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Effects of Waiting List on Treatments of (RCT - Ortho - Surgery) in Qassim Area, Saudi Arabia

Dr. Moayad Ahmed Alomaym Dr. NADIA AWADH M ALUNAZI

Abstract

This study aimed at exploring the effects Waiting List on Treatments of (RCT - Ortho - Surgery) in Qassim Area, Saudi Arabia, as the researchers adopted the methodology of descriptive analytical statistics by conducting a questionnaire of three levels (Patients, Administrative employees and Doctors). The study sample consisted of (20) doctors, (30) administrative employees and (50) patients in four hospitals (King Fahad Specialist Hospital, Central Hospital, King Saud Hospital in Unayzah and Qassim Regional Dental Center) in Qassim Area, Saudi Arabia. The results of the study showed that the paragraph stated (Itis overcrowding in the number of patients who visit the clinics) had the highest approval grades in the three levels of questionnaire (Patients, Administrative employees and Doctors). The study results also concluded that there is an effect of the Waiting List on Treatments of (RCT - Ortho - Surgery) in Qassim Area, Saudi Arabia upon the (doctors, patients and administrative employees) point of view.
Keywords: Waiting List, Waiting Time, Treatments, Qassim Area.

1.1 Introduction

Since the beginning of the 21st century, equal access to treatment has been a key performance indicator of medical care in Saudi Arabia. Many countries that monitor and record waiting times (e.g. Australia, Canada, Denmark, Finland, Ireland, Italy, Netherlands, New Zealand, Norway, Spain, Sweden, United Kingdom) have reported that timely access to treatment has become “a significant health policy concern” (Sutherland & Coyle, 2009).

The rationale for policies to reduce waiting times seems to be similar in systems with relatively long waiting times; delayed access to medical care may threaten equal access to treatment and impose a variety of costs such as welfare losses during the period, more severe treatment due to delayed waiting, work absenteeism, income losses, increased medication and service utilization (Lynch, Campbell, Clark, Dunbar, Goldstein, Peng & Tupper, 2008).

When analysing waiting time phenomenon, some main concepts need clarification. First of all, waiting time should be distinguished from the waiting list. Patients needing an appointment to a hospital are recorded and monitored using the waiting list (HOPE 2004).

Waiting list data can be used to facilitate waiting list (or queue) management and direct policy initiatives (e.g. activity-based funding for hospitals) between regions, hospitals or surgical procedures. By contrast, waiting time for a service is a series of periods for which duration is estimated, fixed or non-fixed (random). Depending on the recording system, waiting time may include the different combinations of time periods. The time between primary care consultation and specialist assessment at an outpatient clinic is called outpatient waiting, as distinct from inpatient waiting , which refers to the time between treatment decision (placement on the waiting list) and admission for an elective procedure (Siciliani & Hurst 2003).

There has been growing concern over the use of waiting list control designs in psychological and behavioral intervention research. While there are ethical advantages to a waiting list design because it allows for the provision of care (if delayed) to research participants who are seeking help, whilst permitting a non-intervention evaluation, it has been noted that such designs may overestimate intervention effects. This is because participants assigned to a waiting list control condition appear to improve less (or not at all) than would be expected for people who are concerned about their behavior and who are taking steps to change (Cunningham, Kypri & McCambridge, 2013).

The results of empirical studies evaluating the effects of waiting list on health status are ambiguous. Some studies have shown that the length of waiting list is not associated with health status, whereas other studies have

reported the opposite results. Inconsistency in empirical findings is partly explained by differences in study design, instruments (disease-specific or generic), sample size and follow-up period (Hirvonen, 2007).

1.2 Problem Statement

This study evaluates the health outcomes of waiting. At the time of the study, a major reform was instigated in the Finnish health care system; from the beginning of March 2018, time-frames for access to non-emergency treatment were set. Therefore, the aim of this study was to investigate the effects Waiting List on Treatments of (RCT - Ortho - Surgery) in Qassim Area, Saudi Arabia by attempting to answer its main question: is there any effect of the Waiting List on Treatments of (RCT - Ortho - Surgery) in Qassim Area?

1.3 Study hypotheses

H10: There will be no statically significance at the level ($\alpha \leq 0.05$) for the effects of the Waiting List on Treatments of (RCT - Ortho - Surgery) in Qassim Area, Saudi Arabia upon the doctors point of view.
H20: There will be no statically significance at the level ($\alpha \leq 0.05$) for the effects of the Waiting List on Treatments of (RCT - Ortho - Surgery) in Qassim Area, Saudi Arabia upon the patients point of view.
H30: There will be no statically significance at the level ($\alpha \leq 0.05$) for the effects of the Waiting List on Treatments of (RCT - Ortho - Surgery) in Qassim Area, Saudi Arabia upon the administrative employees point of view.

1.4 Research Methodology

This study adopted the descriptive survey method as it is one of the most popular methods that have been utilized in the behavior science field (Wright et al., 2010), particularly when analyzing the effects Waiting List on Treatments of (RCT - Ortho - Surgery) in Qassim Area, Saudi Arabia.

1.5 Methods and producers

1.5.1 Questionnaire

The study relied mainly on the self-managed questionnaire designed and prepared by the researchers. The questionnaire consisted of three parts: patients questionnaire with (10) paragraphs, Administrative employees questionnaire with (15) paragraphs and doctors questionnaire with (10) paragraphs. And the questionnaire paragraphs are upon the five-point Likert scale; to measure the variables of the study, and for the purposes of the analysis the weights of the answers were distributed as shown in table 1.

Table (1): The distribution of response options in the questionnaire according to the five-point Likert scale

Option	Class
Strongly Agree	5
Agree	4
NA	3
Disagree	2
Strongly Disagree	1

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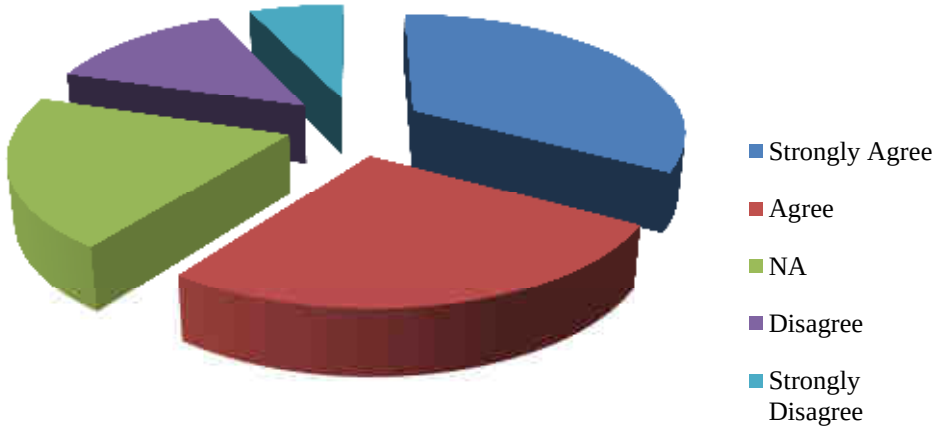

Figure 1: Graphic distribution of the response options in the questionnaire according to the five-point Likert scale.

1.5.2 Questionnaire Reliability

For ensuring the Reliability of the questionnaire, the researchers used the internal consistency coefficient (α) according to the alpha Cronbach equation, and the value of (α) 97%, which is very high when compared with the minimum acceptable of 60% .

The reliability of the study tool was tested by applying a sample of twenty patients, then reapplying after (15) days on the same sample, by which the Pearson correlation coefficient were extracted showing a result of (.921); indicating a high degree of reliability.

1.5.3 Data collection

Data can be obtained from the primary source through the use of questionnaire. Therefore The researchers chose a qualitative methodology by conducting a questionnaire of three levels (Patients, Administrative employees and Doctors).

1.5.4 Data analysis

Statistical methods will be used within the Statistical Package for Social Sciences software (SPSS) for data processing through field study of a sample study in order to answer questions about the study and testing of hypotheses.

1.6 Characteristics of the study sample

The study sample consisted of (100, *n=100*), and the following data represents the distribution characteristics of the study sample.

1.6.1 Doctors' sample

The study sample consisted of (20) doctors from the four hospitals (King Fahad Specialist Hospital, Central Hospital, King Saud Hospital in Unayzah and Qassim Regional Dental Center) in Qassim Area, Saudi Arabia, and the following chart represents the distribution of the doctors study sample.

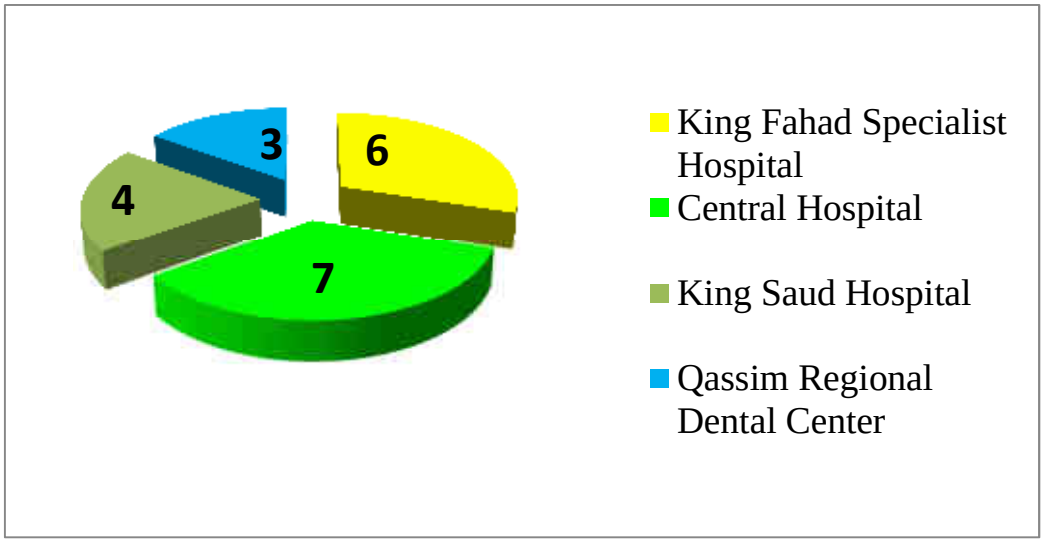

Figure (2): Distributions of the doctors study sample

1.6.2 Administrative employees' sample

The study sample consisted of (30) administrative employees from the four hospitals (King Fahad Specialist Hospital, Central Hospital, King Saud Hospital in Unayzah and Qassim Regional Dental Center) in Qassim Area, Saudi Arabia, and the following chart represents the distribution of the administrative employees study sample.

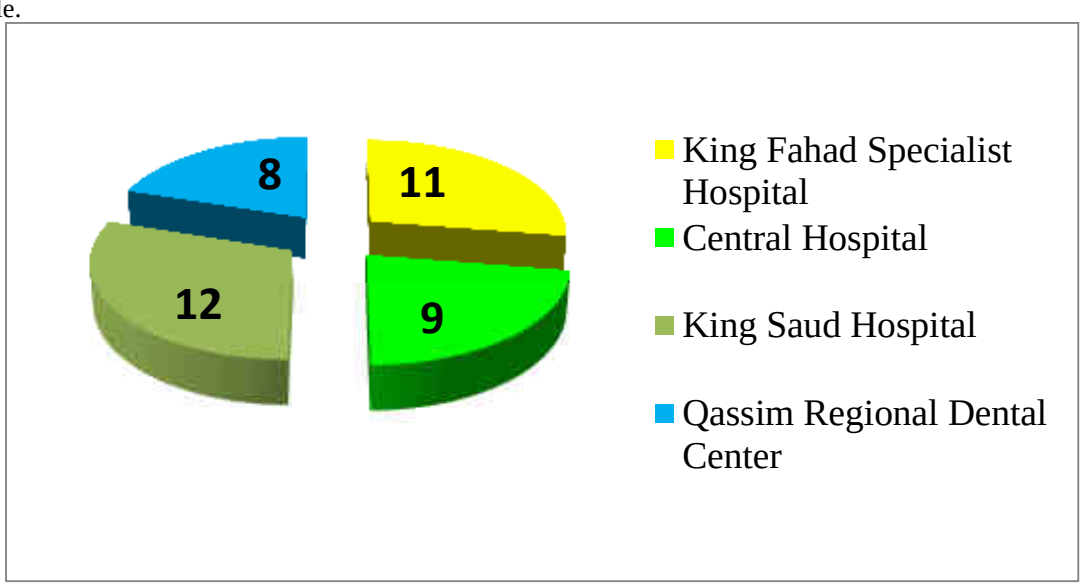

Figure (3): Distributions of the administrative employees study sample

1.6.3 Patients' sample

The study sample consisted of (50) patients from the four hospitals (King Fahad Specialist Hospital, Central Hospital, King Saud Hospital in Unayzah and Qassim Regional Dental Center) in Qassim Area, Saudi Arabia, and the following chart represents the distribution of the patients study sample.

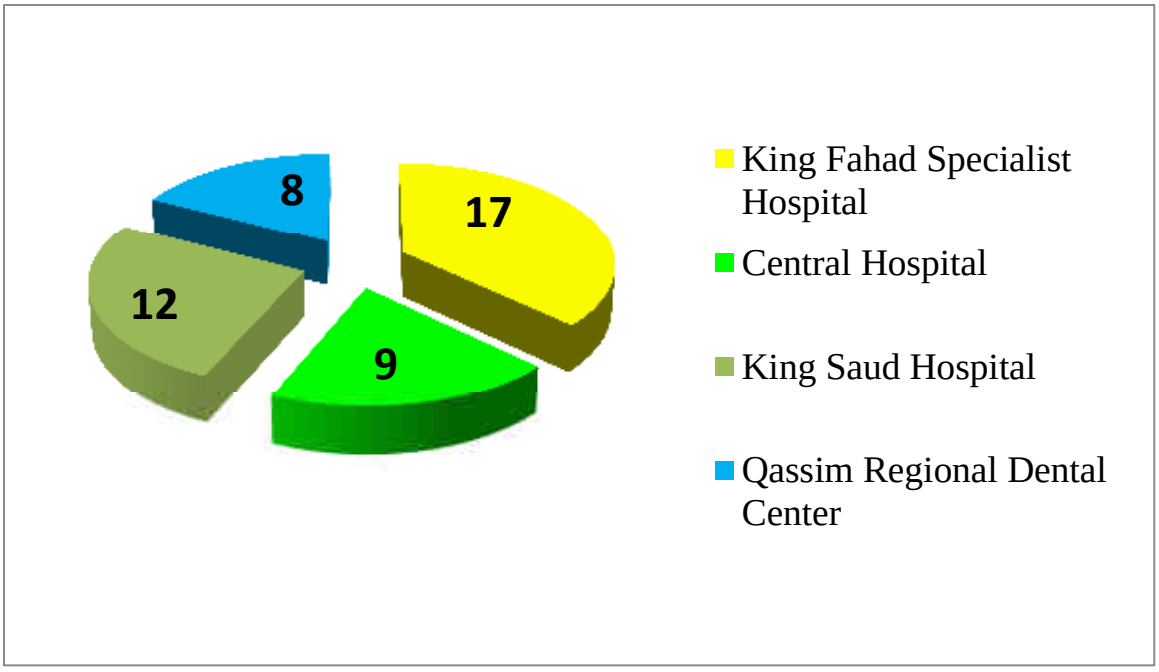

Figure (4): Distributions of the patients study sample

1.7 Discussing the Questionnaire Paragraphs Results

This section aims to display and analyze the arithmetic means and the standard deviations of the respondent's answers to the questionnaire paragraphs, then testing the respondents point of view regarding the questionnaire paragraphs.

1.7.1 Trends toward the doctors responses

In order to compare the arithmetic mean of the responses of the respondents according to the scale of the questionnaire, this adopted the five-point Likert scale.

Results in table (2) shows that the arithmetical means for answers of the study sample that measure the effects of the Waiting List on Treatments of (RCT - Ortho - Surgery) in Qassim Area, Saudi Arabia upon the doctors point of view ranged between (3.34 - 4.02), and the standard deviations ranged between (0.703 - 0.803).

All of these arithmetic means shows the approval of the study sample on the paragraphs that measure the effects of the Waiting List on Treatments of (RCT - Ortho - Surgery) in Qassim Area, Saudi Arabia upon the doctors point of view, since all the arithmetic means are greater than the default mean.

Also noted that the paragraph, which states "Itis overcrowding in the number of patients who visit the clinics" had the highest approval grades; as its arithmetic mean was (4.02) and its standard deviation was (0.803), while the paragraph, which states "the whole waiting time frequency should be a better measure of patients waiting than the average waiting time" had the lowest approval grades; as its arithmetic mean was (3.34) and its standard deviation was (0.711).

Overall, the general average of the arithmetic mean for the answers of the respondents is equivalent to (3.75) and the standard deviation is equivalent to (0.765), which indicates the approval of the respondents upon the scale of these paragraphs was high, and that their attitudes were positive.

Table (2): Arithmetic means and standard deviations for the members of the study sample answers measuring the attitudes of the doctors responses.

NO	Statement	A M	S D	Rank	Grade
1	Itis overcrowding in the number of patients who visit the clinics	4.02	0.803	1	High
2	Only doctors are the ones who set the time for the treatments processes on the waiting lists	3.93	0.727	3	High
3	Increasing numbers of patients makes the doctor give appointments at longer intervals	3.91	0.758	4	High
4	Standardized methods for measuring and reporting waiting times should be developed	3.98	0.703	2	High
5	The whole waiting time from initial referral to the specialized care through to treatment (whole “care process”) should be kept under review	3.69	0.762	6	High
6	The waiting list must contain sufficient data about each patient to aid their subsequent selection for admission and treatment	3.84	0.851	5	High
7	the whole waiting time frequency should be a better measure of patients waiting than the average waiting time	3.34	0.711	10	Medium
8	High quality information systems and datasets are crucial to enable the management and monitoring of waiting lists and waiting times	3.53	0.798	9	Medium
9	Arrangements for the monitoring of waiting list and waiting time information should focus on the time waited by patients, more than total number of patients waiting.	3.65	0.779	7	Medium
10	the consultation may take several appointments and investigations, therefore the time from the moment examination starts until examination finishes is considered the waiting time.	3.61	0.754	8	Medium
General average		3.75	0.765	-	High

1.7.2 Trends toward the administrative employees responses

In order to compare the arithmetic mean of the responses of the respondents according to the scale of the questionnaire, this adopted the five-point Likert scale.

Table (3): Arithmetic means and standard deviations for the members of the study sample answers measuring the attitudes of the administrative employees responses.

NO	Statement	A M	S D	Rank	Grade
1	Appointments for patients are determined according to the doctor's recommendation	3.76	0.754	5	High
2	Itis overcrowding in the number of patients who visit the clinics	4.12	0.762	1	Medium
3	When booking appointments for patients of the same priority, preference is given to patients with longer waiting periods	3.55	0.810	11	Medium
4	There is very limited information about the validity of the queue time for use in assessments and comparison	3.99	0.701	3	High
5	Different types of factors are often involved in determining "time" such as the interval between referral and evaluation by a specialist	3.43	0.729	13	High
6	Often different types of factors are involved in determining the "time" between the first medical consultation and the decision to take the desired action	4.04	0.713	2	High
7	Standard methods for measuring waiting periods should be developed and documented	3.65	0.764	8	Medium
8	Full waiting time from initial referral to specialist care to treatment (the entire "care process" should be under review	3.74	0.755	6	High
9	The waiting list includes the total waiting time from the moment the hospital receives the referral until the scan begins	3.62	0.719	9	Medium
10	The time calculation starts on the queue from the start of the scan until the scan is complete (and the scan may take several dates).	3.60	0.703	10	Medium
11	The waiting list must contain sufficient data for each patient to assist in their subsequent selection for admission and treatment	3.84	0.801	4	High
12	Arrangements for waiting list monitoring and waiting time information should focus on the time expected by patients, more than the total number of patients	3.35	0.713	14	Medium
13	Total waiting time should be a better measure for patients waiting more than the average waiting time	3.50	0.794	12	Medium
14	Validation of routine queues should include checking that patients on waiting lists still need treatment and that their details and statements are correct	3.69	0.772	7	High
15	Information systems and medical records are of high quality critical to enable management and control of queues and waiting times	3.66	0.750	8	Medium
General average		3.70	0.749	-	High

Results in table (3) shows that the arithmetical means for answers of the study sample that measure the effects of the Waiting List on Treatments of (RCT - Ortho - Surgery) in Qassim Area, Saudi Arabia upon the administrative employees point of view ranged between (3.35 - 4.12), and the standard deviations ranged between (0.701 - 0.810).

All of these arithmetic means shows the approval of the study sample on the paragraphs that measure the effects of the Waiting List on Treatments of (RCT - Ortho - Surgery) in Qassim Area, Saudi Arabia upon the administrative employees point of view, since all the arithmetic means are greater than the default mean.
Also noted that the paragraph, which states "Itis overcrowding in the number of patients who visit the clinics" had the highest approval grades; as its arithmetic mean was (4.12) and its standard deviation was (0.672), while the paragraph, which states "Arrangements for waiting list monitoring and waiting time information should focus

on the time expected by patients, more than the total number of patients" had the lowest approval grades; as its arithmetic mean was (3.35) and its standard deviation was (0.713).

Overall, the general average of the arithmetic mean for the answers of the respondents is equivalent to (3.70) and the standard deviation is equivalent to (0.749), which indicates the approval of the respondents upon the scale of these paragraphs was high, and that their attitudes were positive.

1.7.3 Trends toward the patients' responses

In order to compare the arithmetic mean of the responses of the respondents according to the scale of the questionnaire, this adopted the five-point Likert scale.

Table (4): Arithmetic means and standard deviations for the members of the study sample answers measuring the attitudes of the patients responses.

NO	Statement	A M	S D	Rank	Grade
1	Itis overcrowding in the number of patients who visit the clinics	4.04	0.719	1	High
2	Waiting periods between first screening and treatment initiation are long	3.40	0.790	9	Medium
3	After the appointment is set, the postponement is sometimes delayed despite the patient's attendance	3.55	0.785	5	Medium
4	Appointments for treatment are determined according to clear and fair priorities without external intervention	3.71	0.744	3	High
5	There is a conflict between the appointment of the specialist and the appointments imposed by the hospital administration	3.25	0.768	10	Medium
6	The procedure between initial screening and subsequent tests and initiation of treatment is time-spaced, making the patient suffer from a financial cost during the reviews	3.98	0.766	2	High
7	The procedure between the initial examination and subsequent tests and the start of treatment is spaced chronologically, which makes the patient suffer from health effects such as pain and deterioration of health during the reviews	3.66	0.771	4	Medium
8	Waiting lists take into account patients with difficult personal circumstances	3.43	0.771	7	Medium
9	Waiting lists take into consideration patients who have a difficult medical condition	3.41	0.724	8	Medium
10	Patients who are missing appointments for social reasons are removed from the waiting list	3.47	0.705	6	Medium
General average		3.56	0.748	-	Medium

Results in table (4) shows that the arithmetical means for answers of the study sample that measure the effects of the Waiting List on Treatments of (RCT - Ortho - Surgery) in Qassim Area, Saudi Arabia upon the patients point of view ranged between (3.25 - 4.04), and the standard deviations ranged between (0.705 - 0.790).

All of these arithmetic means shows the approval of the study sample on the paragraphs that measure the effects of the Waiting List on Treatments of (RCT - Ortho - Surgery) in Qassim Area, Saudi Arabia upon the patients point of view, since all the arithmetic means are greater than the default mean.

Also noted that the paragraph, which states "Itis overcrowding in the number of patients who visit the clinics" had the highest approval grades; as its arithmetic mean was (4.04) and its standard deviation was (0.719), while the paragraph, which states "There is a conflict between the appointment of the specialist and the appointments imposed by the hospital administration" had the lowest approval grades; as its arithmetic mean was (3.25) and its standard deviation was (0.768).

Overall, the general average of the arithmetic mean for the answers of the respondents is equivalent to (3.56) and the standard deviation is equivalent to (0.748), which indicates the approval of the respondents upon the scale of these paragraphs was Medium, and that their attitudes were positive.

1.8 Testing the Study Hypotheses

In order to test the hypotheses of the study, of statistical methods were used with the appropriate tests to the nature of the variables and assumptions, using the simple linear regression and the multiple linear regression analysis so as to put the base of acceptances or rejections the hypothesis as follows:

1. If the calculated value of (T) is higher than the tabulated (T) value at the level of ($\alpha = 0.05$), the result will be rejection for the null or the zero hypothesis (H0) and the alternative hypothesis (H1) will be accepted, which indicates the statistically significant relationship effect.
2. If the calculated value of (T) is less than the tabulated (T) value at the level of ($\alpha = 0.05$), the result will be accepted for the null or the zero hypothesis (H0) and the alternative hypothesis (H1) will be rejected, which indicates no statistically significant relationship effect.
3. If the calculated value of (F) is higher than the tabulated (F) value at the level of ($\alpha = 0.05$), the result will be rejection for the null or the zero hypothesis (H0) and the alternative hypothesis (H1) will be accepted, which indicates the statistically significant relationship effect.
4. If the calculated value of (F) is less than the tabulated (F) value at the level of ($\alpha = 0.05$), the result will be accepted for the null or the zero hypothesis (H0) and the alternative hypothesis (H1) will be rejected, which indicates no statistically significant relationship effect.

1.8.1 Testing the first hypothesis

H10: There will be no statically significance at the level ($\alpha \leq 0.05$) for the effects of the Waiting List on Treatments of (RCT - Ortho - Surgery) in Qassim Area, Saudi Arabia upon the doctors point of view.

It is noted from simple regression analysis results described in table (5) that there is an effect of the of the Waiting List on Treatments of (RCT - Ortho - Surgery) in Qassim Area, Saudi Arabia upon the doctors point of view.

Table (5): testing results of the first hypothesis

Significant (T)	Calculated (T)	Tabulated (T)	(R) Square	(R)
0.000	**7.841**	**1.960**	**0.197**	**0.444**

This statistically significant effect at the statistically significant level ($\alpha \leq 0.05$)**,** as the calculated (T) value is (7.841), which is higher than tabulated (T) value, is in line with the simple regression analysis results that explain the (0.197%) variance in measuring the effect.

According to that the null hypothesis (H10) will be rejected and the alternative hypothesis will be accepted, that means there an effects of the Waiting List on Treatments of (RCT - Ortho - Surgery) in Qassim Area, Saudi Arabia upon the doctors point of view.

1.8.2 Testing the second hypothesis

H20: There will be no statically significance at the level ($\alpha \leq 0.05$) for the effects of the Waiting List on Treatments of (RCT - Ortho - Surgery) in Qassim Area, Saudi Arabia upon the patients point of view.

It is noted from simple regression analysis results described in table (6) that there is an effect that there is an effect of the of the Waiting List on Treatments of (RCT - Ortho - Surgery) in Qassim Area, Saudi Arabia upon the patients point of view.

Table (6): testing results of the second hypothesis

Significant (T)	Calculated (T)	Tabulated (T)	(R) Square	(R)
0.000	**12.633**	**1.960**	**0.390**	**0.624**

This statistically significant effect at the statistically significant level ($\alpha \leq 0.05$)**,** as the calculated (T) value is (12.633), which is higher than tabulated (T) value, is in line with the simple regression analysis results that explain the (39.0%) variance in measuring the effect.

According to that the null hypothesis (H20) will be rejected and the alternative hypothesis will be accepted, that means there an effects of the Waiting List on Treatments of (RCT - Ortho - Surgery) in Qassim Area, Saudi Arabia upon the patients point of view.

1.8.3 Testing the third hypothesis

H30: There will be no statically significance at the level ($\alpha \leq 0.05$) for the effects of the Waiting List on Treatments of (RCT - Ortho - Surgery) in Qassim Area, Saudi Arabia upon the administrative employees point of view.

It is noted from simple regression analysis results described in table (7) that there is an effect that there is an effect of the of the Waiting List on Treatments of (RCT - Ortho - Surgery) in Qassim Area, Saudi Arabia upon the administrative employees point of view.

Table (7): testing results of the third hypothesis

Significant (T)	Calculated (T)	Tabulated (T)	(R) Square	(R)
0.000	**11.00**	**1.960**	**0.326**	**0.571**

This statistically significant effect at the statistically significant level ($\alpha \leq 0.05$)**,** as the calculated (T) value is (11.00), which is higher than tabulated (T) value, is in line with the simple regression analysis results that explain the (32.64%) variance in measuring the effect.

According to that the null hypothesis (H30) will be rejected and the alternative hypothesis will be accepted, that means there an effects of the Waiting List on Treatments of (RCT - Ortho - Surgery) in Qassim Area, Saudi Arabia upon the administrative employees point of view.

1.9 Conclusion

The results of the study showed that the paragraph stated (Itis overcrowding in the number of patients who visit the clinics) had the highest approval grades in the three levels of questionnaire (Patients, Administrative employees and Doctors); which indicates an overcrowded waiting lists in the four hospitals, and of course an effect on the treatment processes too. The study results also showed that there is an effect of the Waiting List on Treatments of (RCT - Ortho - Surgery) in Qassim Area, Saudi Arabia upon the (doctors, patients and administrative employees) point of view.

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