Association Between Of Knowledge And Attitude About Utilization Of Laboratory Among Primary Care The Physicians In Makah Al-Mokarramah City, Saudi Arabia In 2023

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Abstract:

Background

*Clinical laboratories are critical to correct diagnosis of medical conditions to ensure appropriate management. Point prevalence survey (PPS) of antimicrobial use and resistance performed in Saudi Arabia in 2015 and 2017 showed high rates of antibiotic use, but poor laboratory utilization for definitive diagnosis of the infections for which the antimicrobials were prescribed. This study investigated the reasons for clinicians" poor utilization of the clinical laboratory for definitive diagnosis and treatment of infections. For a long time history and physical examination hare been the most important part of patient's assessment However, in recent years, the care of patients has become increasingly dependent on the results of laboratory investigations, and clinical laboratories have become major component in the delivery of health care. The physicians' knowledge, attitude and practices [1] among primary care the physicians towards laboratory have been investigated. **Aim of the study**: To assessment Association between of knowledge and attitude about Utilization of laboratory among primary care the physicians in Makah al-mokarramah city, Saudi Arabia in 2023.**Methods:** A cross-sectional study was conducted on laboratory services on primary care the physicians in Makah al-mokarramah 2023 Saudi Arabia. The study employed a self-administered questionnaire to collect data from patients attending both public PHC centres physicians (or outpatient clinics) in Makah city. The questionnaire was designed to collect data on a number of variables related both to health services users and providers. **Results:** the most of the participants (36.0%) were in the age group 30-40 years, majority of them were females (61.0%), nationality the majority of participant are Saudi were(81.0%) , Position status the majority of participant are Lab technician were(55.0%) , work experience the majority of participant 10–20 years were(44.0%). **Conclusion** These findings indicate that poor use of the microbiology laboratory seems mainly associated with perception and attitude of the physicians to the relevance of the laboratory, and perceived inadequacy of microbiology practice in some others. There is need to raise physicians" awareness on the relevance and*

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what constitutes optimal use of the clinical microbiology laboratory for accurate diagnosis of infections and appropriate antimicrobial use.

Keywords: *Association, knowledge, attitude, Utilization, laboratory, primary care , physicians in Makah.*

Introduction

Laboratory testing (chemistry, hematology, microbiology and pathology test requests) is the highest volume procedure in medicine and often estimated to drive at least 70% of downstream medical decisions [1]. However, many laboratory tests are ordered inappropriately, laboratory testing practices and reported that overutilization accounted for an average of 20.6% of lab tests [2]. Unpublished results from our research group show that in Saudi Arabia unnecessary repeat testing accounts for almost an additional 20% of test requests.[3] This widespread miss utilization of laboratory tests leads to medical mistakes, missed therapeutic opportunities, misdirected clinical effort, and ultimately misuse of public funds[4].

Medical laboratories are an essential component of effective health care systems. Laboratory results must be accurate and reliable to ensure that subsequent medical decisions made by physicians will lead to the best possible outcomes for the patient [5]. The result should also be delivered in a timely manner, as physicians often prefer empirical diagnosis to delayed diagnosis [6]. However, because access to quality testing is severely limited or undervalued, misdiagnosis commonly occurs , leading to inappropriate treatment and increased morbidity and mortality [7]. Therefore, there is a growing need to improve the quality of laboratory services that would enhance service utilization and patient outcomes. Analyzing the of factors Influencing the Utilization of laboratory services on Public Primary Health Care Services public PHC centres and private outpatient clinics contributes to an understanding of the factors driving the development of both health care sectors. [8]

Despite the gravity of the situation, laboratory utilization management initiatives generally struggle to show even a 10% reduction in testing. For example , [9]. Found that cost display on laboratory order forms resulted in a 9.1% decrease in the number of tests ordered [10]. Noted that printed educational materials have a performance improvement of 4.3% [11] Found that removing a common laboratory test (TSH-Thyroid Stimulating Hormone) from the requisition form resulted in a 12% decrease in its use [12]. Feedback and brief education reminder messages elicited a 10% reduction in testing [13]. Finally, a test frequency restriction of HbA1C testing within a 90-day period only led to a moderate decrease.

The factors which motivate physicians to request laboratory services are (i confirmation of clinical -impression; (ii) reassurances of patients or colleagues that something was being done, even if the results will not affect the diagnosis or therapy and (iii) occasionally requests are based on a desire to do a complete [14] showed that women physicians tended to order more laboratory service per patient the physicians, who are more knowledgeable and clinically skilled used fewer and more appropriate investigations and medical services.[15]

The knowledge of this association is important, especially in resource-limited health system settings, because policy-making is influenced by PHC overall performance rather than only laboratory performance [16]. In Saudi Arabia , the laboratory structure is integrated with the health care tier, which includes health centres and district, general and specialized hospitals [17]. Laboratories are thus expected to regularly conduct customer satisfaction assessments to achieve or maintain accreditation status, but this is not common in resource-limited countries [18].

Literature Review

Banah et al, 2022 reported the level laboratory service in primary health care was not found to be a significant predictor of overall primary health care performance in multivariate

analysis, which was unexpected. Further, the large confidence interval indicates that some precautions are needed in interpreting the absolute effect of LLS in PHC on PHC performance [19] also Jain et al,(2019) findings suggest that LLS in PHC could be a strong trigger to improve the PHC performance, but alone it is not an enough condition to improve the PHC performance .[20]

Patient could access public laboratory facility only on referral from medical doctor . Thus, the laboratory can help the physician in better decision-making, which could lead to better PHC performance. The literature had suggested that laboratory results could contribute up to two-third of medical decision-making [21]. Further, the literature had identified various reasons that could disrupt laboratory role in PHC like lack of resources and medical laboratory motivation [22]

WHO Guide (2015) Laboratory users' guidebook is important to communicate relevant information and instructions to users . In the study, the helpfulness of the handbook was the lowest-rated aspect (3.3), and most clinicians lacked a handbook (75.1%). This finding is consistent with studies where most physicians were dissatisfied with the availability or ease of understanding the handbook [23]

Study on repeat investigations judged that approximately 50% of LDH requests and 60% of serum calcium estimations were inappropriate according to explicit criteria, over-investigation is not limited to the laboratories.[24] One study showed that up to 65% of Laboratory requests, 11% of chest X-rays, and 26% of nursing services could not be justified. There is no reason to suppose that the over-ordering of investigations is restricted to just these accounts. It is likely that there is a general problem in the use of all PHC services. [26] Hence any solution for the problem of over-ordering of investigations should be seen as part of the general issue of effective use of resources.[27] other studies, the costs in terms of time, money, effort and convenience of initiating laboratory conservation behavior appears to overshadow lab personnel's desire to save laboratory [22]

Studies in Saudi Arabia majority of clinicians were satisfied with the laboratory services. This finding is not far from the studies conducted in eastern Saudi Arabia [23] and southwest Ethiopia , Tanzania, the finding appeared higher than studies conducted in southern Ethiopia [27], public hospitals of Ethiopia , Addis Ababa and Nekemte, Ethiopia , and a maternity hospital in Saudi Arabia [28]. However, those studies covered only hospitals, not primary health centres, or only physicians, not all clinicians. On the other hand, the finding is lower than the findings of the Q-Probes studies performed in the USA [27].The discrepancy with these studies reflects the better service quality and user experiences in such resource-rich settings with more advanced diagnostic facilities.

In the study, the strong positive correlation was obtained between laboratory service-related parameters and overall hospital performance (composite of patient results, staff and work system result, hospital efficiency and effectiveness result and flexibility performance) for Jordanian Hospitals [20]. The study on US hospitals showed that clinical technology inclusive of laboratory technology drives the hospital clinical quality and financial performance [21]

Rationale

Influencing the ordering of laboratory investigations, and in particular reducing unnecessary ones, is a vital concern to many primary cares the physicians. An account of the reasons why control is necessary is presented. There was no much research about knowledge and attitude the Utilization of laboratory services on Public Primary Health Care Services in Makah al-mokarramah City, the laboratory services could be investigated from the health care physicians perspective, such as the availability of ordered tests, courier services, availability of a helpful user guidebook, courtesy and respect, laboratory report format, turnaround time (TAT) of results, notification of critical results, and reliability of results . Previous studies in Saudi Arabia have shown that health care physicians were most dissatisfied with the provision of timely results, advisory services and notification of panic values, including the behavioral manners of providers. However, many argue the validity

of user satisfaction as a measure of quality, particularly technical aspects, as users could be more sensitive to behavioral aspects .

Aim of the study:
To assessment Association between of knowledge and attitude about Utilization of laboratory among primary care the physicians in Makah al-mokarramah city, Saudi Arabia in 2023.

Methodology:

Study design:
This study is descriptive cross-sectional study was conducted among 300 participant of the was conducted on laboratory services on Public Primary Health Care center in Makah al-mokarramah 2023 Saudi Arabia, was conducted from April to Juan 2023 in Makah PHC centers under supervision of Directorate of Health Affairs of Makah Al-Mukarramah in Saudi Arabia

Study Area
The study has been carried out in the city of Makah Al-Mokarramah 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 3 million. This study was conducted at primary health care among the physicians in Makah To assessment Association between of knowledge and attitude about Utilization of laboratory among primary care the physicians in Makah al-mokarramah city, Saudi Arabia in 2023, Saudi Arabia. During the April to Juan 2023, participants were primary health care in Makah, 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 Makah population.
Study Population

The study has been conducted regarding the impact of knowledge and attitude about Utilization of laboratory among primary care the physicians in Makah , during the August to September 2023 **..**

Selection criteria:

Inclusion criteria
- Clinicians of the randomly selected primary health care.
- Using laboratory services during the study period were the study population.
- Sound cognitive abilities
- All nationalities
- Both males and females.

Exclusion criteria :
- Clinicians and nurses who did not voluntarily participate were excluded
- Patients with severe cognitive impairment such as dementia or delirium.
- Patients unwilling to give written consent to participate.

Sample size
The sample size has been calculated by applying Raosoft sample size calculator based on (The margin of error: 5%, Confidence level: 95%, and the response distribution was considered to be 20%) accordingly the Sample size is 300 of Saudi Population attending

in PHC and adding 10 more to decrease margin of error. After adding 5% oversampling, the minimum calculated sample has been 300. Computer generated simple random sampling technique was used to select the study participants.

Sampling technique:

Systematic random sampling technique is adopted. After that, by using random number generator, then simple random sampling technique has been applied to select the participant. Also, convenience sampling technique will be utilized to select the participants in the study, by using systematic sampling random as dividing the total clinicians on work at clinical units by the required sample size; (300).

Data collection tool

The study employed a self-administered questionnaire to collect data from physicians in both public PHC centres (and outpatient clinics) in Makah city. The questionnaire was designed to collect data on a number of variables related both to health services users and providers. Descriptive statistics socio-demographic and medical data were used to determine the significant variables which may influence the utilization of this service.

Data collection technique:

Researcher has been visiting the Outpatient Clinics at public PHC centres Makah City, Saudi Arabia in 2023 after getting the approval from the ministries of health . The researcher has been obtained permission from participants. After the arrival of the participants has been explained the purpose of the study to all participants attending .

Data entry and analysis:

The data were coded and introduced to the Statistical Package of Social Sciences (SPSS, version 24). The data were analyzed to present the findings in descriptive and inferential statistics. The descriptive statistics include frequencies and percentages for categorical variables, while means, median and standard deviations were used to summarize numerical data. The significant associations between demographic and background variables were detected at < 0.05 significance level.

Pilot study:

A pilot study has been conducted in the same sector due to the similarity to the target group using the same questionnaire to test the methodology of the study. As a feedback, the questionnaire has been clear and no defect has been detected in the methodology.

Ethical considerations:

Permission from the directorate of health , verbal consents from all participants in the questionnaire were obtained. All information was kept confidential, and results will be submitted to the department as feedback. The researcher described the aim and objectives of the study for the residents. No names were required to assure confidentiality of data, and all information was kept confidential only for this study's purposes.

Budget: Self-funded

Result

Table 1 Table 1 Distribution of socio-demographic data in our study in Makkah City, Saudi Arabia. (n-200)

	N	%
Age		
<30 years	50	25
30-40 years	72	36
40 -50years	40	20

>50	38	19
Gender		
Female	122	61
Male	78	39
Nationality		
Non-Saudi	38	19
Saudi	162	81
Position		
Laboratory doctor	46	23
physicians	44	22
Lab technician	110	55
Work experience		
Less than 10 years	86	43
10–20 years	88	44
More than 20 years	26	13
Marital status		
Un married	98	49
Married	102	51

Table 1 shows that most of the participants (36.0%) were in the age group 30-40 years follow by the (25.0%) were the age group <30 years, followed by age 40-50 years were (20.0%), the majority of them were females (61.0%) while male(39.0%), also regarding Nationality the majority of participant are Saudi were(81.0%) while Non- Saudi were(19.0%), regarding Position status the majority of participant are Lab technician were(55.0%) while Laboratory doctor were(32.0%), but physicians were (22.0%), regarding work experience the majority of participant 10–20 years were(44.0%) while Less than 10 years were(43.0%), but more than 20 years were (13.0%), regarding the Marital state the majority of participant married were (51.0%). While unmarried were(49.0%).

Table 2: Distribution of the knowledge about Utilization of laboratory among primary care the physicians

Do you have knowledge about		knowledge			Chi-square	
		Yes	No	don't know	X^2	P-value
knowledge number of tests provided	N	162	24	14	205.24	<0.001*
	%	81	12	7		
Percentage of standard test menu provided	N	134	30	36	102.28	<0.001*
	%	67	15	18		
Service functionality/uninterrupted period	N	182	4	14	300.04	<0.001*
	%	91	2	7		
Standard test availability period	N	152	10	38	169.72	<0.001*
	%	76	5	19		
Stepwise accreditation audit score	N	176	18	6	270.04	<0.001*
	%	88	9	3		
Concordance rate of malaria microscopy	N	174	20	6	260.68	<0.001*
	%	87	10	3		
	N	184	12	4	310.24	<0.001*

Species agreement rate of malaria results	**%**	92	6	2		
Concordance rate of TB microscopy	**N**	172	10	18	250.12	<0.001*
	%	86	5	9		

Table 2 shows regarding the knowledge about Utilization of laboratory among primary care the physicians about knowledge number of tests provided the most of the participants answer Yes were (81.0%) while No were (12.0%) followed by don't know were (7.0%) while a significantly associated were $P< 0.001$ and X^2 (205.24), regarding the Percentage of standard test menu provided the most of the participants answer Yes were (67.0%) while don't know were (18.0%) followed by No were (15.0%) while a significantly associated were $P< 0.001$ and X^2 (102.28), regarding the Service functionality/uninterrupted period the most of the participants answer Yes were (91.0%) while don't know were (7.0%) followed by No were (2.0%) while a significantly associated were $P< 0.001$ and X^2 (300.04), regarding Standard test availability period the most of the participants answer Yes were (76.0%) while don't know were (19.0%) followed by No were (5.0%) while a significantly associated were $P< 0.001$ and X^2 (169.72), regarding Stepwise accreditation audit score the most of the participants answer Yes were (88.0%) while No were (9.0%) followed by don't know were (3.0%) while a significantly associated were $P< 0.001$ and X^2 (270.04),
regarding Concordance rate of malaria microscopy the most of the participants answer Yes were (87.0%) while No were (10.0%) followed by don't know were (3.0%) while a significantly associated were $P< 0.001$ and X^2 (260.24), regarding Species agreement rate of malaria results the most of the participants answer Yes were (92.0%) while No were (6.0%) followed by don't know were (2.0%) while a significantly associated were $P< 0.001$ and X^2 (310.72), regarding Concordance rate of TB microscopy the most of the participants answer Yes were (86.0%) while don't know were (9.0%) followed by No were (5.0%) while a significantly associated were $P< 0.001$ and X^2 (250.12),

Table 3 : Distribution of the attitude about Utilization of laboratory among primary care the physicians

Items	Attitude		Chi-square	
	N	**%**	**X²**	**P-value**
How often you wash your hands with proper detergent after contact with patient				
Always	152	76		
Sometimes	24	12	163.84	<0.001
Never	24	12		
Do you use antiseptic hand rub to clean hands?				
yes	176	88	114.005	<0.001
No	24	12		
How often do you use all personal protective equipment's as per standard to prevent infection?				
Always	144	72	37.845	<0.001
Sometimes	56	28		
When do you change chlorine solutions thatProcessing? used for instrumental				
Every 24 h	132	66	19.845	<0.001
After 2 days	68	34		
How often do you use glove when you perform procedures that need wearing glove?				
Always	174	87	108.045	<0.001

Sometimes	26	13		
Have you ever exposed to blood or other body fluids of patients through contact or unprotected skin?				
Yes	118	59	6.125	0.013
No	82	41		
What measure did you take if you are exposed to blood or fluids, needle stick injury?				
Only taking Post exposure prophylaxis	10	5		
Only clean by alcohol	30	15		
Only washing with water	8	4		
Taking Post exposure prophylaxis and clean by alcohol	20	10	75.8	<0.001*
Taking post exposure prophylaxis and washing with water	36	18		
Clean by alcohol and washing with water	32	16		
All action taken	64	32		
Did you practice high-level disinfection where sterilization is not applicable?				
Yes	86	43	3.645	0.0562
No	114	57		
What is your facility sterilization technique				
Boiling	58	29	34.445	<0.001
steam sterilization	142	71		

Table 3 show distribution of the attitude about Utilization of laboratory among primary care the physicians regarding how often you wash your hands with proper detergent after contact with patient the majority of the participants answer always were(76.0%), while sometimes were (12.0%) but never were (12.0%) while a significantly associated were P< 0.001 and X^2 (163.84), regarding the you use antiseptic hand rub to clean hands the majority of the participants answer Yes were(88.0%). While No were (12.0%) while a significantly associated were P< 0.001 and X^2 (114.005) , regarding the How often you wash your hands with proper detergent after contact with patient the majority of the participants answer always were(72.0%), while sometimes were (28.0%) while a significantly associated were P< 0.001 and X^2 (37.845), regarding the you change chlorine solutions that used for instrumental Processing the majority of the participants answer every 24 h were(66.0%) followed by after 2 day were (34.0%) while a significantly associated were P< 0.001 and X^2 (19.845), regarding the How often do you use glove when you perform procedures that need wearing glove the majority of the participants answer always were(87.0%), while sometimes were (13.0%) while a significantly associated were P< 0.001 and X^2 (108.045), regarding the you ever exposed to blood or other body fluids of patients through contact or unprotected skin the majority of the participants answer Yes were(59.0%). While No were (41.0%) while a significantly associated were P< 0.001 and X^2 (6.125), regarding the measure did you take if you are exposed to blood or fluids, needle stick injury the majority of the participants answer all action taken were(32.0%), while taking post exposure prophylaxis and washing with water were (18.0%), but clean by alcohol and washing with water were (16.%) while a significantly associated were P< 0.001 and X^2 (75.8) , regarding you practice high-level disinfection where sterilization is not applicable the majority of the participants answer No were(57.0%). while Yes were (43.0%) while no significantly associated were P< 0.0562 and X^2 (3.645), regarding What is your facility sterilization technique the majority of the participants answer Steam sterilization were(71.0%). while boiling were (29.0%) while a significantly associated were P< 0.001 and X^2 (34.445).

Table 4: Distribution of knowledge and attitude about Utilization of laboratory among primary care the physicians

	N	%	Chi-square	
knowledge			**X^2**	**P-value**
No	64	32	25.205	<0.001*
Yes	136	68		
Attitude				
Negative	38	19	75.645	<0.001*
Positive	162	81		

This table 4 shows regarding the knowledge the majority of participant answer Yes were (68.0%) about Utilization of laboratory among primary care the physicians , followed by No (32.0%) while a significantly associated were P< 0.001 and X^2 (25.205), while regarding the attitude the majority of participant positive attitude were (81.0%) while negative attitude were (19.0%) while a significantly associated were P< 0.001 and X^2 (75.645) .

Table 5 Distribution of the relationship about knowledge of the Utilization of laboratory among primary care the physicians and the demographic data.

		knowledge				Total		Chi-square	
		No (n=64)		Yes (n=136)					
		N	%	N	%	N	%	X^2	P-value
Age	<30 years	10	15.63	40	29.41	50	25	38.151	<0.001*
	30-40 years	15	23.44	57	41.91	72	36		
	40 -50years	11	17.19	29	21.32	40	20		
	>50	28	43.75	10	7.35	38	19		
Gender	Female	30	46.88	92	67.65	122	61	7.893	0.005*
	Male	34	53.13	44	32.35	78	39		
Nationality	Non-Saudi	12	18.75	26	19.12	38	19	0.004	0.951
	Saudi	52	81.25	110	80.88	162	81		
Position	Laboratory doctor	9	14.06	37	27.21	46	23	9.020	0.011*
	physicians	10	15.63	34	25.00	44	22		
	Lab technician	45	70.31	65	47.79	110	55		
Work experience	Less than 10 years	12	18.75	74	54.41	86	43	46.004	<0.001*
	10–20 years	21	32.81	67	49.26	88	44		
	More than 20 years	21	32.81	5	3.68	26	13		
Marital status	Un married	33	51.56	65	47.79	98	49	0.247	0.619
	Married	31	48.44	71	52.21	102	51		

Table (5) show that is a significant relation between knowledge and demographic data regarding age increase in >50 years were answer No were (43.75%), follow by30-40 age

answer yes were (41.91%) in total respectively were (19.0%, 36.0%) while P-value=0.001, X^2 38.151, regarding the gender is a significant relation between knowledge and gender increase in Female answer Yes were (67.65%), follow male answer No were (53.13%) in total respectively were (61.0%, 39.0%) while P-value=0.005, X^2 7.893, regarding the nationality was no significant relation between knowledge and nationality increase in 50 Saudi answer No were (81.55%), follow answer yes were (80.88%) in total were (81.0%) while P-value=0.951, X^2 0.004, regarding the Position is a significant relation between knowledge and Position increase in Lab technician answer No were (70.00%), follow answer Yes were (47.79%) in total were (55.0%) while P-value=0.011, X^2 9.020, regarding the work experience was a significant relation between knowledge and work experience increase in 10–20 years answer No were (32.81%), follow Less than 10 years answer yes were (54.41%) in total respectively were (44.0%,43.0%) while P-value=0.001, X^2 47.004, regarding the marital status is no significant relation between knowledge and marital status increase in marital status answer No were (51.56%), follow married answer Yes were (52.21%) in total respectively were (49.0%, 51.0%) while
 P-value=0.619, X^2 0.247

Figure 1 Distribution of the relationship about knowledge of the Utilization of laboratory among primary care the physicians and the demographic data
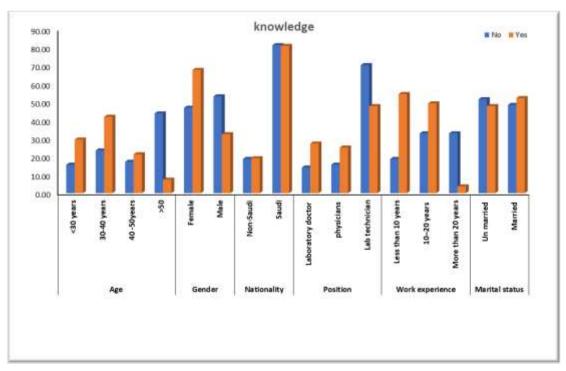

Table 6 Distribution of the relationship about attitude of the Utilization of laboratory among primary care the physicians and the demographic data.

	Attitude				Total		Chi-square	
	Negative (n=38)		Positive (n=162)					
	N	%	N	%	N	%	X^2	P-value

Age	**<30 years**	6	15.79	44	27.16	50	25	10.217	0.017
	30-40 years	9	23.68	63	38.89	72	36		
	40 -50years	10	26.32	30	18.52	40	20		
	>50	13	34.21	25	15.43	38	19		
Gender	**Female**	29	76.32	93	57.41	122	61	4.626	0.031
	Male	9	23.68	69	42.59	78	39		
Nationality	**Non-Saudi**	6	15.79	32	19.75	38	19	0.314	0.575
	Saudi	32	84.21	130	80.25	162	81		
Position	**Laboratory doctor**	7	18.42	39	24.07	46	23	0.560	0.756
	physicians	9	23.68	35	21.60	44	22		
	Lab technician	22	57.89	88	54.32	110	55		
Work experience	**Less than 10 years**	11	28.95	75	46.30	86	43	8.559	0.014
	10–20 years	17	44.74	71	43.83	88	44		
	More than 20 years	10	26.32	16	9.88	26	13		
Marital status	**Un married**	9	23.68	89	54.94	98	49	12.031	0.001
	Married	29	76.32	73	45.06	102	51		

Table (5) show that is a significant relation between attitude and demographic data regarding age increase in >50 years were answer negative were (34.21%), follow by30-40 age answer positive were (38.89%) in total respectively were (19.0%, 36.0%) while P-value=0.017, X^2 10.217, regarding the gender is a significant relation between attitude and gender increase in Female answer negative were (76.32%), follow male answer positive were (57.41%) in total were (61.0%,) while P-value=0.031, X^2 4.626, regarding the nationality was no significant relation between attitude and nationality increase in 50 Saudi answer negative were (84.21%), follow answer positive were (80.25%) in total were (81.0%) while P-value=0.575, X^2 0.314, regarding the Position is no significant relation between attitude and Position increase in Lab technician answer negative were (57.89%), follow answer positive were (54.32%) in total were (55.0%) while P-value=0.756, X^2 0.560, regarding the work experience was a significant relation between attitude and work experience increase in 10–20 years answer negative were (44.74%), follow Less than 10 years answer positive were (43.83%) in total were (44.0%) while P-value=0.014, X^2 8.559,

regarding the marital status is a significant relation between attitude and marital status increase in marital status answer negative were (76.32%), follow unmarried answer positive were (54.94%) in total respectively were (51.0%, 49.0%) while P-value=0.001, X^2 12.031

Discussion

Physician engagement is Key to the success of any laboratory utilization management strategy. Through an study's by physicians, that most sampled physicians in Saudi Arabia consider miss utilization of laboratory testing to be an important issue and perceive that both laboratory over and underutilization are occurring at high rates.

Primary health care is an important health care facility in all areas, but the approach to ignore laboratory in PHC facility may not be appropriate to maximize the PHC performance. total of (200) participated in the study, the researcher selected the participated from Public Primary Health Care center in Makah, the study has been conducted regarding impact of knowledge and attitude about Utilization of laboratory among primary care the physicians in Saudi Arabia. One of the most important characteristics of Makah is its location, which is characterized by proximity to Makah. In our study shows that most of the participants (36.0%) were in the age group 30-40 years, majority of them were females (61.0%), nationality the majority of participant are Saudi were(81.0%), Position status the majority of participant are Lab technician were(55.0%), work experience the majority of participant 10–20 years were(44.0%), the marital state the majority of participant married were (51.0%). (See table 1).In similar study the Rusanganwa et al (2020) found The level of laboratory service in PHC and number of OPD visits per day is positive, the strong positive correlation was obtained between laboratory service-related parameters and overall hospital performance (composite of patient results, staff and work system result, hospital efficiency and effectiveness result and flexibility performance) for Jordanian Hospitals' [29].

The most popular initiatives with physicians are continued education and audit and feedback techniques. Unfortunately, the effectiveness of both of knowledge about Utilization of laboratory among primary care the physicians are weak. Studies Suggested an absolute risk difference of across various outcomes; however the knowledge of data was low [30]. A recent meta-analysis by research group (unpublished) shows that knowledge and techniques have only a modest effect and 14/22 of identified studies failed to reach significance. Larger effects are often seen with the other knowledge , which we found acceptable to fewer surveyed physicians, For example, effect sizes of up to 96% where found in an Ontario study following removal total thyroxin testing from provincial health plan funding [31]. In laboratory service, customers' perspective, including the clinicians' and nurses ones, has increasingly become an important tool to identify opportunities for quality improvement[32] .

in our result shows the knowledge about Utilization of laboratory among primary care the physicians about knowledge number of tests provided the most of the participants answer Yes were (81.0%) while a significantly associated were P< 0.001 and X2 (205.24), also regarding the Service functionality/uninterrupted period the most of the participants answer Yes were (91.0%) (See Table 2)

Distribution of knowledge and attitude about Utilization of laboratory among primary care the physicians information from respondents on their general attitude towards laboratory conservation as well as the use of energy efficient equipment in laboratories . It was clear that lab physicians generally have a positive view about utilization of laboratory efforts although they acknowledge difficulties in realizing conservation in their labs. Many participants revealed some prior consideration of in their lab and the view that it would be a good practice to try and implement of laboratory conservation. Some participants offered specific examples of the benefits of doing so, in our result shows regarding the knowledge the majority of participant answer Yes were (68.0%) about Utilization of laboratory among primary care the physicians , followed by No (32.0%) while a significantly associated were P< 0.001 and X2 (25.205), while regarding the attitude the majority of participant positive

attitude were (81.0%) while negative attitude were (19.0%) while a significantly associated were P< 0.001 and X2 (75.645) . (See Table 4)

Regarding the distribution of the relationship about knowledge and attitude of the Utilization of laboratory among primary care the physicians and the demographic data found show that the most of demographic data is a significant relation between knowledge and the majority of demographic data heave negative attitude relation . (See Table 5, 6)

Conclusion

There had been number of Saudi centers an increase in the physicians in PHC, not a single physician had any postgraduate in general practice. Laboratory investigations are essential services for PHC center physicians. The quality of current laboratory serves is deficient in the opinion of 30% of physicians. The utilization of laboratory tests in Saudi Arabia is most probably higher than many other developing countries with less economic welfare, but this does not necessarily mean belter utilization. The study concludes that laboratory services could play an important role in maximizing the PHC performance. Higher level laboratory service in PHC could help in getting more visits in the OPD. The training of existing laboratory techniques could be a cost-effective approach in resource-constrained settings to maximize the returns from the existing medical workforce in PHCs. Finally, study found that PHCs with lower population coverage could benefit from higher level laboratory service as compared to other PHCs in enhancing their performance in terms of number of OPD visits per day.

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