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Attitudes of Healthcare professionals' regarding medical laboratory technology in Saudi Arabia 2024

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Abstract:
Background: Medical lab technology (MLT) plays a crucial role in disease diagnosis, enabling healthcare professionals to identify and understand the underlying causes of various medical conditions with unparalleled accuracy. Without the tests conducted in medical labs, modern medicine could not function. Medical laboratory technology is essential to the health care system in this day and age of quickly changing medical research and application. Despite this, certain medical professionals have a tendency to place a lower value on their profession, which may lead to a decrease in the mobilization of health teams and ultimately impact patient care.
The study aimed: To assess the attitude of healthcare professionals (HCPs) towards medical laboratory technology.
Methods: A cross-sectional study was carried out among HCPs working in Hospital in Jeddah, Saudi Arabia from January to April 2024. A standardized questionnaire that was self-administered was utilized to collect information on the respondents' socio-demographic traits and attitudes on medical laboratory technologies. Using a 3-5 point Likert scale, participants were asked to rank their responses according to significance.
Results: An overall response rate of 80% was obtained from the 108 completed and returned surveys out of the 135 that were delivered. According to the survey, seventy-five percent of the participants had a positive opinion of medical laboratory technology. In particular, 85.7, 81.3, and 72% of doctors, health officers, and nurses, respectively, showed a positive attitude. Furthermore, according to 68.5% of participants, the role that laboratories play in improving patient care is "very important." However, 11.1% of the respondents expressed some undesirable habits and had a negative attitude.
Conclusion: Most study participants had positive attitudes regarding medical laboratory technologies; the negative reactions could have an impact on patient care quality and teamwork. The quality of patient care may be improved by encouraging teamwork among healthcare professionals through team training.
Key words: Attitude, Medical laboratory technology, Healthcare Professionals

Introduction:

The medical laboratory science (MLS) profession is an integral part of the healthcare team, providing diagnostic laboratory results used to determine directives in the treatment and management of disease processes [(1)]. Among these healthcare professionals are medical

laboratory technologists (MLTs), who work primarily behind the scenes. MLTs conduct medical laboratory testing and analyses to assist in the diagnosis, treatment, monitoring, and prevention of disease [(2)]. MLTs work in various clinical laboratories, including hospitals, blood banks, public and private clinics, and research institutions. They practice in various specialized areas, including clinical chemistry, hematology, transfusion medicine/science, diagnostic cytology, cytogenetic, histology, immunology, microbiology, bacteriology, and virology [(1, 2)].

A Medical Laboratory Technologist (MLT) is a health-care professional that uses a variety of complex instruments and processes to analyze tissue samples, blood and other body fluids in order to detect, prevent, and manage physiological and pathological conditions. MLTs provide the results of these sophisticated tests to physicians, allowing them to make accurate diagnosis and if needed, appropriate treatment [(3)]. A variety of experts collaborate to assess the existence, severity, or absence of disease and give the information required to assess the efficacy of treatment in the health care system [(4)].

A clinical diagnosis followed by test confirmation is a component of the art of medicine [(5)]. Medical laboratory technology is one of the most crucial areas of allied health care providers that provides the service on a scientific basis by giving precise information to those in charge of patient treatment, setting health priorities and allocating resources, keeping an eye on the growth and spread of infectious pathogens, and determining efficient control measures against major prevalent diseases [(6)]. Patients are less likely to receive the best care possible without trustworthy medical laboratory support, and severe infectious diseases and epidemics won't be consistently contained or their sources recognized [(7)].

One crucial instrument for fostering professionalism in healthcare institutions is cooperation between various medical specialists [(8)]. A good understanding of the medical laboratory profession is essential for health workers in this day and age, as clinical laboratories are becoming more and more significant in hospital and community settings. Collaboration may suffer if one member of the healthcare team doesn't know enough about the other [(9)].

In Saudi Arabia, the profession of medical laboratory science is one of the most under-recognized parts. The actual interaction between medical lab professionals and the rest of healthcare members is not clearly indicated and explored. But in clinical and public health medicines, medical lab professionals provide diagnostic activities to be utilized by clinicians or other professionals. Yet, no study was conducted in Saudi Arabia concerning the attitude of healthcare professionals towards medical laboratory technology. Therefore, the aim of this study was to assess the attitude of healthcare professionals towards medical laboratory technology. The present study was conducted to fill this gap and the finding will also be used as baseline information for further similar studies.

Methods

A cross-sectional study was carried out among HCPs working in Hospital in Jeddah, Saudi Arabia from January to April 2024. All healthcare professionals who volunteered to participate in the study during the data collection period were included conveniently in the present study. The self-administered structured questionnaire, filled by the respondents, was used to generate data on the socio-demographic characteristics of the respondents and their attitude towards medical laboratory technology. A three to five- point Likert scale, ranging from 1 (strongly agree) to 5 (strongly disagree), was created for some of the questions. There were fill-in the blanks, yes/no questions and multiple-choice responses. To avoid response bias, medical laboratory professionals were excluded from the study.

Data was collected under the supervision of the chief investigator and was completed preferably at the convenient time of the study subjects. Generated data were compiled and analyzed with SPSS v28. Frequency tables, charts and descriptive summary measures were used to present data. When participants responded positive answers to ≥75% of the questions they were provided, it was considered as favorable attitude. The study was approved by Ethical Committee. Before the research, staff explained the aim and importance of the study, written informed consent was obtained from each study subjects. Individual records were coded and accessed only by research staff

Results

Table (1) shows that a total of 108 professionals returned the questionnaire, making the response rate 80%. The majority: (64.8%) were males. Most of the respondents were nurses, (40.7%) and physicians, (19.4%). The mean age of the participant was 25.5 years. Most of the respondents, (33.3%) had a service year of ≤1 year with mean service year of 4.7.

Table (1): Socio-demographic character of the study participants

Variables	**n (%)**	
Age		
21 -25	58 (53.7)	
26-30	15 (13.9)	
31-35	13 (12)	Mean age 25.5 years
36-40	11 (10.2)	
41-45	10 (9.3)	
46-50	1 (0.93)	
Sex		
Male	70 (64.8)	Male: Female ratio 1: 0.54
Female	38 (35.2)	
Professional category		
Medical doctor	21 (19.4)	
Pharmacy	11 (10.2)	
Radiology	2 (1.9)	
Health officer	16 (14.8)	
Nurse	44 (40.7)	
Environmental health	5 (4.6)	
Others	9 (8.3)	
Service year		
≤ 1	36 (33.3)	
2-5	34 (31.5)	
6-9	11(10.2)	
≥10	27 (25.0)	

Table (2): Of the respondents, 74 (68.5%) believed that medical laboratory professionals contribution to the good patient outcome is ‘very important’, the rest, 34 (31.5%) believed it is ‘good’. From those who believed medical laboratory professionals contribution to the good

patient outcome is very important, the physicians took the lead, 17 (80%) followed by health officers, 12 (75%).

Table (2): Participants' rate on the contribution of medical laboratory technology for good patient outcome

	Very important	**Important**	**Total**
Professional category	**n (%)**	**n(%)**	**n (%)**
Medical doctors	17 (80)	4 (20)	21(100)
Pharmacist	6 (54.5)	5 (45.5)	11 (100)
Nurse	30 (68.2)	14 (31.8)	44(100)
Health officer	12 (75)	4 (25)	16(100)
Radiologist	1(50)	1 (50)	2(100)
Environmental health	2 (40)	3 (60)	5(100)
Others	6 (66.7)	3 (33.3)	9(100)
Total	**74 (68.5)**	**34 (31.5)**	**108 (100)**

Table (3): show that most of the study participants, 53 (49.1%) disclosed that medical laboratory professionals working in their health institution were 'fairly competent', 43 (39.8%) of them reported that they were 'competent' and the rest, 12 (11.1%) noted that they were 'incompetent'.

Table (3): Participants' perception on the level of medical laboratory professionals competency

	Competent	**Fairly competent**	**Incompetent**	**Total**
	n (%)	**n(%)**	**n (%)**	**n (%)**
Medical doctors	3 (14.3)	10 (47.6)	8 (38.1)	21 (100)
Pharmacist	4 (36.4)	7(63.6)	0	11 (100)
Nurse	20 (45.5)	21(47.7)	3 (6.8)	44 (100)
Health officer	9(56.1)	6 (37.5)	1 (6.3)	16 (100)
Radiologist	0	2 (100)	0	2 (100)
Environmental health	4 (80)	1(20)	0	5 (100)
Others	3(33.3)	6 (66.7)	0	9 (100)
Total	**43 (39.8)**	**53 (49.1)**	**12 (11.1)**	**108 (100)**

Table (4): show that The respondents work relation with laboratory professionals was rated as excellent, very good, good and bad, respectively with these percentage: 16 (14.8%), 24 (22.2%), 37 (34.3%) and 12 (11.1 %). The rest reported, fairly well. When the first three rates are considered together as 'good', it accounts for 71.3%.

Table (4): Work relationship of medical laboratory professionals with other group of health professionals

Professional Categories	**Good**	**Bad**	**Total**
	n (%)	**n (%)**	**n (%)**
Medical doctors	11 (52.4)	10 (47.6)	21(100)
Pharmacist	11 (100)	0	11(100)
Radiologist	1 (50)	1(50)	2(100)
Health officer	10 (62.5)	6 (37.5)	16(100)
Nurse	33 (75)	11(25)	44(100)

Professional Categories	Good n (%)	Bad n (%)	Total n (%)
Environmental health	3 (60)	2 (40)	5(100)
Others	8 (88.9)	1 (11.1)	9(100)
Total	**77 (71.3)**	**31 (28.7)**	**108 (100)**

The degree in which medical laboratory professionals exchange valid data with those who utilize it in a timely fashion was rated as good, fairly good and poor which respectively accounted for 56 (51.9%), 18 (16.7%) and 17 (15.7%). Most of the respondents, 59 (54.7%) believed that the salary and incentive that the medical laboratory professionals obtained was unsatisfactory. Regarding the reason why laboratory service facility in Ethiopia is very weak, the participants disclosed the following; shortage of equipment and supplies, shortage of qualified personnel, poor maintenance system, lack of close follow up and supervision and lack of public health leadership that accounted for 34.9%, 18.3%, 17.3%, 16.2%, and 13.3%, respectively.

The possible reason why laboratory service face different problems in developing countries was asked, the participants rated the following; weak integration of science (38.8%), lack of public health leadership (31.3%) and inadequate human resource (29.9%).

Discussion

The present study revealed that largest percentage of non-respondents was general practitioners and medical specialists, which may be because of their comparatively heavy workloads. Today, the medical laboratory industry serves as the hub of hospitals. Medical laboratory specialists are essential to the practice of modern medicine. [10]. This might be the reason why more than three-quarters of the respondents in this study have Medical Laboratory Science demonstrated favorable attitude towards medical laboratory technology. Even though there was no related literature found against which this finding could be compared, the observed unfavorable attitude (11.1%), could affect health professionals' team spirit.

The current study revealed that the majority of the respondents, (75.9%) had a favorable attitude towards medical laboratory technology, in contrast, (11.1%) of them had unfavorable attitude and the rest, (13%) were unable to decide. When percentage with in a category was observed separately, (85.7%) of physicians, (81.3%) health officers (HO) and (72.7%) nurses indicated favorable attitude.

Competence in one's area of expertise is a major prerequisite for harmonious interdisciplinary team work. Accurate laboratory test results depend on staff being competent in performing a range of procedures that occur throughout the entire examination process [7]. Almost half, (49.1%) of the respondents believed that laboratory professionals working in their institution were fairly competent and (11.2%) of the subjects responded that laboratory professionals were incompetent. Some medical laboratory professionals' perceived incompetency especially by the physician and nurses might contribute to develop an unfavorable attitude towards laboratory profession.

The final goal of health team is to provide appropriate and relevant patient care, a disagreement that could exist within a team in health service unit that has the potential to be destructive. The present study showed that (71.3%) of the respondents stated their work relation with laboratories was good. More than half of the respondents believed that salary and incentive that earn was unsatisfactory. Unless professionals' activity is complemented with proportional incentive and salary packages, individuals' motivation and service provision energy might be compromised.

As described by Yami et al. (2001) [(11)], demonstrated that (46.2%) of the healthcare workers in the same study area are dissatisfied with their job. The major reasons reported for their dissatisfaction were lack of motivation, inadequate salary, insufficient training opportunities and an inadequate number of human resources. Effective implementation and sustainability of quality laboratory programs rely on the development of appropriate incentive and promotion strategies to increase satisfaction at their current job [(12)]. So, that they could work and motivated to satisfy their customers.

The interchange of information between medical laboratory and the clinicians is a daily occurrence [(13)]. Among the respondents, (51.9%), (16.7%), (15.7%) and (15.7%) reported that the degree in which laboratory professional exchange laboratory result timely was good, fairly good, very good and poor, respectively. High rate of poor response was reported by physicians, (38.1%). This again might have contributed its share to developing negative attitude by some of the physicians. Laboratory service in developing countries like Ethiopia faces different problems to advance public health. Almost in all health institutions in Ethiopia, medical laboratories were reported with a shortage of common supplies and reagents. Common and simple tests were not even done due to severe reagent shortages [(14)].

The problem in the laboratories aggravated particularly at peripheral level due to different reasons like lack of properly designed laboratory rooms, lack of water and electricity access, shortage of equipment and supplies, shortage of skilled man power, weak integration of science and absence of maintenance and spare parts [(14)]. According to the respondents' rate among the factors mentioned above, shortage of equipment and supplies account for the higher percentage (34.9%). This might be explained by the low socioeconomic standard of the country [(14)]. Despite the fact that the subject has not yet been thoroughly examined, there were not enough study participants to make meaningful inferences. Similarly, because nurses and doctors have different roles in the health team, it may be challenging to compare them. For this reason, the study did not account for the familiarity and frequent service consumers of the laboratory discipline. Despite these drawbacks, the study's findings will be a valuable starting point for future research aimed at fostering a sense of teamwork among medical professionals.

Conclusion:

The current study revealed that majority of the respondents had a favorable attitude towards medical laboratory technology. But, there were some professionals who demonstrated unwelcome perception to the field. Therefore, continuous effort should be in place to promote team sprit among healthcare team members and to scale up the health care service for patients. Similar studies with adequate sample size should be considered.

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