

# Knowledge, Attitude, and Practice toward Medical Research among Physicians in Taif Military Hospital 2018

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**Abstract** Health research coaching is a vital element of medical education and a vital exercise to assist develop physician research skills. Each doctor ought to try to contribute to the generation of proof by conducting research. A review of literature showed that the information concerning data, knowledge, attitude, practice towards medical analysis among resident doctors following post graduate studies is lacking. This best proof in creating choices for individual patient care or health service delivery. Current best proof is that the use of up-to-date info from relevant and valid research concerning the consequences of various sorts of clinical care, the potential for hurt from exposure to the actual agent, the accuracy of diagnostic tests, and also the prophetic power of prognostic factors. There's considerable concern that physicians haven't incorporated them into their practice. Study recommend that a 'knowledge–attitude–behavior' sequence is very important in modifying physician practice patterns. To address this, we examined physicians' knowledge of, attitudes, practical toward medical research among physicians in Taif military hospital 2018. Research is commonly viewed because the corner stone of scientific progress. It's a systematic process based on scientific method that carries with it testing hypothesis, observation and measuring, systematic analysis of information, and drawing a legitimate conclusion. It is felt that the existing level of knowledge, attitude and practice among physicians who have already conducted/are conducting at least one research study should be evaluated. Hence, the present study was carried out to assess the research-related knowledge, attitude, and practices of Taif military hospital physicians. **Aim of the study:** To assess knowledge, practice and attitude of physicians related to medical research at Taif military hospitals in 2018. **Method:** This is a cross sectional study conducted at Taif military hospitals in 2018 was carried out on sample size (n) would be (194). In order to account for non-response and achieve more generalizable results, the investigator will increase the sample size up to (200). Stratified sampling technique will be used then simple random. **Results:** The majority of our participants not attend a training program, and the majority of our study weak practices, Knowledge toward medical research were constitutes (64.2%, 50.5%) while the majority is high attitude toward medical research (77.9%). A significant positive correlation between Attitude, Knowledge and Practices toward medical research Where  $r= 0.233$  and  $p$ -value  $<0.001$ . **Conclusion:** In the present study, it had been found that postgraduate students had unsatisfying knowledge of health research. They positive attitude towards research, however they didn't remodel their data, but they failed to transform their knowledge and attitude in actual practices due to lack of time and lack of research curriculum. There is need to encourage postgraduate students to carry out research through provision of technical assistance and essential infrastructure during their postgraduate training program.

**Keywords:** attitude, physicians, knowledge, postgraduate students, practice, medical research

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## 1. Introduction

Reviewing the literature reveals that view studies have been conducted to assess knowledge, practice and attitude of physicians' related to medical research. No local studies

in Saudi Arabia specially at Taif area has been done in the same topic. Research coaching may be a very important constituent of medical education, and a necessary exercise to assist in developing physicians' analysis skills. Several skills as essential thinking and communication skills are immensely increased as a results of participation in research [1].

Research is often viewed as the corner stone of scientific progress. It is a systemic process based on scientific method that consist of testing hypothesis, careful observation and measurement, systematic evaluation of data, and drawing a valid conclusion. [2] Hence, adequate levels of knowledge and reasoning skills and development of a positive attitude are crucial to carrying out the research. [3] There is a need for all health care workers to appreciate the value of research for best and evidence based practice and overcome the berries facing application of scientific research. Barriers to research may include insufficient physician interest, limited physician time, paucity of mentors, limited faculty time, lack of physician research skills, absence of a research curriculum and inadequate funding [4]. Research is a very crucial component within the advancement and improvement of health care services provided to the general public. Exposure to health analysis coaching has been documented as a crucial activity in fashionable undergrad and postgraduate medical education [5]. Research is an extremely crucial element for improving the health care and plays a crucial role in the medical development. Becoming a consumer of research should be a goal for all physicians. [6] Previous studies in numerous countries have tried to gage postgraduate and graduate' attitudes, perceive students and physicians practices, and verify students 'and physician's barriers and motivation toward medical research in undergraduates [7]. the rapidly evolving medical science of today necessitates that physicians and surgeons keep abreast with the latest developments [8]. Research is a neglected but extremely important component in the development of medical science including health care. Training for research skills and experience of research early in career has been associated with continued professional academic work and may help inform residents' career decisions [9]. Every doctor should strive to contribute to the generation of evidence by conducting research. Review of literature showed that the data regarding knowledge, attitude, practice towards medical research among postgraduate students pursuing postgraduate studies is lacking. [10] Training in research methodology is an important but neglected part of medical education curriculum, which needs to be paid more attention. Efforts must be done to investigate the barriers facing researches and action must be done to relieve it. [11,12] it has been reportable that medical students' involvement in research activity would permit them to realize research skills, so rising patient's care. Hence, adequate levels of data and reasoning skills and development of a positive angle are crucial to carrying out the research. [13] It would be almost impossible to catch up with the changes occurring in diseases and their determinants without research. It is essential that health care providers, especially doctors, possess adequate knowledge and skill of conducting research. [14]. Research experience is also invaluable to the physician's evidence-based practice as it imparts skills such as literature search, collecting, and analyzing data and critical appraisal of evidence. Training for research skills and experience of research early in career has been associated with continued professional academic work and may help physician's career progress. The medical education system must incorporate research methodology as a part of the curriculum [9]. every physician should strive to contribute to the generation of

evidence by conducting research. For carrying out a research study adequate knowledge, practical skills and development of right attitude are crucial. Research activity of physicians is important as it promises better clinical care, critical reasoning, lifelong learning and future research activity. [5,15] Another research done by Satav and his colleagues in 2015 to assess medical research related knowledge, attitude and practice of doctors. They found that the concept of research hypothesis was known to 48% of the physicians. Also, they found that 85% of the physicians were aware of the procedure to obtain informed consent, 82% of them agreed that patient outcome improves with continued medical research and 56% of physicians were interested in conducting research in future. They also found that 60% had made paper/poster presentations and only 15% had publications. Study concluded that physicians have a fair knowledge about research. They also showed a positive attitude toward research, but they fail to transform their knowledge and attitude into actual practices. [16] Research methodology is a process of deciding study design, making questionnaire, data collection, analysis, interpretation, and assessment procedures conducted in a planned manner in order to find solutions to a problem. [17] In addition, benefits of medical research are manifold It helps promote evidence based medicine and quality patient care, provide skills for lifelong learning, enhance resident's analytic skills and develop critical thinking. [18] Ministry of Health (MOH) Oman had established the Department of Research and Studies under the Directorate General of Planning since 1991 which draws the research policy and setting the research priorities from the "fifth 5-Year Plan for Health Development, 1996-2000" and onward. The research policy aims to spread of research There is very little published from Oman regarding the perception and attitude to participate in research. Oman has a very strong primary care set up and one of the best in the world. [19]

### 1.1. Objective

Objectives: To determine the knowledge, attitude, and practice among physicians in Saudi Arabia toward medical research.

### 1.2. Specific Objective

- To determine the knowledge of physicians related to medical research at Taif military hospitals in 2018
- To recognize the attitude of physicians related to medical research at Taif military hospitals in 2018
- To describe the medical research practices among physicians at Taif military hospitals in 2018
- To compare between the knowledge, practice and attitude regarding medical research among various physician's specialty and degree.

### 1.3. Research Problem

There were lack related to attitude, practice, and knowledge of physicians in Saudi Arabia toward medical research. Other Saudi Arabian universities had produced data of such purpose but among medical student

## 1.4. The Aim of the Study

To assess knowledge, practice and attitude of physicians related to medical research at Taif military hospitals in 2018.

## 2. Materials and Methods

### 2.1. Research Design

This is a cross sectional study. Stratified sampling technique will be used then simple random.

### 2.2. Study Setting

This study will be conducted at Taif military hospitals in 2018, Armed Forces Hospital, Al-Hada, Saudi Arabia the current study conducted in this modern, acute care facility located 10 miles to the north west of Taif, opened in 1980. Extensive medical and nursing services are offered including open heart surgery and kidney transplantation

### 2.3. Sampling Technique

All physicians working at Taif military hospitals at the period of data collection will divide to 3 strata (consultant, specialist, resident) and will take from each strata according to its percentage the sample size by simple random.

### 2.4. Sample Size

Using EPI info version 7, the study sample size will be as: source population size of the physicians are 390 would be assumed. Accordingly, a sample size (n) would be 194. In order to account for non-response and achieve more generalizable results, the investigator will increase the sample size up to 200.

### 2.5. Study Population

The study population consists of physicians working at Taif military hospitals in 2018 Armed Forces Hospital, Al-Hada, Saudi Arabia: including 390 physician, the majority of them are western educated and board certified.

**Inclusion criteria:** Willing and able to participate in the study.

**Exclusion criteria:** No specific exclusion criteria.

**Data collection method:** Self-administered questionnaire will be given to all participants.

**Questionnaire:** An English self-administered questionnaire will be used. The questionnaire will do by the researcher after reviewing of current, related national and international related literature. It consisted of four sections.

- The first section aimed to assess the sociodemographic characteristic of the participants (e.g., sex, age, specialty, previous attendance of training programs about medical research).
- The second section will cover the physician practices regarding medical research (e.g. Number of researches done, number of previously published researches).

- The third section addresses the physician knowledge regarding medical research such as components of medical research, component of abstract, average number of words in abstract, parts of methodology.
- The fourth section of the questionnaire involves their attitude regarding medical research (e.g. Physician should participate in research, conduction of research is difficult, and researches improve patient care).

### 2.6. Questionnaire Validity

The researcher distributed the Questionnaire to three consultants of different specialties (family medicine, community medicine, and administration) who have enough experience and interest in the subject and some amendments were done, accordingly.

**Pilot study:** A pilot study will be done on 14 physicians who meet the study's eligibility criteria. The pilot study will mainly help examine both the instrument's content validity and construct validity issues, alongside with other needed information, as follows: test the understanding of the instruments' questions, undergo necessary changes and modifications, accordingly.

### 2.7. Ethical Consideration

- Necessary approval by the Regional ethical committee and the Research Ethics Committee of the Armed Forces Hospitals in Taif, shall be obtained prior to the study.
- A written consent will be obtained from Taif military hospitals administration. The aim of the study will be explained to them. Feedback about the results will be sent to these organizations.
- Consent will be obtained from each participant to voluntarily participate in the study.
- Data will be treated confidentially and will be used only for the purpose of research.

### 2.8. Expected Study Limitation

- We expect to meet a situation where some participants may not be so willing to respond fully to the questionnaire's items, jeopardizing the study's response rate, and hence the results' generalizability. On our part, we will first explain to participants the importance of the study, clarify to them the exact questionnaire aim and contents, in order to remove their worries and assure confidentiality. Such action may well enhance their responses to the questionnaire's encompassed questions.
- Short time and limited resources.

### 2.9. Data Analysis

Data will be collected and verified, variables coded and then entered to a MS program with adequate backup. Both categorical variables (i.e., closed-ended questions offered fixed responses), and continuous variables (open ended questions the answers to which require quantities) will be handled. Descriptive statistics, e.g., number, proportions,

cumulative proportions, mean and standard deviation, etc. will be displayed, as appropriate. Analytically, parametric techniques, e.g., t-test and ANOVA, will be attempted, as applicable, especially analyzing normally distributed variables. Otherwise, non-parametric alternatives, e.g., Man Whitney U test and ANOVA or  $\chi^2$  test of independence, would be used, as necessary. The Statistical Package for Social Sciences (SPSS) software for MS- version-16 will be used for the analysis. All tests will be conducted at level of significance  $\alpha=0.05$ ; results with  $p$ -values $<0.05$  will be considered “statistically significant.”

**Budget:** Self-funded.

### 3. Result

**Table 1. Socio-demographic data**

	N	%
<b>Sex</b>		
Female	72	37.9
Male	118	62.1
<b>Age</b>		
Less than 40	148	77.9
More than 40	42	22.1
<b>Nationality</b>		
Saudi	168	88.4
Non-Saudi	22	11.6
<b>Degree</b>		
Resident in residency program	115	60.5
GP	16	8.4
Specialist	38	20.0
Consultant	21	11.1
<b>Specialty</b>		
Family medicine	58	30.5
Medicine	32	16.8
Ob&gyne	33	17.4
Pediatric	20	10.5
Surgery	26	13.7
Others	21	11.1

Table 1 show that is: The majority of our study are male gender in our study was (62.1%) while female were (37.9%) of participant. In our study, the majority of participant age Less than 40 years were constitutes (77.9 %) while the age More than 40 year represents (22.1%). In our study, the majority of participant Saudi

was constitutes (88.4 %) while the Non- Saudi represents (11.6%). The majority of our participants were at Resident in residency program were constitutes (60.5 %) followed by specialist were constitutes (20.0 %) while consultant were constitutes (11.1%) the GP were constitutes (8.4%). In our study the majority of participant were Family medicine (30.5%) while the Ob & Gyne were (17.4 %) the Medicine was (16.8 %) and the Surgery were (13.7%) while the pediatric were constitutes (10.5) and the others were constitutes (11.1).

**Table 2. Assessment of practices toward medical research**

	N	%
Have you attended a training programs or workshops regarding medical research before?		
No	99	52.1
Yes	91	47.9
How many researches you did before?		
1	52	27.4
>1	60	31.6
None	78	41.1
Do you previously present a research in conference?		
No	151	79.5
Yes	39	20.5
Do you have any publication in journal?		
No	118	62.1
Yes	72	37.9
Are you reading journal regularly?		
No	177	93.2
Yes	13	6.8

Table 2 show that is the majority of our participants not attend a training program they were 52.1%. While the attend a training programs were 47.9%. The majority of our participants non did any research before were constitutes (41.1). While do a research less >1 were constitutes (31.6%). Followed by do one a research were constitutes (27.4%). In our participants the majority not presented a research in conference were constitutes (79.5%). Followed by present a research in conference were constitutes (20.5 %). The majority of our participants not publication in journal were constitute (62.1%). Followed by yes you publication in journal were constitute (37.9%). The majority of our participants answer not reading journal regularly were constitute (93.2%). Followed by yes reading the journal constituted (6.8%).

**Table 3. Assessment of attitude regarding medical research**

	Disagree		No opinion		Agree		% of agreement	Rank	Chi-square	
	N	%	N	%	N	%			X <sup>2</sup>	P-value
Physicians should participate in researches?	76	40.0	8	4.2	106	55.8	71.93%	8	79.621	0.000
Physicians can do a research and writing a scientific paper?	79	41.6	15	7.9	96	50.5	69.65%	9	57.611	0.000
Doing a research is difficult?	38	20.0	29	15.3	123	64.7	81.58%	7	84.958	0.000
Training programs on scientific writing is important?	2	1.1	89	46.8	99	52.1	83.68%	6	89.884	0.000
feel confident in interpreting and writing a scientific paper?	76	40.0	66	34.7	48	25.3	61.75%	10	6.358	0.042
Doing a research give you better job position?	5	2.6	14	7.4	171	90.0	95.79%	4	275.189	0.000
Doing a research helps in choosing a specialty?	109	57.4	13	6.8	68	35.8	59.47%	11	73.274	0.000
Research is essential to improve health care?	0	0	4	2.1	186	97.9	99.30%	1	174.337	0.000
Research promote critical thinking ability?	0	0	6	3.2	184	96.8	98.95%	2	166.758	0.000
Research promote communication skills?	13	6.8	11	5.8	166	87.4	93.51%	5	249.674	0.000
Research improve independent learning ability?	5	2.6	8	4.2	177	93.2	96.84%	3	306.074	0.000

Table 3 show that is:

**Physicians should participate in researches?**

Show that is a significant relation between attitudes regarding medical research and participate in researches increase in percent of agreement were (71.93%) and Chi-square X2 (79.621) and P-value less than < 0.05. while the agree of participate in research were (55.8%), but disagree were (40%) and no opinion were 4.2% the Rank in the (8).

**Physicians can do a research and writing a scientific paper?**

Show that is a significant relation between attitudes regarding medical research and can Physicians do a research and writing a scientific paper Where there was an (increasing in percent of agreement) were constitutes (50.5%) while Chi-square (57.611) and P-valueless 0.000 and agree about Physicians can do a research& writing a scientific paper were (50.5%) and disagree about Physicians can do a research& writing a scientific paper were (41.6%), While the Rank (9).

**Doing a research is difficult?**

Show that is a significant relation between attitudes regarding medical research and Doing a research is difficult (increasing in percent of agreement) were constitutes (81.58%) while Chi-square (84.958) and P-valueless 0.000 and agree about Physicians do a research is difficult (64.7%) and disagree about Physicians do a research is difficult were (20.0%) and non-opinion were(15.3%) While the Rank (7).

**Training programs on scientific writing is important?**

Show that is a significant relation between attitudes regarding medical research and Training programs on scientific writing is important (increasing in percent of agreement) were constitutes (83.68%) while Chi-square (89.884) and P-valueless 0.000 and agree about Training programs is important (52.1%) and non-opinion were (46.8%) While the Rank (6).

**Feel confident in interpreting and writing a scientific paper?**

Show that is a significant relation between attitudes regarding medical research and confident in interpreting and writing a scientific paper (increasing in percent of agreement) were constitutes (61.75 %) while Chi-square (6.358) and P-valueless 0.000 but the disagree confident in interpreting and writing a scientific paper were (40.0) while non-opinion were (34.7%) but agree about confident in interpreting and writing a scientific paper were constitutes (25.3%) and While the Rank (10).

**Doing a research give you better job position?**

Show that is a significant relation between attitudes regarding medical research and doing a research give you better job position (increasing in percent of agreement) were constitutes (95.79 %) while Chi-square (275.189) and P-valueless 0.000 but the agree Doing a research give you better job position were (90.0%) while non-opinion were (7.4%) While the Rank (4).

**Doing a research helps in choosing a specialty?**

Show that is a significant relation between attitudes regarding medical research and Doing a research helps in choosing a specialty (increasing in percent of agreement) were constitutes (59.47 %) while Chi-square (73.274) and P-valueless 0.000 but the disagree Doing a research helps in choosing a specialty were (57.4%) while agree were (35.8%) While the Rank (11).

**Research is essential to improve health care?**

Show that is a significant relation between attitudes regarding medical research and Research is essential to improve health care (increasing in percent of agreement) were constitutes (99.30 %) while Chi-square (174.337) and P-valueless 0.000 but the agree Research is essential to improve health care were (97.9%) While the Rank (1).

**Researches promote critical thinking ability?**

Show that is a significant relation between attitudes regarding medical research and Researches promote critical thinking ability (increasing in percent of agreement) were constitutes (98.95 %) while Chi-square (166.758) and P-valueless 0.000 but the agree Research is essential to improve health care were (96.8%) While the Rank (2).

**Researches promote communication skills?**

Show that is a significant relation between attitudes regarding medical research and Research promote communication skills (increasing in percent of agreement) were constitutes (93.51 %) while Chi-square (166.758) and P-valueless 0.000 but the agree Research is essential to improve health care were (87.4%) While the Rank (5).

**Research improves independent learning ability?**

Show that is a significant relation between attitudes regarding medical research and Research improve independent learning ability (increasing in percent of agreement) were constitutes (96.84%) while Chi-square (306.074%) and P-valueless 0.000 but the agree Research is essential to improve health care were (93.2%) While the Rank (3).

Table 4. Knowledge toward medical research

	N	%
Systematic process based on scientific method that consists of testing hypotheses, careful observation and measurement. (Definition of...)		
I don't know.	15	7.9
Research.	107	56.3
Evidence based medicine (EBM).	64	33.7
Literature review.	4	2.1
A published research article will normally contain two sections NOT found in a proposal. These are:		
I don't know.	76	40.0
Introduction and references.	2	1.1
Method and discussion.	51	26.8
Results and discussion.	57	30.0
Results and method.	4	2.1
Portion of the population that has been selected to represent the population of interest :		
I don't know.	23	12.1
Randomization	3	1.6
Sample size	27	14.2
Study sample	137	72.1
Used to check the clarity and feasibility of tools?		
I don't know.	47	24.7
Data collection.	59	31.1
Data interpretation.	6	3.2
Pilot study.	77	40.5
Sampling.	1	.5
Transforming a research question into a clear statement about a cause and effect relationship results in :		
I don't know.	64	33.7
Hypothesis	120	63.2
Inductive statement	4	2.1
Theory	2	1.1

**Systematic process based on scientific method that consists of testing hypotheses, careful observation and measurement. (Definition of...)**

The majority of our study correct answer research were constitutes (56.3%) while Evidence based medicine (EBM) were constitutes (33.7%) but the answer I don't know were constitutes (7.9%)

**A published research article will normally contain two sections NOT found in a proposal. These are:**

The majority of our study answer I don't know were constitutes (40.0%) while the correct answer Results and discussion were constitutes (30.0%) while Method and discussion were constitutes (26.8%) .

**Portion of the population that has been selected to represent the population of interest**

The majority of our study correct answer Study sample were constitutes (72.1%) while the answer I don't know were constitutes (12.1%) while the sample size were constitutes (14.2) but Randomization were constitutes (1.6%).

**Used to check the clarity and feasibility of tools**

The majority of our study correct answer pilot Study were constitutes (40.5%) while the answer data collection were constitutes (31.1%) while I don't know where constitutes (24.7) but Data interpretation. were constitutes (3.2%).

**Transforming a research question into a clear statement about a cause and effect relationship results in:**

The majority of our study correct answer hypothesis were constitutes (63.2%) while the answer I don't know where constitutes (33.7%) while Inductive statement where constitutes (2.1) but theory were constitutes (1.1%).

**Table 5. Knowledge toward medical research**

	N	%
What are the three most common subheadings in the method section ?		
I don't know.	108	56.8
Instruments, measurements, and data analysis.	14	7.4
Participants, data analysis, and results.	4	2.1
Participants, instruments, and data analysis.	64	33.7
In a study,		
I don't know.	17	8.9
simple random sampling	55	28.9
Stratified sampling	4	2.1
Systemic random sampling	114	60.0
Documentation unusual medical occurrences that can represent the first clue in the identification of new disease or adverse effect of exposures is:		
I don't know.	39	20.5
Case report.	104	54.7
Case-control study.	2	1.1
Cohort study.	45	23.7
Process of analyzing data using statistical techniques in order to draw conclusions that support or reject the hypothesis, or answer the research question:		
I don't know.	58	30.5
Data collection.	28	14.7
Data analysis.	91	47.9
All of the above.	13	6.8
The part of a manuscript that contains a very brief summary of the research is called:		
I don't know.	44	23.2
Abstract.	110	57.9
Method.	35	18.4
Results.	1	.5

**What are the three most common subheadings in the method section?**

The majority of our study answer I don't know were constitutes (56.8%)

While answer Participants, instruments, and data analysis were constitutes (33.7%) but the answer correct Instruments, measurements, and data analysis were constitutes (7.4%) and answer Participants, data analysis, and results were constitutes (2.1%).

**In a study**

The majority of our study answer correct Systemic random sampling were constitutes (60.0%) While answer simple random sampling were constitutes (28.9%) but the answer I don't know were constitutes (8.9%) and answer simple random sampling were constitutes (2.1%).

**Documentation unusual medical occurrences that can represent the first clue in the identification of new disease or adverse effect of exposures is**

The majority of our study answer correct case report were constitutes (54.7%) While answer cohort study were constitutes (23.7%) but the answer I don't know were constitutes (20.5%) and case-control study were constitutes (2.1%).

**Process of analyzing data using statistical techniques in order to draw conclusions that support or reject the hypothesis, or answer the research question**

The majority of our study answer correct Data analysis were constitutes (47.9%) While answer I don't know were constitutes (30.5%) but the answer Data collection were constitutes (14.7%) and answer All of the above were constitutes (6.8%).

**The part of a manuscript that contains a very brief summary of the research is called**

The majority of our study answer correct abstract were constitutes (57.9%)

While answer I don't know were constitutes (23.2%) but the answer method were constitutes (18.4%) and answer resultswere constitutes (0.5%)

**Table 6. Assessment of practices toward medical research**

Practices		
	N	%
Weak	122	64.2
Average	37	19.5
High	31	16.3
Total	190	100.0
Range	0-6	
Mean±SD	2.037±1.906	

Table 6 the majority of our study weak practices were constitutes (64.2%) While the average were constitutes (19.5%) but the high practices were constitutes (16.3%) and the Range is (0-6) while Mean±SD (2.037±1.906).

**Table 7. Assessment of attitude regarding medical research**

Attitude		
	N	%
Weak	0	0
Average	42	22.1
High	148	77.9
Total	190	100.0
Range	19-33	
Mean±SD	27.374±2.925	

Table 7 shoe that is the majority of our study high attitude were constitutes (77.9%) While the average of attitude were constitutes (22.1%) but weak were constitutes (0%) and the Range is(19-33) while Mean±SD (27.374±2.925).

Table 8. Assessment of Knowledge regarding medical research

Knowledge		
	N	%
Weak	96	50.5
Average	55	28.9
High	39	20.5
Total	190	100.0
Range	0-9	
Mean±SD	4.868±2.341	

Table 8 show that is the majority of our study weak Knowledge were constitutes (50.5%) While the average of Knowledge were constitutes (28.9%) but high were constitutes (20.5%) and the Range is (0-9) while Mean±SD (4.868±2.341).

Table 9. The correlation between Attitude, Knowledge and Practices, attitude toward medical research

Correlations			
		Practices	Attitude
Attitude	r	0.617	
	P-value	<0.001*	
Knowledge	r	0.233	0.343
	P-value	<0.001*	<0.001*

Table 9 Show that is a significant positive correlation between Attitude and Practices toward medical research where r= 0.617 and p-value <0.001 and a significant positive correlation between Knowledge and practices toward medical research Where r= 0.233 and p-value <0.001 and a significant positive correlation between Correlation between Knowledge and practices toward medical research were r= 0.343 and p-value <0.001.

Table 10 show that is no significant relation between practices and gender were T= -.443- and p-value 0.659 and Mean ± SD (2.085±1.946) in male but female (1.958±1.850). A significant relation between Practices and age (increase in the less than 40) where F= 3.050 and

Table 10. The relation between Socio-demographic data and Practices

	N	Practices		F or T	ANOVA or T-test	
		Mean	± SD		Test value	P-value
Gender	Female	72	1.958 ± 1.850	T	-.443-	0.659
	Male	118	2.085 ± 1.946			
Age	Less than 40	148	2.257 ± 1.906	F	3.050	0.003*
	More than 40	42	1.262 ± 1.712			
Nationality	Saudi	168	2.179 ± 1.965	T	2.887	0.004*
	Non-Saudi	22	0.955 ± 0.785			
Degree	Resident in residency program	115	2.409 ± 2.052	F	6.828	<0.001*
	GP	16	0.375 ± 0.500			
	Specialist	38	1.579 ± 1.177			
	Consultant	21	2.095 ± 2.047			
Specialty	family medicine	58	3.190 ± 1.572	F	8.973	<0.001*
	Medicine	32	1.250 ± 1.503			
	ob&gyne	33	1.606 ± 1.968			
	Pediatric	20	1.400 ± 1.698			
	Surgery	26	1.154 ± 1.515			
	Others	21	2.429 ± 2.293			

p-value <0.003% and Mean ± SD (2.257±1.906) But age more than 40 years Mean ± SD (1.262±1.712). A significant relation between practices and Nationality (Increase in Saudi) were T=2.887 were p-value 0.004 and Mean ± SD 2.179±1.965 in Saudi but non Saudi Mean ± SD 0.955±0.785.

**Degree**

Show that is a significant relations between practices and degree (increase in Consultant) were F= 6.828 were p-value <0.001 Mean ± SD 2.095±2.047 in consultant and flowed by Specialist were Mean ± SD 1.579±1.177 but the GP Were Mean ± SD 0.375± 0.500.

**Specialty**

Show that a significant relation between practices and Specialty (Increase in the family medicine) were F=8.973 were p-value <0.001 Mean ± SD 3.190±1.572 in family medicine and others specialist Mean ± SD 2.429±2.293 flowed by ob & gyne Mean ± SD1 606±1.968 while Pediatric Mean ± SD 1.400±1.698 and Medicine Mean ± SD 1.250±1.503 while Surgery were Mean ± SD 1.154±1.515.

Table 11 show that is no significant relation between Attitude and gender where T= -1.121-and p-value 0.264 and Mean ± SD (27.559±2.972) in male but female (27.06 ±2.840). No significant relation between attitude and age where F= -.975- and p-value 0.331. A significant relation between attitude and Nationality (Increase in Saudi) were T=-2.425 were p-value 0.018 and Mean ± SD (28.136±1.246) in non-Saudi but Saudi Mean ± SD (27.274± 3.066). A significant relations between attitude and degree (increase in Consultant) were F= 9.409 Where p-value <0.001 Mean ± SD (27.790±2.429) in consultant and flowed by Specialist were Mean ± SD (27.790±2.429) but the Resident in residency program Mean ± SD (27.148 ±3.180) while GP Were Mean ± SD (25.000±0.516). A significant relation between attitude and Specialty (Increase in the family medicine) were F=4.950 were p-value <0.001 Mean ±SD (28.862±3.159) in family medicine flowed by ob & gyne Mean ± SD (27.000±2.739) and Others specialist Mean ± SD (26.952±2.397) while Pediatric Mean±SD (26.650±2.621)and Surgery Mean ±SD (26.538±2.387) while Medicine were Mean ± SD (26.469±2.71).

Table 11. The relation between Socio-demographic details and Attitude

		N	Attitude		F or T	ANOVA or T-test	
			Mean	SD		Test value	P-value
Gender	Female	72	27.069	± 2.840	T	-1.121-	0.264
	Male	118	27.559	± 2.972			
Age	Less than 40	148	27.264	± 3.085	F	-.975-	0.331
	More than 40	42	27.762	± 2.261			
Nationality	Saudi	168	27.274	± 3.066	T	-2.425	0.018*
	Non-Saudi	22	28.136	± 1.246			
Degree	Resident in residency program	115	27.148	± 3.180	F	9.409	<0.001*
	GP	16	25.000	± 0.516			
	Specialist	38	27.790	± 2.429			
	Consultant	21	29.667	± 1.197			
Specialty	Family medicine	58	28.862	± 3.159	F	4.950	<0.001*
	Medicine	32	26.469	± 2.712			
	ob&gyne	33	27.000	± 2.739			
	Pediatric	20	26.650	± 2.621			
	Surgery	26	26.538	± 2.387			
	Others	21	26.952	± 2.397			

Table 12. The relation between Socio-demographic details and knowledge

		N	Knowledge		F or T	ANOVA or T-test	
			Mean	SD		Test value	P-value
Gender	Female	72	5.042	± 2.045	T	0.796	0.427
	Male	118	4.763	± 2.507			
Age	Less than 40	148	4.946	± 2.512	F	0.856	0.393
	More than 40	42	4.595	± 1.594			
Nationality	Saudi	168	4.792	± 2.329	T	-1.251-	0.213
	Non-Saudi	22	5.455	± 2.405			
Degree	Resident in residency program	115	4.461	± 2.352	F	6.053	0.001*
	GP	16	4.375	± 2.419			
	Specialist	38	6.211	± 1.933			
	Consultant	21	5.048	± 2.085			
Specialty	Family medicine	58	4.241	± 2.416	F	3.690	0.003*
	Medicine	32	5.313	± 2.023			
	Ob&gyne	33	5.697	± 1.992			
	Pediatric	20	5.250	± 2.337			
	Surgery	26	5.385	± 2.192			
	Others	21	3.619	± 2.559			

Table 12 show that is no significant relation between knowledge and gender where (T= 0.796) and p-value (0.427) and Mean±SD (5.042±2.045) in female but male (27.06±2.840). No significant relation between knowledge and age where F= 0.856 and p-value 0.393. No significant relation between knowledge and Nationality were T=1.251 where p-value 0.213 and Mean ± SD (5.455±2.405) in non-Saudi but Saudi Mean ± SD 4.792±2.329. A significant relations between knowledge and degree (increase in Specialist) were F= 6.053 where p-value <0.001 Mean±SD 6.211±1.933 in and Specialist flowed by Consultant were Mean±SD (5.048±2.085) but the Resident in residency program Mean±SD (4.461±2.352) while GP Were Mean±SD (4.375±2.419). A significant relation between knowledge and Specialty (Increase in the Ob& gyne) were F= 3.690 were p-value <0.001 Mean ±SD (5.697±1.992) in Ob& gyne followed by Surgery Mean±SD (5.385±2.192 and Medicine Mean ± SD (5.313±2.023) while Pediatric Mean±SD (5.250±2.337) and Family medicine Mean±SD (4.241±2.416) while Others were Mean±SD (3.619±2.559).

#### 4. Discussion

Research is an extremely crucial element in advancement and improvement of health care services provided to the public. (20) An adequate level of knowledge, positive attitude, and reasoning skills play an important role in carrying out research. (21) The aim of the study :To assess knowledge, practice and attitude of physicians related to medical research at Taif military hospitals in 2018.out of a sample size (n) is (194) of physicians at Taif military hospitals in 2018, majority of our study are male gender in our study was (118) while female were (72) of participant. In our study the majority of participant were Family medicine (58) in our study positive attitude toward medical research have been shown in about (77.9%) and high attitude Shows the detailed data Table 7. In the present study, the Research is essential to improve health care in come the first Rank & % of agreement (99.33%) shows the detailed data Table 3. The present study has also revealed a direct relationship between practices toward medical research among

physicians. The majority of our study weak practices were constitutes (64.2%) Shows the detailed data [Table 6](#).

In addition, Correlation between attitude and practice. Show that is a significant positive correlation between Attitude and Practices toward medical research Where  $r = 0.617$  and  $p\text{-value} < 0.001$ . Correlation between Knowledge and practices. Show that is a significant positive correlation between Knowledge and practices toward medical research Where  $r = 0.233$  and  $p\text{-value} < 0.001$ , Correlation between Knowledge and attitude. Show that is a significant positive correlation between Correlation between Knowledge and practices toward medical research were  $r = 0.343$  and  $p\text{-value} < 0.001$ . (shows the detailed data [Table 9](#)). In addition relation between Socio-demographic data and Practices Gender Show that is no significant relation between practices and gender while is a significant relation between Practices and age, Nationality, degree, and Specialty were  $F = 8.973$  were  $p\text{-value} < 0.001$  Mean  $\pm$  SD  $3.190 \pm 1.572$  in family medicine and others specialist Mean  $\pm$  SD ( $2.429 \pm 2.293$ ) flowed by ob & gyne.

Mean  $\pm$  SD1  $606 \pm 1.968$  while Pediatric Mean  $\pm$  SD ( $1.400 \pm 1.698$ ) and Medicine Mean  $\pm$  SD ( $1.250 \pm 1.503$ ) while Surgery were Mean  $\pm$  SD ( $1.154 \pm 1.515$ ) (shows the detailed data [Table 10](#)).

## 5. Conclusions

Physicians have inadequate knowledge, but have positive attitudes towards health research. Postgraduate training and research facilities at the institution need to undergo major transformation in order to encourage meaningful research by postgraduate trainees. There is need to encourage postgraduate students to carry out research through provision of technical assistance and essential infrastructure during their postgraduate training program. students in university need more training regarding clinical research, particularly in biostatistics. They also require administrative assistance. the quality of clinical research could be improved if training in clinical research methodology and biostatistics were provided, and if greater assistance in the preparation of study documents requested by the institutional Independent Ethics Committee were available. Moreover, primary care must be linked to academic institution and there should be regular training courses available for primary care health care workers. Arab world trying to improve research culture and publishing good quality articles. Postgraduate students have inadequate knowledge, but have positive attitudes towards health research. Postgraduate training and research facilities at the institution need to undergo major transformation in order to encourage meaningful research by postgraduate trainees.

Many research sites conduct clinical trials in compliance with Good Clinical Practice GCP standards finds that residents have a fair knowledge about research. They also showed a positive attitude toward research, but they fail to transform their knowledge and attitude into actual practices.

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