ASSESSMENT OF THE KNOWLEDGE TOWARD MEDICAL RESEARCH AMONG HEALTH CARE WORKER IN THE PRIMARY HEALTH CARE AT MAKKAH CITY AT SAUDI ARABIA 2019

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Abstract:

Background

Health research training is an essential component of medical education and a vital exercise to help develop physician research skills Research experience is 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 inform residents' career decisions. The medical education system in India does not incorporate research methodology as a part of the curriculum. It is seen that research programs in medical colleges get the lowest priority. There are a numbers of reasons, including lack of funding and manpower resources, responsible for the poor quality in research-oriented medical education. Research is a systematic process to achieve new knowledge, science or invention by the use standard methods. Health research has an impact on the prevention, diagnosis and treatment of diseases and especially on health care programs policy.

Aim of the study:To assessment of the Knowledge toward medical research among health care worker in the primary health care at Makkah 2019.

Method: This is a cross sectional studyconducted at primary health care at Makkahbetween August 2019 and October 2019 was carried out on sample size (190) would be. In order to account for non-response and achieve more generalizable results, the investigator will increase the sample size up to (200) . sampling technique has be used then simple random.

Results:majority of our study weak Knowledge were constitutes (42.0%). While the average of Knowledge were constitutes (39.0%) but high were constitutes (19.0%) and the Range is (1-10) while Mean ±SD (5.113±2.011). Also a significant correlation between Knowledge toward medical research were P-value<0.001

Conclusion:In the present study, it had been found that postgraduate physicians in the primary health care had unsatisfying knowledge of health research. they'd positive attitude towards research, however they didn't remodel their data , but they failed to transform their knowledge 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.

Introduction:

Research experience is 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.[1] 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 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 Makkah area has been done in the same topic .[2]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 . 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, carful observation and measurement, systematic evaluation of data, and drawing a valid conclusion .[3]

Hence, adequate levels of knowledge and reasoning skills and development of a positive attitude are crucial to carrying out the research.[4] 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 [5] .   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.[6] 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.[7]

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.[8]The rapidly evolving medical science of today necessitates that physicians and surgeons keep abreast with the latest developments.[9] . 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[10]

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 .[11]

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. [12]

1.2 Literature Review

However, two studies that were carried out in Canada and Pakistan reflected a contrasting attitude of postgraduate students that a majority of time in residency should be spent learning the clinical aspects of their specialty and they were unwilling to sacrifice personal time for research.[13,14]

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. [9,15] 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. [8,16]

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. [17,18]

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. [19,20]

1.3 Rationale:

There were lack related to knowledge of health care worker in Saudi Arabia toward medical research. Other Saudi Arabian universities had produced data of such purpose but among medical student unfortunately, the number of worldwide health care worker scientists' has been noticed to decline recently. This has generated much interest in developing programs for early exposure to research in medical schools in order to encourage students' research activity and fill up the void of physician scientists'.

Objective:

To assessment of the Knowledge toward medical research among health care worker in the primary health care at Makkah 2019.

Specific objective:

- To describe the medical research practices among health care worker at in the primary health care at Makkah 2019.

The aim of the study:

To assessment of the Knowledge toward medical research among health care worker in the primary health care at Makkah 2019.

Materials and Methods:

Research Design : This is a cross sectional study.sampling technique has be used then simple random.

Study setting:

The study will be carried out in the city of Makkah Al-Mokarramah Makkah is the holiest spot on Earth. It is the birthplace of the Prophet Mohammad and the principal place of the pilgrims to perform Umrah and Hajj. It is located in the western area in Kingdom of Saudi Arabia and called the Holy Capital. Contains a population around 2 million. This study was conducted in Makkah primary health care centers at saudi Arabia, and it reflects a diversified demographic profile with a considerable portion of the population comes from rural descent, while others come from an urban one. This difference translates into biological, socioeconomic and lifestyle differences in the Makkah population

Sampling technique:

health care worker working at Makkah primary health care centers at the period of data collection will divide to 3 strata (consultant, specialist, resident, nurses, other) and will take from each strata according to its percentage the sample size by simple random.

Sample size:

Using EPI info version 24, the study sample size will be as: source population size of the physicians are 200 would be assumed. Accordingly, a sample size (n) would be 200. In order to account for non-response and achieve more generalizable results, the investigator will increase the sample size up to 200.

Study population:

The study population consists of health care worker working at primary health care at Makkah 2019: including 200 physician, nursing, other 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 has be given to all participants .

Questionnaire:

An English self-administered questionnaire has be used. The questionnaire has 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 socio demographic 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).

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 health care worker 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.

Ethical consideration:

- Necessary approval by the Regional ethical committee and the Research Ethics Committee obtained prior to the study.
- A written consent will be obtained 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.

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 resource

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 χ^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.

Result

Table (1) distribution of the Socio-demographic datato participant in the study assessment the Knowledge toward medical research among health care worker in the primary health care (n-200)

	N	%
Age		
<30	66	33
30-40.	90	45
40-50.	32	16
>50	12	6
Gender		
Female	112	56
Male	88	44
Nationality		
Saudi	166	83
Non-Saudi	34	17
Job Title		
Nurse	116	58
Doctor	46	23
Other	38	19
Years of experience		
<5	84	42
5-10.	24	12
10-15.	40	20
>15.	52	26

The majority of our study are female gender were (56.0%) while female was (37.9%) of participant. In our study, the majority of participant age from (30- 40) years were constitutes (45.0 %) while the age <30 were 33.0%). More than participant Saudi were (83.0%). The majority of our participants were nurse in residency program were constitutes (58.0 %), regarding the years of experience the majority <5 were (42.0 %)

Table (2) distribution of the 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.	24	12
Research.	92	46
Evidence based medicine (EBM).	70	35
Literature review.	14	7
A published research article will normally contain two sections NOT found in a proposal. These are :		
I don't know.	76	38
Introduction and references.	4	2
Method and discussion.	44	22
Results and discussion.	52	26
Results and method.	24	12
Portion of the population that has been selected to represent the population of interest :		
I don't know.	22	11
Randomization	6	3
Sample size	32	16
Study sample	140	70
Used to check the clarity and feasibility of tools?		
I don't know.	58	29
Data collection.	60	30
Data interpretation.	8	4
Pilot study.	72	36
Sampling.	2	1
Transforming a research question into a clear statement about a cause and effect relationship results in :		
I don't know.	58	29
Hypothesis	120	60
Inductive statement	6	3
Theory	16	8

Table 2 show the systematic process based on scientific method that consists of testing hypotheses, careful observation and measurement, the majority of our study correct answer research were constitutes (46.0%) while Evidence based medicine (EBM) were constitutes (35.0%) but the answer I don't know were constitutes (12.0%). Also regarding a published research article will normally contain two sections NOT found in a proposal.

The majority of our study answer I don't know were constitutes (38.0%) while the correct answer Results and discussion were constitutes (26.0%). Regarding the 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 (70.0%) while the answer I don't know were constitutes (11.0%) while the sample size were constitutes (16.0) but Randomization were constitutes (3.0%)

Regarding used to check the clarity and feasibility of toolsthe majority of our study correct answer pilot Study were constitutes (36.0%) while the answer data collection were constitutes (30.0%) while I don't know where constitutes (29.0) but Data interpretation. were constitutes (1.0%). 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 (60.0%) while the answer I don't know where constitutes (29.0%) while Inductive statement where constitutes (3.0) but theory were constitutes (8.0%) .

Table (3) distribution of Knowledge toward medical research

Knowledge toward medical research	N	%
What are the three most common subheadings in the method section ?		
I don't know.	102	51
Instruments, measurements, and data analysis.	16	8
Participants, data analysis, and results.	6	3
Participants, instruments, and data analysis.	76	38
In a study,		
I don't know.	20	10
simple random sampling	46	23
Stratified sampling	6	3
Systemic random sampling	128	64
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.	38	19
case report.	92	46
case-control study.	6	3
cohort study.	64	32
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.	56	28
Data collection.	32	16
Data analysis.	86	43
All of the above.	26	13
The part of a manuscript that contains a very brief summary of the research is called:		
I don't know.	42	21
Abstract.	118	59
Method.	26	13
Results.	14	7

Regarding What are the three most common subheadings in the method section?
The majority of our study answer I don't know were constitutes (51.0%). While answer Participants, instruments, and data analysis were constituting (38.0%) but the answer correct Instruments, measurements, and data analysis were constituting (8.0%)and answer Participants, data analysis, and results were constitutes (3.0%).

In a study. The majority of our study answer correct Systemic random sampling were constitutes (64.0%) While answer simple random sampling were constitutes (23.0%) but the answer I don't know were constitutes(10.0%)and answer simple random sampling were constitutes (3.0%) .

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 (46.0%) While answer cohort study were constitutes (32.0%) but the answer I don't know were constitutes(19.0%)and case-control study were constitutes (3.0%) .

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 constituting (43.0%)While answer I don't know were constitutes (28.0%) but the answer Data collection were constituting (16.0%)and answer All of the above were constitutes (13.0%).

Table (4)distribution of assessment of Knowledge regarding medical toward medical research

Knowledge				Score	
		N	%	Range	Mean±SD
Weak		84	42	1-10.	5.113±2.011
Average		78	39		
High		38	19		
Total		200	100		
Chi-square	X²	18.760			
	P-value	<0.001*			

The majority of our study weak Knowledge were constitutes (42.0%). While the average of Knowledge were constitutes (39.0%) but high were constitutes (19.0%) and the Range is (1-10) while Mean ±SD (5.113±2.011). Also a significant correlation between Knowledge toward medical research were P-value<0.001.

Figure (1) distribution of assessment of Knowledge regarding medical toward medical research
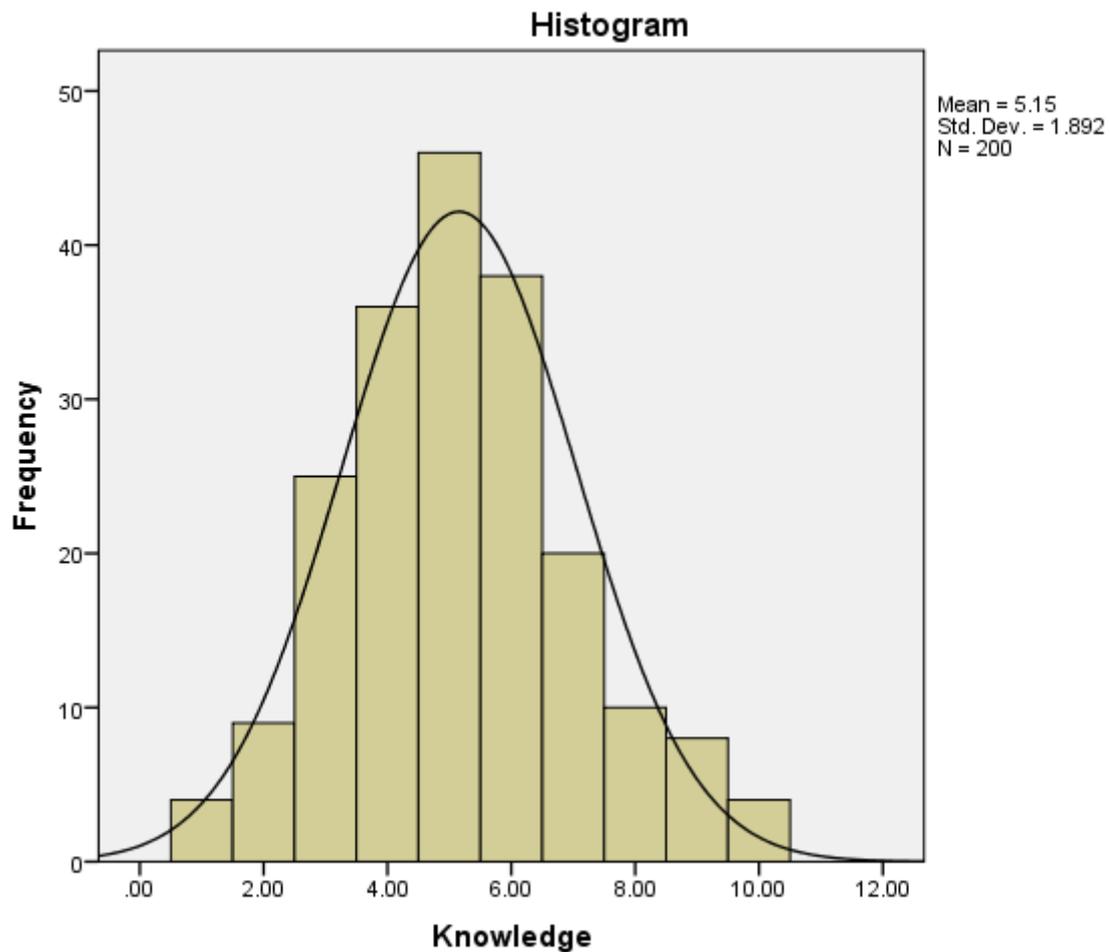
Table (5)distribution of correlation between Socio-demographic details and knowledge

		N	Knowledge			F or T	ANOVA or T-test	
			Mean	±	SD		Test value	P-value
Age	**<30**	66	4.076	±	1.867	F	62.970	<0.001*
	30-40	90	4.800	±	0.914			
	40-50	32	7.094	±	1.254			
	>50	12	8.583	±	1.084			
Gender	**Female**	112	5.098	±	1.908	T	-0.478	0.633
	Male	88	5.227	±	1.880			
Nationality	**Saudi**	166	5.084	±	1.870	T	-1.168	0.244
	Non-Saudi	34	5.500	±	1.989			
Job Title	**Other**	38	4.164	±	1.474	F	55.743	<0.001*
	Doctor	44	5.409	±	1.141			
	Nurse	116	6.474	±	1.268			
Years of experience	**<5**	108	4.120	±	1.527	T	82.627	<0.001*
	10-15.	40	5.350	±	0.483			
	>15.	52	7.154	±	1.589			

Regarding age show that is a significant relation between knowledge and age (increase in the less than 50) where F= 62.970 and p-value= 0.001 % and Mean ± SD (8.583±1.084), regarding gender show that is no significant relation between knowledge

and gender (increase in male) were(T= -0.478) and p-value(0.633) and Mean ± SD (5.227±1.880) in but nationality show that is no significant relation between knowledge and Nationality (Increase in non-Saudi) were T= -1.168 were p-value 0.244 and Mean ± SD (5.500±1.989) while job title show that is a significant relations between knowledge and Job Title (increase in nurse) were F= 55.743 were p-value <0.001Mean ± SD 6.211±1.933 in and Consultantwere Mean ± SD 5.048±2.085.regarding years of experience show that a significant relation between knowledge and Years of experience (Increase in>15) were T= 82.627 were p-value <0.001

Figure (2) distribution of correlation between Socio-demographic details and knowledge
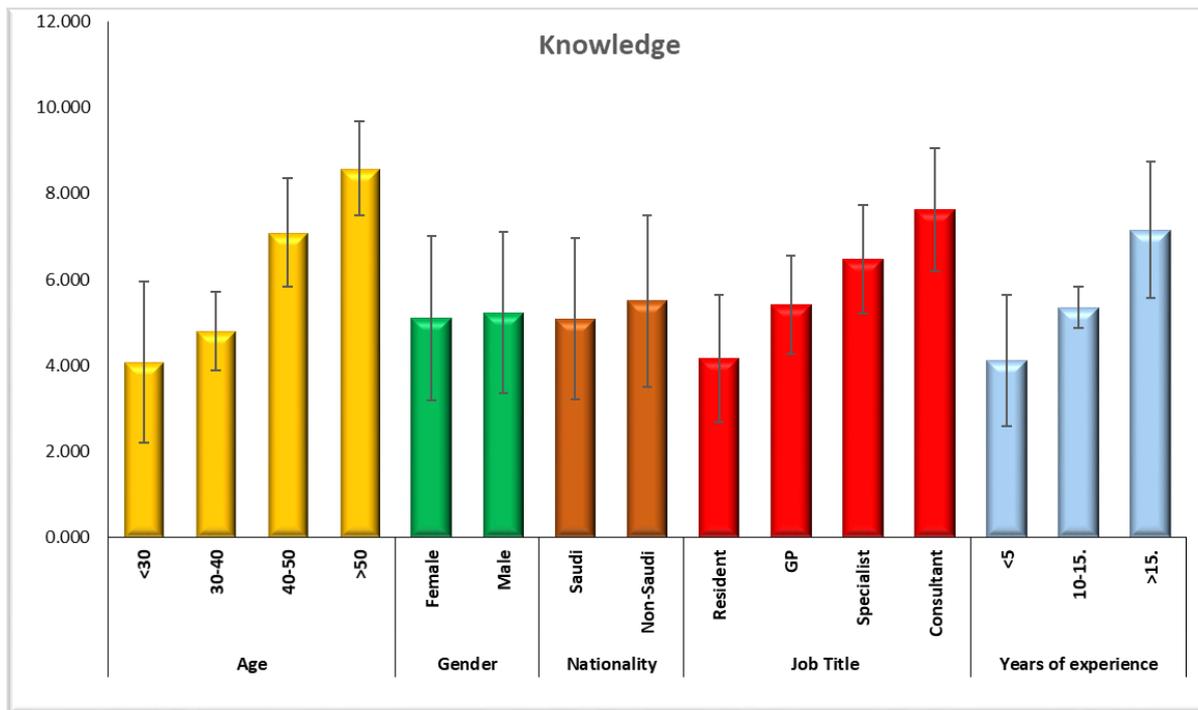
Discussion

Research is an extremely crucial element in advancement and improvement of health care services provided to the public.[20,21] An adequate level of knowledge, positive attitude, and reasoning skills play an important role in carrying out research.[22,23] The aim of the study :To assessment of the Knowledge toward medical research among health care workerin the primary health care at Makkah 2019 is (200) of physicians at primary health care at Makkah 2019 , majority of our study are male gender in our study was while female were of participant .In our study the majority of participant in our study positive attitude toward medical research have been shown in about and high attitude.The present study has also revealed a direct relationship between practice toward medical research among health care worker. The majority of our study weak practices .

Correlation between Knowledge, show that is a significant positive correlation between Correlation between Knowledge and practices toward medical research were p-value <0.001.

In addition relation between Socio-demographic data and Practices

Gender Show that is Regarding age show that is a significant relation between knowledge and age (increase in the less than 50) where F= 62.970 and p-value= 0.001 % and Mean ± SD (8.583±1.084), regarding gender show that is no significant relation between knowledge and gender (increase in male) were(T= -0.478) and p-value(0.633) and Mean ± SD (5.227±1.880) in but nationality show that is no significant relation between knowledge and Nationality (Increase in non-Saudi) were T= -1.168 were p-value 0.244 and Mean ± SD (5.500±1.989) while job title show that is a significant relations between knowledge and job title (increase in Specialist) were F= 55.743 were p-value <0.001Mean ± SD 6.211±1.933 in and Consultant were Mean ± SD 5.048±2.085.regarding years of experience show that a significant relation between knowledge and Years of experience (Increase in>15) were T= 82.627 were p-value <0.001 .

Conclusions

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. There is need to encourage postgraduate students to carry out research through provision of technical assistance and essential infrastructure during their postgraduate training program. Physicians in university hospitals need more training

regarding clinical research, particularly in biostatistics. They also require administrative assistance

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