria	Average Time	% of Achievement
Registration WT	WT should be <7 minutes	11.7 Minutes	45.2%
Consultation WT	WT should be <30 minutes	34.2 Minutes	75.3%
Appointment WT	WT should be <28 days	35 days	65.9%

4.2 Measurement Model Analysis

This study identified five factors contribute to lengthy WT in primary healthcare settings, namely employee commitment and attitude, insufficient work procedures, oppressive workload, management and/or employee-manager supervision problems and facilities unavailability and shortages.

Table 2
Internal Consistency and Factor Loading Tests for WT Items

WT Factor	Factor Loading	Eigenvalue	%Variance	Cronbach's Alpha	WT Factor	Factor Loading	Eigenvalue	%Variance	Cronbach's Alpha
ECA Factor					**IWP Factor**				
ECA1	0.802				IWP1	0.684			
ECA2	0.878				IWP2	0.621			
ECA3	0.765				IWP3	0.858			
ECA4	0.809	4.56	65.136	0.899	IWP4	0.85			
ECA5	0.807				IWP5	0.809	7.372	73.725	0.921
ECA6	0.764				IWP6	0.837			
ECA7	0.819				IWP7	0.814			
HW Factor					IWP8	0.797			
HW1	0.837				IWP9	0.837			
HW2	0.797	2.733	68.32	0.842	IWP10	0.763			
HW3	0.56				**MSP Factor**				
HW4	0.621				MSP1	0.78			
IF Factor					MSP2	0.751	2.833	70.821	0.858
IF1	0.795				MSP3	0.58			
IF2	0.851	3.162	71.765	0.873	MSP4	0.772			
IF3	0.68								
IF4	0.872								

Waiting Time (WT) Factors: Employee Commitment and Attitude (ECA); Insufficient Work Process (IWP); Heavy Workload (HW); Management and Supervision Problems (MSP) and Inadequate Facilities (IF).

Several instruments developed by several researchers to identify factors contribute to lengthy WT were differ in terms of constructs and measurement items. In this study, the prepared data collection questionnaire's items used was based on other

studies specially that by Pillay et al. (2011) in Malaysia. Keep in mind that some modifications were made to the instrument's items were made to meet this study purposes and setting. In this study, twenty-nine items were developed for measuring the five factors contribute to lengthy WT in primary healthcare settings. A widely used 5-Likert scale was employed for scoring responses (1: Strongly Disagree; 2: Disagree; 3: Neither Agree nor Disagree; 4: Agree; 5: Strongly Agree). In assessing the internal consistency of the items, the Cronbach's coefficient alpha was employed. An instrument is consistent if the items are highly correlated with each other. Thus, they are likely to measure similar variables (Churchill & Brown, 2004). Nunnally and Bernstein (1994) declared that if a Cronbach's alpha value is 0.60 or more then it can be considered adequate. In this study, the lowest acceptable level of reliability alpha is to be 0.60 or more following Nunnally and Bernstein (1994) criterion. After all data were entered into a computer, the SPSS 25 reliability program was performed separately for the study items. Table 2 lists Cronbach's alpha for different WT factors. This table shows that the reliability coefficients ranged from 0.842 to 0.976, indicating that some scales were more reliable than others. Accordingly, the instrument developed for factors contribute to lengthy WT in primary healthcare settings were judged to be reliable. The validity of a questionnaire is concerned with whether a research instrument measures the phenomenon that is the focus of the study. Factor Analysis (FA) was run on all the study items which counted 29 items with Principal Component Analysis (PCA) as the extraction method and Varimax with Kaiser normalization as the rotation method. The aim of using FA is to minimize number of data into a smaller units of measurement variable (Field, 2009). Furthermore, FA helps identify representative items from each group of variables, or in some cases it helps in creating new groups of variables smaller in number or even help in replacing the original group of variables (Hair et al., 2004). According to Hair et al. (2004), if the loadings are 0.50 or greater, the relationship is considered significant. In this study, the PCA method was adopted and a value of the factor loading of 0.50 would be used as the standard cut-off point. The detailed results are listed in Table 3. This table obviously shows that all of the items had high factor loadings greater than 0.50 on all WT factors. Furthermore, the latent root criterion (eigenvalue) is considered the most commonly used method that judges whether items are loading on one factor (Hair et al., 2004). In PCA, the factors which having eigenvalues greater than 1 are considered significant. In this study, all factors with eigenvalues less than 1 are considered insignificant and should be disregarded. The factor analysis revealed that all items of each WT scale formed a single factor according to the rule that the eigenvalues should be greater than 1. Therefore, it can be mentioned that the measures employed in this study are valid and reliable to be used.

4.3 Characteristics of Respondents

The study sample respondents' characteristics have been divided into five main categories, which are gender, age, level of education, current department and years of experience in the primary healthcare center. Descriptive statistical analysis was applied in this part of the questionnaire using the frequency distributions statistical method. The characteristics of respondents is presented in Fig. 2 and it shows that 25.5% (239) out of 938 respondents were male while 74.5% (699) were female. The high percentage of female respondents is due to the fact that the majority of the employees working in the primary healthcare sector were females. The results also show that the age groups of (31-40) and (41-50) accounted for over two-thirds of the sample (74.3%). In relation to the respondents' educational profile, Table 3 shows that 38.5% (361) of 938 respondents hold postgraduate degrees, 43.7% (410) hold bachelor degrees, and 11.9% (112) of them hold diplomas. Concerning the distribution of participants by current department, Table 3 shows that the majority of the respondents 69.5% (652) were working in the clinical affairs department and 30.5% (286) of them were working in the administrative affairs department. Finally, Table 3 shows that the respondents had a good level of experience, where about (51.5%) of them having more than 5 years of experience in their centers.
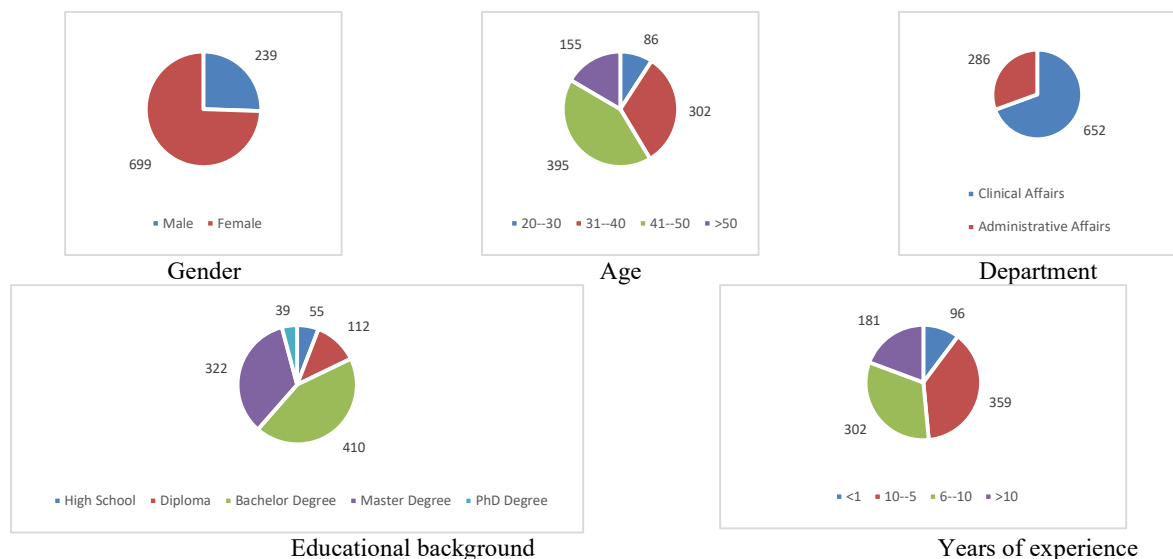

Fig. 2. Characteristics of Employees

4.4 Analyses on employee survey

In a bid to interpret the results, the extracted factors were assigned labels. "Employee commitment and attitude" was the first factor had seven items. The second factor was named by "insufficient work process" and comprised of ten items. The third factor was labeled by "heavy workload" and entailed of four items. The fourth factor was titled by "management and supervision problems" and consisted of four items. The fifth factor was titled by "inadequate facilities" and consisted of four items. A mean analysis was thereafter calculated by getting an average of all the items in individual factors. A mean exceeding 3.0 is an indicator of an existing effect of the factor on the WT of the patients, while a mean below the figure indicates the opposite. A mean higher than 4.0 implies that the employees view the factor as having a great impact on patients' WT. In accordance with the extracted factors in this study, the research conducted analyses, and the findings revealed that employees overwhelmingly agree to the assertion that the factor of heavy workload has a great effect on the waiting problem at the healthcare facility (4.2). The influence was followed by the insufficient work process factor (3.7). The employees also noted that problems related to lack of adequate facilities (3.4) also contributed significantly to the lengthy WT, followed by the management and supervision problems (3.3). Employee commitment and attitude, however, is the only factor which does not indicate the significant effect on WT (2.3). Moreover, heavy workload factor is determined by the targeted employees as the main factor that impact patients' WT (mean 4.2).

Table 3
Average for study sample views towards factors contribution to WT problem

WT Factors	N	Mean	Std. deviation
Employee Commitment and Attitude			
Lack of commitment among employees		2.4	1.074
Lack of motivation among employees		1.7	0.674
Lack of expertise in delivering work		1.9	0.994
Lack of cooperation among staff	938	2.9	1.101
Poor work attitude of colleagues, e.g. conflict		2.5	1.178
Having unresponsive employee to the patients' needs		1.7	0.948
Low skillfulness and knowledge of the staff		2.7	1.059
Overall Mean		2.3	0.385
Insufficient Work Process			
Low speed of the medical staff in handling the patients		3.3	0.823
Problems with the turn-taking system		2.9	0.994
Lack of clarity in some of guidelines and work instructions		3.9	0.567
Poor effective communication system between patients and the healthcare center		3.3	1.251
Poor effective inter-communication system between various levels of employees		3.2	0.788
Long patient journey process		4.3	0.483
Physician starts clinic late		4.4	0.516
Lack of timely presence of physicians	938	3.6	0.699
Physicians' scheduling conflicts		3.7	0.674
Patients do not adhere to appointment time		4.8	0.421
Overall Mean		3.7	0.250
Heavy workload			
The large number of patients		4.8	0.421
Low number of staff including physicians		4.4	0.516
Too many forms to be filled in	938	3.7	0.823
Performing other non-related duties		3.8	0.421
Overall Mean		4.2	0.354
Management and supervision problems			
Management slow in solving problems		3.5	0.527
Lack of supervision		3.1	0.875
Staff having rest hour at the same time	938	3.0	0.942
Lack of staff distribution planning and management		3.6	0.516
Overall Mean		3.3	0.368
Inadequate facilities			
Lack of consultation rooms		3.2	1.135
Waiting lounge is crowded		3.5	0.701
Lack of suitable and sufficient space	938	3.7	0.823
Lack of modern and advanced medical equipment		3.1	0.875
Overall Mean		3.4	0.412

The results denoted to the fact that the employees strongly declare and believe that a large number of patients at the clinic site were the most contributors to the lengthy WT issue (mean 4.8), and a low number of staff in one shift including physicians comes next (mean 3.7) together with staff being asked to perform other non-related duties (Mean 3.8). Too many forms to be filled by centers' staff was also determined by the study sample to provoke the WT obstacle (mean 3.7). Insufficient work process was another factor identified in this study which inject the lengthy WT problem in Dubai primary healthcare centers. The finding denoted that the employees perceive that low commitment shows up by to the appointment to contribute towards lengthy WT (mean 4.8), followed by physician starts clinic late (mean 4.4), and long patient journey process (mean 4.3). Lack of clarity in work instructions and guidance (mean 3.9) was found also mentioned to be one of the contributors to WT issue together with physicians' scheduling conflicts (mean 3.7), lack of timely presence of physicians (mean 3.6) and low speed of the medical staff in handling the patients (mean 3.3), poor effective communication system between patients and the healthcare

center (3.3). Poor effective inter-communication system between various levels of employees was also recognized by the study sample to aggravate the WT problem (mean 3.2). Overall, the average of the unsatisfactory work process cause was realized to be 3.7, which signaled that the employees express this factor to contribute also to the WT concern. Another elicited dimension was inadequate healthcare facilities, which was determined by the study sample to have an impact on the length of patients' WT. The employees perceive problems such as lack of suitable and sufficient space (mean 3.7), waiting lounge is crowded (mean 3.5), lack of consultation rooms (mean 3.2) and lack of modern and advanced medical equipment (mean 3.1) as causer also to the WT problem. The overall mean of such element was to 3.4, which means that the employees indicated that such factor contributed well towards the cause of WT problem. The fourth element elicited as said by the employees that impact the WT issue was employee- supervision problem. The study sample acknowledged the obstacles as not having a good employees planning and management though shifts (mean 3.6), in addition to the lack of management follow up to find a proper solution to such problem (mean 3.5), or scarcity of supervisors and supervision (mean 3.1), and in some situation occurs when some employees tend to have breaks in groups or together (mean 3.0), participate heavily to the WT problem. The overall mean of this factor was found to be 3.3, which indicates that the employees perceive this factor to contribute towards the WT problem. Finally, the finding shows that the mean of employee commitment and attitude items ranged from 1.7 to 2.9 and the general average for this element was 2.7, which denotes that the employees express their feeling that this element do not inject the patient's WT problem.

5. Discussion and conclusion

Although WT is a problem in many healthcare facilities in large number of countries. However, in Dubai, large number of procedure and management activities can be developed to solve WT problem in public healthcare centers. The attempts executed by Dubai health top management in following the WT issue in their public primary healthcare centers is great and much progressing was taken place to move forward to find proper solutions to the WT problem and to find other solutions such as caring more about patients' safety and minimize the medical error levels. The main aim of this study was to assess the average WT in Dubai primary healthcare foundations and identify the main indicators as addressed by healthcare medical service providers which contribute to the patient WT problem. The study at hand indicated that the patient WT across Dubai primary healthcare centers has not achieved the set target criteria established by DHA 2019. The explicit findings from this study was that the patient WT across the targeted clinics in Dubai has achieved agreeable standards of medical practice as compared with other findings of an earlier study which denoted that the WT mean for visit registration was 17 minutes and the consultation WT average 41 minutes (Pillay et al., 2011; Azraii et al., 2017). In Nairobi healthcare services, Wafula (2017) found that the average time noted during several weeks was 55 minutes.

A study by Oche and Adamu (2013) in Nigeria found that 62% waited more than 90 minutes in outpatient department from entry to exit and 38% waited more than 180 minutes. Hasanpoor et al. (2014) in Iran found that the average WT was 161 minutes from the entry stage to the exit stage. Another research conducted by the national physician firm Merritt Hawkins, in the USA in 2016, indicated that in average patients waited approximately 30 days to get appointment. In this study, results pointed out that less than half of the patients were registered within 7 minutes of their coming (45.2%) and the average WT from arrival stage to the registration stage was 11.7 minutes. While more than two third of them (75.3%) waited less than 30 minutes to being seen by a medical doctor and the average consultation WT was 34.2 minutes. 65.9% of patients waited less than 28 days to get their appointment and the average appointment WT was 35 days. There is no definite acceptable WT in healthcare (Azraii et al., 2017). According to Pillay et al. (2011) and Alshurideh et al. (2019a), patients hold different perceptions which powered by both attitudes and beliefs, where their values were predominate which appeared by their behaviors. Evidence shows that some patients segment feel that 30 minutes is a long WT while others do not mind to wait for more than 60 minutes without having agitated feeling (Landi et al., 2018).

Some previous studies have revealed that some patients used to wait for a period of time ranged between 30 and 45 minutes to get the needed treatment (Barlow, 2017; Bielen & Demoulin, 2017; Ahmad et al., 2017). Although the average WT appears to be lengthy in Dubai primary healthcare centers, it can be concluded that it is still within the acceptable rang as compared with the findings of an earlier studies in primary healthcare settings. In accordance with the results released from the analysis of the questionnaire, five factors that impact WT issue were found, namely employee commitment and attitude, inadequate work process and procedures, employee-supervisor relations obstacle, high level of workload and capacity, and poor or unavailability of both medical and administrative facilities. such finding found to contribute to the lengthy of WT problem in primary healthcare settings. High burden of workload as declared by large number of employees found to heavily influence the length of patients' WT. In 2014, the Gulf news reported that the healthcare industry hardly can find talent human because the country does not have enough medical employees to meet the growing number of people. Such problem will grow up especially more new healthcare centers are being planned and the existing centers are also expanding, and large number of medical brands are looking to enter the UAE market and gain some of the local market share. Also, some of the Gulf news reported more about this issue that there is a shortage even in doctors and nurses to serve such sector properly and meet the high medical demand. UAE currently has the lowest ratios for nurses' availability in the region (2.7 for every 1,000 people) across the GCC, exceeded by Saudi Arabia. Long WTs are mostly caused by the presence of more patients who require attendance which then causes overcrowding (Zhu et al., 2012). In this case, more patients often seek treatment, which overwhelms the current number of healthcare practitioners available in a healthcare center. Overcrowding, especially in specialist primary care centers around Dubai, may discourage individuals from visiting primary healthcare centers and specialists may

be overwhelmed by these high numbers (Gardiner & Hussein, 2015). The findings of study indicated a great influence of heavy workload on WT, which is consistent with the previous studies such as Pillay et al. (2011), and Alsharqi et al. (2017). The results of this study are further in contrast with the findings of other studies. The insufficient work process factor together with the management problem and inadequate healthcare facilities factors were found further to be contributory to lengthy WT in many studies (Pillay et al., 2011; Maluwa et al., 2012; Oche & Adamu, 2013; Hasanpoor et al., 2014; Alsharqi et al., 2017; Azraii et al., 2017; Tsui & Fong, 2018; Salloum & Shaalan, 2018a; Salloum & Shaalan, 2018b; Alshurideh, 2018; Salloum & Shaalan, 2018c ;Salloum & Al-Emran, 2018a; Salloum et al., 2018a; Salloum et al., 2018b; Salloum et al., 2018c; Salloum et al., 2019b; Salloum et al., 2019a; Al-Maroof et al., 2019; Alhashmi et al., 2019; Alomari et al., 2018; Alshurideh et al., 2019a; Alshurideh et al., 2019b; Alshurideh et al., 2019c). Furthermore, the finding showed that both of "patients do not come to the appointment time" and "the large number of patients" problems had the greatest influence on patient WT among other WT problems. Therefore, the findings indicate the fact that employees believe more on the effect of large number of patients and low commitment of patients to their appointment than the impact of employee commitment and attitude. In fact, most patients prefer attending the public facilities leading to a high demand in public healthcare facilities, which further escalates the problem of workloads in the public sector.

The situation worsened by the shortage of workers, which can, as a result, contribute to the WT problem in public clinics. This cycle of scarcity and the difficulties associated with it results in stress on the available public healthcare facilities, a fact that was reflected in this research paper. In addition, medical fees between both public and private healthcare centers also contributes to the up normal medical services demand (Pillay et al., 2011). This result is also in contrast with the findings of other studies such as Shahzadi and Annayat (2017) and Alsharqi et al. (2017). Further, patients do not show up to the medical appointments or to the appointed time was clearly determined by healthcare service providers in this study and denoted to affect WT. Notably, increasing no shows and late arrivals at clinics across Dubai are raising concerns over their ripple effects and how they are dealt with. Increasing no shows at clinics leading to losses and deprivation of slots to cases that need them most, however, in UAE, almost 30% of patients do not adhere to their appointments (Gulf news, 2013). Essentially, increasing no shows in a clinic could reflect the fact that patients do not understand the importance of using different systems such as the scheduling system, continuity of care and the significance of follow-up visits (Altamony et al., 2012; Shannak et al., 2012). To add more, the study results denoted that large number of patients come to the healthcare centers to receive routine medical visits or having follow up appointments or coming just for consultations. Timely health services visits should be notified by management and urgent procedures should be taken to empower patients to show up on time. There is a need for primary healthcare sector in Dubai to increase the number of medical and registration staff and expand its healthcare facilities to meet the demands of the patients.

Medical clinics should enforce using and adapting the appointment system for usual medical visits such as follow-up patients and enhance the scheduling systems. General awareness of the importance of follow-up visits should be provided to patients to assure the continuity of care and increase their commitment to the scheduled appointments. Insufficient work process, heavy workload, insufficient or lack of facilities and some management problems may need to be solved immediately by medical top managements and medical policy makers. Notably, more efforts are required by the policy makers to solve the problems in the care delivery system. A scientific approach, such as simulation or modelling techniques amidst others, may be practical antidotes. Finally, this research study has several limitations which should be considered in order to determine possible future research opportunities. Although this study has adopted a cross-sectional design using the survey questionnaire to collect data, and the data collection duration was short, it should be noted that longitudinal research design could be used and a longer supervision or audit process can be done by other studies to have clear evidence of WT causes over time. This study also conducted in 12 different healthcare centers, the immense difference among the structure and operations of the centers could have influenced the results. Moreover, the needed data in this study were taken from employees only through using the survey questionnaire mean as a main tool. Therefore, it is recommended to use different data collection means or using data triangulation methods such as observations and interviews for patients to have a clear picture about the WT issue.

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